PLANNING COMMISSION
Regular Meeting

Agenda

Thursday, March 22, 2018 at 7:00 PM
City Hall Council Chamber – 14177 Frederick Street

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

SPECIAL PRESENTATION

Recognition and appreciation of dedicated service for Commissioner Brian Lowell

APPROVAL OF AGENDA

APPROVAL OF AGENDA

CONSENT CALENDAR

All matters listed under Consent Calendar are considered to be routine and all will be enacted by one roll call vote. There will be no discussion of these items unless Members of the Planning Commission request specific items be removed from the Consent Calendar for separate action.

APPROVAL OF MINUTES

Planning Commission - Regular Meeting – February 22, 2018 7:00 PM

PUBLIC COMMENTS PROCEDURE

Any person wishing to address the Commission on any matter, either under the Public Comments section of the Agenda or scheduled items or public hearings, must fill out a "Request to Speak" form available at the door. The completed form must be submitted to the Secretary prior to the Agenda item being called

by the Chairperson. In speaking to the Commission, member of the public may be limited to three minutes per person, except for the applicant for entitlement. The Commission may establish an overall time limit for comments on a particular Agenda item. Members of the public must direct their questions to the Chairperson of the Commission and not to other members of the Commission, the applicant, the Staff, or the audience.

NON-PUBLIC HEARING ITEMS

PUBLIC HEARING ITEMS

1. Case: PEN16-0013 General Plan Amendment
PEN16-0014 Change of Zone
PEN16-0015 Specific Plan Amendment

Applicant: LCG MVF, LLC

Owner: Joseph E. Miller, Moreno Valley Festival, LTD

Representative: LCG MVF, LLC

Location: Easterly of Heacock Street between Ironwood Avenue and State Highway 60.

Case Planner: Chris Ormsby

Council District: 1

Proposal: A GENERAL PLAN AMENDMENT, CHANGE OF ZONE AND SPECIFIC PLAN AMENDMENT TO MODIFY THE EXISTING FESTIVAL SPECIFIC PLAN 205 PROPOSING A WIDER RANGE OF LAND USES AND DEVELOPMENT OPPORTUNITIES

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution Nos. 2018-13 2018-14, 2018-15, and 2018-16 and thereby recommend that the Moreno Valley City Council:

Resolution No. 2018-13

1. **ADOPT** the Mitigated Negative Declaration (PEN16-0016) prepared for the Amended Festival Specific Plan (SP 205) project on file with the Community Development Department, incorporated herein by this reference which has been completed in compliance with the California Environmental Quality Act, that the Planning Commission reviewed and considered the information contained in the Mitigated Negative Declaration and that the Mitigated Negative Declaration

reflects the City's independent judgment and analysis hereto attached as Exhibit A; and

2. **ADOPT** the Mitigation Monitoring and Reporting Program prepared for the proposed Amended Festival Specific Plan (SP 205) project, attached hereto as Exhibit B; and

Resolution No. 2018-14

3. **APPROVE** PEN16-0013, General Plan Amendment as shown on the attachment included as Exhibit A; and

Resolution No. 2018-15

4. **APPROVE** PEN16-0014 Change of Zone as shown on the attachment included as Exhibit A; and

Resolution No. 2018-16

5. **APPROVE** PEN16-0015, Specific Plan Amendment 205 subject to the attachment included as Exhibit A.

OTHER COMMISSION BUSINESS

STAFF COMMENTS

PLANNING COMMISSIONER COMMENTS

ADJOURNMENT

Planning Commission Regular Meeting, April 12, 2018 at 7:00 P.M., City of Moreno Valley, City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, CA 92553.

CITY OF MORENO VALLEY PLANNING COMMISSION
REGULAR MEETING
CITY HALL COUNCIL CHAMBER – 14177 FREDERICK STREET

Thursday, February 22, 2018 at 7:00 PM

CALL TO ORDER

VICE CHAIR KORZEC – Good evening and welcome to the Planning Commission of Moreno Valley. I now call this meeting to order on February 22, 2018, at 7:03 PM.

ROLL CALL

Commissioners Present:
Commissioner Lowell
Commissioner Baker
Commissioner Sims
Vice Chair Korzec
Chair Barnes – Excused Absent

Staff Present:
Rick Sandzimier, Planning Official
Albert Armijo, Interim Planning Official
Paul Early, Assistant City Attorney
Darren Ziegler, Deputy City Attorney I
Ashley Aparicio, Administrative Assistant
Gabriel Diaz, Case Planner
Mark Gross, Senior Planner
Julia Descoteaux, Associate Planner
Chris Ormsby, Senior Planner
Adria Reinertson, Fire Marshal
Allen Brock, Assistant City Manager
Michael Lloyd, Assistant City Engineer
Eric Lewis, City Traffic Engineer

Speakers:
Rafael Brugueras
Tom Behrens
Orlando Montero
Alfie Hernandez

PLEDGE OF ALLEGIANCE

VICE CHAIR KORZEC – The Pledge of Allegiance will be led by Commissioner Brian Lowell.

APPROVAL OF THE AGENDA

Approval of Agenda

VICE CHAIR KORZEC – Thank you, Commissioner Lowell. May we now have the rollcall? We are now going to move to the approval of the Agenda. We are going to move item number three up to item number two, we are just going to reverse that order, and item four will be removed because we no longer need that ad-hoc committee because of the City Council meeting putting forth some commissioners on Tuesday. So those will be changes.

COMMISSIONER LOWELL – I'll motion to approve the Agenda.

COMMISSIONER BAKER – I'll second.

VICE CHAIR KORZEC – All in favor. We're good to go. All in favor...

COMMISSIONER BAKER – Aye.

VICE CHAIR KORZEC – Aye.

COMMISSIONER SIMS – Aye.

COMMISSIONER LOWELL – Aye.

VICE CHAIR KORZEC – Opposed? Abstain? The motion carries.

Opposed – 0

Motion carries 4 – 0

CONSENT CALENDAR

All matters listed under Consent Calendar are considered to be routine and all will be enacted by one rollcall vote. There will be no discussion of these items unless Members of the Planning Commission request specific items be removed from the Consent Calendar for separate action.

VICE CHAIR KORZEC – Onto our Consent Calendar and, at this time, we have no items for consent.

APPROVAL OF MINUTES

Planning Commission - Regular Meeting - February 8, 2018 at 7:00 PM

VICE CHAIR KORZEC – We're now going to move to the approval of Minutes on the Agenda. The Planning Commission Regular Meeting Minutes of February 8, 2018. Recommendation: Approval of the Minutes as presented. Do we have a motion or discussion?

COMMISSIONER LOWELL – I'll motion to approve as presented.

COMMISSIONER BAKR – I'll second.

VICE CHAIR KORZEC – All in favor…

COMMISSIONER BAKER – Aye.

VICE CHAIR KORZEC – Aye.

COMMISSIONER SIMS – Aye.

COMMISSIONER LOWELL – Aye.

VICE CHAIR KORZEC –The motion passed.

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – We do have a vote.

VICE CHAIR KORZEC – Oh, we do have a vote on this one, okay, perfect. Well we've pushed our buttons.

PLANNING OFFICIAL RICK SANDZIMIER – There may be a glitch in the system because the Chairman is not here tonight, so and maybe there was some kind of a setting we were supposed to do. I'm not sure how to fix that but maybe we just do a rollcall vote.

VICE CHAIR KORZEC – Okay. All in favor, oh, a rollcall vote.

PLANNING OFFICIAL RICK SANDZIMIER – Actually, it did kick in.

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – My apologies. I think I have to click the stop the vote.

PLANNING OFFICIAL RICK SANDZIMIER – It did kick in.

VICE CHAIR KORZEC – We're okay. Okay, the motion is passed.

Opposed – 0

Motion carries 4 – 0

PUBLIC COMMENTS PROCEDURE

Any person wishing to address the Commission on any matter, either under Public Comments section of the Agenda or scheduled items or public hearings, must fill out a "Request to Speak" form available at the door. The completed form must be submitted to the Secretary prior to the Agenda item being called by the Chairperson. In speaking to the Commission, member of the public may be limited to three minutes per person, except for the applicant for entitlement. The Commission may establish an overall time limit for comments on a particular Agenda item. Members of the public must direct their questions to the Chairperson of the Commission and not to other members of the Commission, the applicant, the Staff, or the audience. Upon request, this Agenda will be made available in appropriate alternative formats to persons with disabilities in compliance with the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct their request to Guy Pegan, our ADA Coordinator, at (951) 413-3120 at least 72 hours prior to the meeting. The 72-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

VICE CHAIR KORZEC – Moving along to the Public Comments. Do we have any speaker requests?

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – Not at this time, no.

VICE CHAIR KORZEC – We have none, okay.

NON-PUBLIC HEARING ITEMS

None

VICE CHAIR KORZEC – Non-Public Hearing Items. At this time, we have no items. So we're going to move onto the Public Hearing Items.

PUBLIC HEARING ITEMS

1. Case:	PEN17-0090 - Conditional Use Permit
Applicant:	Bryan Alberre
Owner:	Ironwood Community Plaza, LLC.
Representative:	Bryan Alberre
Location:	23940 Ironwood Avenue, Suite E
Case Planner:	Gabriel Diaz
Council District:	2
Proposal:	The applicant is seeking approval of a Conditional Use Permit to operate a new smoke shop.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2018-10 and thereby:

1. **CERTIFY** that PEN17-0090, a Conditional Use Permit for a new smoke shop qualifies for a categorical exemption in accordance with CEQA Guidelines, Section 15332, for In-fill Development; and

2. **APPROVE** PEN17-0090, a Conditional Use Permit for a new smoke shop business, subject to the Conditions of Approval included as Exhibit A.

VICE CHAIR KORZEC – Questions or comments from the public on a public hearing matter are limited to 3 minutes per individual and must pertain to the subject under consideration. Those wishing to speak on any public hearing item should complete and submit a green speaker slip to the Planning Commission Clerk. Once again, those are on the back table. Public Hearing Item No. 1 is a proposed Conditional Use Permit to operate a new smoke shop. Recommendation: Staff recommends that the Planning Commission approve Resolution No. 2018-10, and now we will have a Staff Report by Gabriel Diaz.

ASSOCIATE PLANNER GABRIEL DIAZ – Thank you Vice Chair and Commissioners. We have PEN17-0090, a Conditional Use Permit for a new smoke shop use within an existing commercial center. The proposed square footage is 1605 square feet at the existing Ironwood Plaza Shopping Center located at 23940 Ironwood Avenue…..

VICE CHAIR KORZEC – Mr. Diaz, we're having trouble hearing you. Is your microphone on?

ASSOCIATE PLANNER GABRIEL DIAZ – Yeah, can you hear me?

VICE CHAIR KORZEC – That's better.

ASSOCIATE PLANNER GABRIEL DIAZ – Okay, the project is located at 23490 Ironwood Avenue, Suite E, at the northwest corner of Heacock Street and Ironwood Avenue. The applicant is Bryan Alberre. It's located within Council District 2. I do have some exhibits. The current zoning for the proposed use for the existing shopping center is Neighborhood Commercial, and surrounding the proposed…there we go. There's an aerial photo of the existing shopping center. The existing uses around the proposed smoke shop, is to the north and west, is an existing mobile home park, and it's zoned R15, Multifamily Residential. To the east across Heacock Street is an Edison Sub Station and single-family homes zoned R5, Single-family Residential. To the south, is vacant land existing family homes zoned R5 and a Rite Aid Pharmacy zoned Neighborhood Commercial. Let me move onto the proposed smoke shop. The proposed smoke shop use requires a Conditional Use Application because their proposed use is located within 300 feet of a residential zone. The smoke shop proposes to sell cigarettes, cigars, and other tobacco-related products, vapes, vaping accessories, and lawfully-permitted uses or products. The proposed hours of operation would be from 9:00 a.m. to 9:00 p.m. Monday through Sunday and proposes one to three employees per shift. There will be no smoking inside the business. Here is how the inside of the business looks like. Here's the Zoning Map. To access the proposed smoke shop, you will access it from driveways on Heacock Street and Ironwood Avenue. As described in our Municipal Code, a smoke shop use requires additional parking in comparison to an existing general retail space. Therefore, the applicant submitted a parking analysis. The parking analysis evaluated current and future parking conditions. The parking analysis concluded that there is sufficient parking for future and existing uses at the proposed center. A public notice was sent to all property owners, posted onsite, and published in the local newspaper. No public comment to report. I did not receive any calls. Environmentally, the project has been reviewed in accordance with the latest edition of the California Environmental Quality Act Guidelines and Staff has determined that the project will not result in the potential of significant effect on the environment and has determined the project qualifies as a Class 32 Exemption, Section 15332 of the CEQA Guidelines as an In-Fill Development. This is a change from the notice that went out, the notice we stated that this was exempt as a Class I Categorical Exemption per CEQA Guidelines Section 15301, existing facilities. Therefore, staff recommends that the Planning Commission approve Resolution No. 2018-10 and thereby certify the proposed Conditional Use Permit qualifies for a categorical exemption in accordance with the CEQA Guidelines Section 15332 for In-Fill Development and approve Conditional Use

Permit PEN17-0090 for a new smoke shop use. This concludes Staff's presentation. Any questions? Thank you.

VICE CHAIR KORZEC – Thank you. Do we have any questions of Staff? Brian?

COMMISSIONER LOWELL – Just for clarification, when you first introduced the item, I think you misspoke the address. Could you verify what the address was?

ASSOCIATE PLANNER GABRIEL DIAZ – 23940 Ironwood Avenue, Suite E.

COMMISSIONER LOWELL – Perfect, yeah, it was transposed when you said it.

ASSOCIATE PLANNER GABRIEL DIAZ – Oh.

COMMISSIONER LOWELL – The other question I have is the parking. In the Staff Report, it says that there is a parking shortfall and the parking study was done. Could you give us a summary of that parking study and what's going to be done?

ASSOCIATE PLANNER GABRIEL DIAZ – The parking study was prepared by TJW Engineering to evaluate the onsite parking, and they had previously been the people that did the previous analysis for…there's a Bank of America ATM, so we had that basis, and we recommended that the Applicant not necessarily hire TJW but have somebody do an analysis for them because there was one already on record. It did conclude that the peak demand weekday occurred from 4:30 p.m. to 5:30 p.m. when a total of 143 parking spaces were occupied. There was also a Saturday peak demand that occurred at 1:00 p.m. and a total of 137 parking spaces were used. The overall parking capacity for the site is 254 spaces. Therefore, the site had peak occupancy of 56% and 54%. The existing parking provided is more than adequate to support re-tenanting of the vacant suites and reestablishing or establishing this proposed smoke shop. I did go out and do a site visit middle of the day middle of the week probably when a lot of people are going to the 99 Cent Store and other places, and there are a lot of parking spaces that are vacant.

COMMISSIONER LOWELL – So, per the City Standard's, there is a parking shortfall but, per reality, there's not a parking shortfall?

ASSOCIATE PLANNER GABRIEL DIAZ – Correct.

COMMISSIONER LOWELL – Thank you.

VICE CHAIR KORZEC – Anyone else? Okay, anything else Brian? Okay, would the Applicant like to speak please? Is the Applicant here?

APPLICANT BRYAN ALBERRE – Hello? Okay, my name is Bryan Alberre. Thank you for listening to our project. Gabriel, thank you for the last couple months. You've worked very hard keeping me on track as we go. We currently occupy the corner building, Ironwood Liquor, and had an opportunity about a year ago. The landlord asked us if we would entertain the idea of a smoke shop. We said sure. We realize that there was more to it than that, so we're here tonight, and got to do a Traffic Study, as well. We think we can go hand in hand with our business, and we think it is a good addition to the neighborhood, if you have any questions.

VICE CHAIR KORZEC – Any questions of the Applicant? Okay, thank you.

APPLICANT BRYAN ALBERRE – Thank you.

VICE CHAIR KORZEC – We'll now open up the Public Hearing. Do we have any speakers?

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – We do. We have Tom Behrens. I apologize for the mispronunciation and Rafael Brugueras.

VICE CHAIR KORZEC – We Tom Behrens please step up to the podium.

SPEAKER TOM BEHRENS – Good evening Planning Commission. I live across the street from this facility or the smoke shop that they want to put in, and I have some concerns with the public safety aspect of it. I've been on the phone with the police chief and my councilman and somebody else here at City Hall about the increased crime that we have in the neighborhood from…a lot of it is from the homeless people that are encamped across the street over there, and I feel that a smoke shop would probably not be real good thing because of the type of items that they sell. They are supposed to be tobacco-related items, but they are also used for other things and I mean, if you look at the crime reports and stuff, I mean almost every single day we either have an assault, a public intoxication, public disturbance, petty theft going on between Rite Aid and the liquor store and the different places there and stuff. I don't think that this is really a good business for that area in there at this time. There's just….there's just too much stuff going on and the propositions that the voters have passed have increased the amounts that make it where they can't arrest these people. They just basically cite them and let them go. They can't get them back and stuff. I just….I just don't think it's a really good idea at this time for that, and we have the liquor store there, which also sells tobacco products and stuff, so I just….I think it's a detrimental safety issue to people there with the added people coming in and stuff, and I don't know if there is going to be any security involved with this, especially afterhours in the evening and stuff. Anyway, that's all I've got to say. Thank you.

VICE CHAIR KORZEC – Next. Rafael Brugueras.

SPEAKER RAFAEL BRUGUERAS – Good evening Chair, Commissioners, Staff, Residents, and our guests, I hope tonight this will be the last approval on a smoke shop in the City of Moreno Valley until we get a number of how many we already have in the city. Okay? Now, I've seen smoke shops as we drive throughout the city, but I want you to look at this number 1600 square feet. This is as big as a living space of a house that we're going to put this product on Heacock and Ironwood. Okay, 1600 square feet. That's pretty….I went to see it, and I was amazed to look inside the window how wide and how deep it is, and we're looking at cigarettes. Okay, products related to such lawfully, I mean that's a lot of things. That could be anything, okay. The smallest one next to him was 800 square foot, and I went in there, and that's our water, and he had his crammed in there. So I'm asking myself what is going to be in this 1600 square foot facility because you know and I know that we're open for business to sell marijuana in the future. That's a fact. That's passed. That's law in this city. What's going to happen when he opens or any new shop because this is not a new shop, this is just another shop that we're going to add to the City of Moreno Valley. I'm asking you commissioners to ask the staff to give you numbers to find out how many we already have in the city because if you can't find it in this smoke shop, God knows that you can go to the other twelve and find what you're looking for. Really, really, really, I don't know if any of you have been there to see what it looks like or I don't know if any of you smoke and have been in a smoke shop and see what's inside of the smoke shop. It's just not cigarettes. There's a lot of other stuff that's in there. I hope that this is the last one that we approve if we do tonight until we get our numbers straight and find out how many we have in each district. We don't need 15 in one district and ten in another and thirty in another. We don't need that. We have enough smoke shops in this city and, if you can't find it here, then go to Riverside, go to Banning, go to Palm Springs. You can go to Hollywood and get what you want there. Believe me or not, I bet you they have it all because it's an open society there. I'm pro development. I love development. I would love him to have a business, but I just heard the last speaker and you heard the last speaker, and we all did. We need to know what's right for the City of Moreno Valley.

VICE CHAIR KORZEC – Thank you Mr. Brugueras. Would the Applicant like to address any of the public comments?

APPLICANT BRYAN ALBERRE – We currently own four other businesses in Moreno Valley. We own the Chevron in Moreno Beach and Alessandro. We own other liquor stores. This is our first smoke shop. Our intent is not to open a marijuana nor do we want to. Furthermore, it is in our lease that we are not allowed to convert the use in any way. We have an existing business there. We would like to expand our cigarette selection, and our intent is not to carry pipes or any of that. It is to carry cigarettes, cigars, vapes, hookah, and all those products. Ideally, 1300 to 1500 square feet would've been great. All they had

was 1600. That's all the landlord space they have. I'm very familiar with the shopping center. I'm there every day. That's about it.

COMMISSIONER LOWELL – You said you own an existing shop there. What shop do you own?

APPLICANT BRYAN ALBERRE – The Ironwood Liquor. The corner building.

COMMISSIONER LOWELL – And you can't take the use of the smoke shop and put it in the liquor store to kind of save space or?

APPLICANT BRYAN ALBERRE – Well, for example, we're not a speciality in cigarettes or cigars or, you know, we specialize in liquor, so our…the majority of our stores, especially Ironwood Liquor is liquor, so we're not, we're not venturing into that in that store.

COMMISSIONER LOWELL – Thank you.

VICE CHAIR KORZEC – Anyone else? Thank you Sir.

APPLICANT BRYAN ALBERRE – Thank you.

VICE CHAIR KORZEC – Okay, with that, I'll close the Public Hearing and open it up to commissioners deliberations. Anyone want to say anything or?

COMMISSIONER LOWELL – My concern was about the possibility of selling marijuana there, but the Applicant said that they have no intent of ever selling marijuana there, plus they have a lease that restricts them from doing so. If at some point in time their leased changed, would they have to come back in front of the Planning Commission or in front of the city to get a new CUP to change it to allow marijuana sales?

PLANNING OFFICIAL RICK SANDZIMIER – It looks like our attorney is reaching for the thing, but I'll start with it. The item later for you on the agenda tonight is to put forward some land use regulations. In the absence of any land use regulations, all marijuana activities are prohibited in the city. So I'd be I guess better prepared to answer the question depending on how the item on the agenda later goes forward that our city attorney may be…..

COMMISSIONER LOWELL – Well hypothetically if things go in the way that pot shops are now allowed in the city, the general consensus would be they would have to come back and apply for a new permit or a new CUP to allow that kind of sale. It's just not automatic that if they own a shop or something that they can start selling.

ASSISTANT CITY ATTORNEY PAUL EARLY – That's correct. If everything goes according to the Staff recommendations, you would not be able to operate a cannabis business in the city without regulatory permits, specific land use. It's a separate CUP for it, as well, so there's…this application would not relate in any way to that. They wouldn't be able to convert it lawfully. They would have to come in as an entirely new business and seek the cannabis permits and site use.

COMMISSIONER LOWELL – In the past, we've talked about smoke shop regulations, and we had a very long discussion about what is drug paraphernalia. It's basically when you see kind of a situation, given that they are selling some paraphernalia that could be misused, is that going to be an issue if they open up this smoke shop and they want to sell other methods of using tobacco that could be misused. Is that going to null and void the CUP?

ASSISTANT CITY ATTORNEY PAUL EARLY – Most of that is regulated by State Law and so, as far as our office is concerned, we wouldn't be enforcing those types of regulations if they are carrying certain types of pipes that we might commonly use in a different…for a different product than tobacco. That's not something that we're regulating.

PLANNING OFFICIAL RICK SANDZIMIER – If I may, just to clarify one thing, when we did bring the smoke shop discussion for you there was some modification to Title 5 of our Municipal Code that do affect the business licenses that are issued, and there are some provisions within there where we can revoke a business license based on the certain types of activity. We typically in the Community Development Department enforce the regulations in Title 9, which is the Planning and Zoning Regulations, but I do want to make sure you understand there is a separate Title, Title 5, of our code that does have some provisions that speak to what you're talking about. So given the two speakers tonight that spoke out against the shop, if they see something that is not copacetic and is kind of shady, how would they contact the city or who would they contact to file the complaint? Would it be the police department? Would it be the City?

PLANNING OFFICIAL RICK SANDZIMIER – They could contact the Code Enforcement Group, which is out of the Community Development Department, so they would contact the department we are in. if they wanted to contact the police department, they could do that, as well, and those sorts of complaints can be coordinated or carried over to the Code Enforcement Department depending on what the nature of the complaint is. We would typically send somebody out to investigate and, depending on what they find, there could be a notice of violation, a notice of correction of some sort, or they could be a citation depending what the activity is that is found on the site would be so.

COMMISSIONER LOWELL – Thank you.

VICE CHAIR KORZEC – Do we know where the closest smoke shop is to this, how far away?

PLANNING OFFICIAL RICK SANDZIMIER – I don't have the information this evening.

VICE CHAIR KORZEC – No?

ASSOCIATE PLANNER GABRIEL DIAZ – I drove around the area. There is no commercial center that close this. This kind of seems isolated north of Ironwood. Sorry, I didn't see...our Code I think restricts another smoke shop within 600 feet, and there is no other smoke shop within 600 feet.

VICE CHAIR KORZEC – Yeah, I don't think so. That's my neighborhood. I go to that shopping center a lot. I'm one of those 4:30 to 5:30 people that have no trouble parking and go to the 99 Cent Store, so but I didn't think there was anything else in the neighborhood, so it's not that there would be a huge amount in one area. Okay, any other questions? Mr. Sims.

COMMISSIONER SIMS – So on the issue of the security, I don't know if a smoke shop attracts nefarious-type people more than the liquor store or the supermarket or the 99 Cent Store, so I'm not so sure how big of a deal that is, but at the end of the day I would assume, and this may be more of a question to the Applicant due to the familiarity with the space that they are leasing out from that shopping center, is there a 24/7 security provided by the owner of the shopping center? I don't know that. No there is not, okay. And then I guess, as far as….anyhow that would be nice if they had security there but anyhow, at the end of the day, the other issue that was brought up was the how many smoke shops are….I guess at the end of the day is this seems more of a niche business where it's more community-based catering to a certain demographic and certain geographics, as well, and personally from my standpoint I would allow it to be market driven. If there's a saturation of smoke shops, the lesser use smoke shops will go out of business, so I don't know if that's the Planning Commissions purview to really regulate that type of a situation, so anyhow that's my comments.

VICE CHAIR KORZEC – Anyone else? If not, do we have a motion?

COMMISSIONER LOWELL – Yeah, I'll make a motion. I motion that we approve Resolution No. 2018-10 and thereby certify that PEN17-0090, Conditional Use Permit for a new smoke shop qualifies for categorical exemption in accordance with CEQA Guidelines Section 15332 for In-Fill Development and also approve PEN17-0090, a Conditional Use Permit for a new smoke shop subject to the Conditions of Approval included as Exhibit A.

COMMISSIONER BAKER – I'll second that.

Opposed – 0

Motion carries 4 – 0

VICE CHAIR KORZEC – Okay. Any other comments on that? Okay, moving along, we're going to move to Item No. 2 on the agenda that we moved up. It was formerly Item No. 3. It's proposed Tentative Tract Map 37369 subdividing 1.6 acres into seven lots, including a Variance for reduced setbacks and an administrative Plot Plan for the addition of a garage, and the Staff recommends that we approve Resolution No. 2018-11. The Staff Report will be given by Julia Descoteaux.

2. Case:	PEN17-0128 – Tentative Tract Map PEN17-0129 – Variance PEN17-0130 – Administrative Plot Plan
Applicant:	Ed Romero
Owner:	Silvia Romero
Representative:	Steven Ritchey
Location:	24645 Eucalyptus Avenue (428-040-017, 018)
Case Planner:	Julia Descoteaux
Council District:	1
Proposal:	Proposed Tentative Tract Map 37369 subdividing 1.6 acres into seven lots, increasing a Variance for reduced setbacks and an administrative Plot Plan for the addition of a garage.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2018-11 and 2018-12, and thereby:

1. **CERTIFY** that this item is exempt from the provisions of the California Environmental Quality Act (CEQA), as a Class 32 Categorical Exemption, CEQA Guidelines, Section 15332 (In-fill Development); and

2. **APPROVE** PEN17-0129, (Variance); and

3. **APPROVE** Tentative Parcel Map 37369, PEN17-0128, subject to the Conditions of Approval attached as Exhibit A.

ASSOCIATE PLANNER JULIA DESCOTEAUX – Good evening Vice Chair Korzec and members of the Planning Commission. I'm Julia Descoteaux, associate planner on this project. The item before you is PEN17-0128, a Tentative Tract Map 37369; PEN17-0129, a Variance; and PEN17-0130, which is actually an administrative approval. The Applicant is seeking approval for Tentative Tract Map 37369 to subdivide 1.6 acres, which includes 2 parcels, into seven single-family residential lots ranging from 9073 square feet to 11,178 square feet and a Variance for the reduced setbacks and a nonconforming garage. The site is currently developed with seven residential units constructed prior to the City's Municipal Code and the Specific Plan 204 under Riverside County regulations. All of the proposed lots exceed the 4080 square foot residential lot size required in the Specific Plan 204. Several of the proposed lot will require an approval for a Variance, as they do not comply with the residential setback requirements of the Specific Plan 204. The development standards require a five foot side setback where both of the units on proposed lots three and four have less than the required five feet. Currently, they have about three-and-a-half feet, which is one-and-a-half feet short of what they are required. Lot seven will require a Variance for the side street setback on Eucalyptus where the existing dwelling is about two-and-a-half feet short of the required 15 feet on that side of the street. Where the development standards in the Specific Plan are silent, the plan defaults to the City's Municipal Code, and the City's Municipal Code requires that all single-family residential units are constructed to have a two-car garage. On lot six, there is currently a one-car garage, which meets the requirements in the current zoning; however, due to the existing layout of the site, a remodel or a development of a new garage is not feasible for this site. Proposed lot one does not have a garage currently but, at this location, there is ample room to construct a garage, so we have an Administrative Plot Plan that we'll be approving. Should you approve this map tonight, we'll approve the Administrative Approval for the garage to be constructed on that lot. Except where I have just discussed, all the other requirements for single-family development within the Specific Plan 204 have been met. The site will take access from a private driveway on Eucalyptus Avenue. The map will be required to provide reciprocal access to the parcel fronting on the northwest corner that is not a part of this project. All parking will be onsite in the individual driveways and all the resident owners will maintain the private driveway. The utility pole in the driveway is required to be relocated or undergrounded, and the Applicant will work with Southern California Edison to accomplish this. All of the surrounding areas within the Specific Plan 204 with the same residential zoning, that allows both single-family and multifamily units. The project is exempt from the California Environmental Quality Act as a Class 32 Categorical Exemption for In-Fill, Section 15332. The project was posted on the site, in the newspaper, and sent to all property owners within 300 feet. To date, I have received two phone calls regarding the project. Both of those callers just wanted to know what the project

was and didn't give me any feedback either way of how they felt about the project. They just wanted information. Staff recommends that the Planning Commission approve Resolution 2018-11 and certify that the project is exempt from the California Environmental Quality Act as a Class 32 Categorical Exemption and approve PEN17-0128 for the Tentative Tract Map, PEN17-0129 for the Variance, and this concludes Staff's presentation. The Applicant and myself are here to answer any questions for you. Thank you.

VICE CHAIR KORZEC – Thank you. Do we have questions of Staff? Brian.

COMMISSIONER LOWELL – Could you give us a little background as to what's going on here. We have a series of houses that are being subdivided onto their own lot. So currently there are seven houses or seven dwelling units sitting on one lot?

ASSOCIATE PLANNER JULIA DESCOTEAUX – Currently, there are two lots, let me go back. Well, actually, that's a good picture. There's two lots here. It's divided about in the middle, so there's four lots on the right side of the screen and then there's the three homes that are on the left side, the very first home adjacent to Eucalyptus is not a part of this project. In the past, in this area, especially during the county days, there were a lot of areas like this where they built multiple houses on each lot and so the Applicant at this time owns both of the parcels, so they would like to subdivide so that they could sell the lot, the houses individually. Right now, if they sell the one lot on the right, all four houses go with it.

COMMISSIONER LOWELL – So it's basically a nonconforming situation right now?

ASSOCIATE PLANNER JULIA DESCOTEAUX – It's not nonconforming in the Specific Plan 204 because you can have multifamily on one lot.

COMMISSIONER LOWELL – Gotcha.

ASSOCIATE PLANNER JULIA DESCOTEAUX – So it is allowed in the zone currently and would have been allowed in the county scope too since….

COMMISSIONER LOWELL – And then a point of clarification, in the Staff Report, it says there are seven single-family residences but on the Tentative Tract Map #22, it says the existing site contains multifamily detached dwellings. Which one is correct?

ASSOCIATE PLANNER JULIA DESCOTEAUX – Sorry, well, they are single-family, but it is in a multifamily design right now.

COMMISSIONER LOWELL – I don't know what that means.

ASSOCIATE PLANNER JULIA DESCOTEAUX – They are detached units, so they are not….

COMMISSIONER LOWELL – But the individual dwelling units, they are for single family. They are not multifamily, okay, so the Tentative Map is not correct on that Specific Plan. Okay, thank you.

VICE CHAIR KORZEC – Commissioner Sims.

COMMISSIONER SIMS – Are all of the individual houses currently with their own water and sewer connection and water meter?

ASSOCIATE PLANNER JULIA DESCOTEAUX – Yes.

COMMISSIONER SIMS – And electrical and all that?

ASSOCIATE PLANNER JULIA DESCOTEAUX – Yes, they have the power poles go along the back.

COMMISSIONER SIMS – And the only other questions would be for fire. With the substandard side yard, if there is an event that requires access to the back and there is….I mean, three-and-a-half feet, I don't know what it takes to maneuver a man or a person and a hose and whatever has to happen, but is that sufficient with a wall, a fence?

ASSOCIATE PLANNER JULIA DESCOTEAUX – I will defer to the fire marshal.

FIRE MARSHAL ADRIA REINERTSON – Adria Reinertson, fire marshal. Because these are existing dwellings, there is no way for us to retroactively enforce provisions. If they were to build anything additional on this site, they would have to comply with our regulations and code today.

COMMISSIONER SIMS – Well that still didn't answer. I mean, from an actual…I mean, thank you for the answer, but just to elaborate physically is it possible to get back there between the site yard…image if there is a block wall, there's a block wall…I don't know if there's block walls or chain-link fences or whatnot but, if there's a fence between the two yards, the side yard so that you have three-and-a-half on one side, three-and-a-half or whatever it is on the other, can a person with a hose or whatever that needs to get through there with equipment get through to the back of the structure?

FIRE MARSHAL ADRIA REINERTSON – We certainly could. Today's regulations actually allow for three foot setbacks because of the fire sprinkler regulations. If this had been under our regulations to begin with, it would've

required at least the five foot, so it is possible, but it does present some challenges.

COMMISSIONER LOWELL – We approved the Tract Map over by Walmart off of Eucalyptus over by Super Target at Nason and Moreno Beach, and they are single-family detached, and they have three foot side-yard setbacks at least.

COMMISSIONER SIMS – You're right. I can't remember but, if you say so, I believe you.

COMMISSIONER LOWELL – But they have fire sprinklers, which is a big difference.

COMMISSIONER SIMS – Well, yeah, I mean it's not…the concern is it's an existing condition. I just…now we're going to create legal lots, so anyhow.

VICE CHAIR KORZEC – Anyone else? Would the Applicant like to come up and speak? Would Ed Romero be here?

APPLICANT STEVE RICHEY – Good evening Planning Commissioners, my name is Steve Richey. I'm the representative for Ed Romero. He is here, as well. I'm with Land Engineering Consultants, so I did the Tentative Map for them. We've reviewed the conditions. We're in agreement with what's being asked for on this project. I'm pretty much here to answer any questions, if you had any additional questions related to some of the setback things, maybe I could some of those but maybe just a clarification on the setbacks, I think the three-and-a-half foot setbacks are along the Southerly line, which is not a proposed lot line. It's an existing lot line, so regardless of whether…there's no new lot lines that are being proposed that would have less than a five-foot setback. That's just a condition that maybe back when these homes were built. I don't know that they had the best survey information on how to set fences and property lines at that time. I think these homes were all built in the 50s. I think 1958 is what I've come up with, so they've been around for a long time. The other Variance off of Eucalyptus is only due to the additional dedication that is being requested, so it does leave us slightly short out there, but that is only because of the dedication that we're a little bit less. Otherwise, the existing right-of-way would've given us the adequate setback. The garage that was requested is actually a site where there was an existing garage that burned down several years ago, so it's really just a replacement of a garage that was there (AUDIO CUTS OUT) on the site. Any other questions, I'm here to answer.

VICE CHAIR KORZEC – Any questions gentleman? Okay, thank you very much. I'll now open up the Public Hearing on this, and it looks like we have one speaker.

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – We do. We have Rafael Brugueras.

VICE CHAIR KORZEC – Mr. Brugueras please.

SPEAKER RAFAEL BRUGUERAS – Good evening once again Chair, Commissioners, Residents, and our guests. I went to this site, and it took me a while to find the address because they are foreign numbers and four on this side, three on this side, and then I found the address in the middle of the lot, and I looked behind it, and I'm thinking one-and-a-half, 1.6 acres, so it's the whole thing, and I'm glad for the question that Mr. Lowell asked because I figured it out what he wants to do with the lot. Okay, and as he divides them in the future, they are pretty good-sized lots between 9000 and 11,000 square feet. The question that I didn't hear get asked, the homes that are there now, are they homeowners or these are renters on these lots because, when he divides the lot, he's going to have an opportunity to sell them. Is he going to sell them to the homeowners that are there or to the renters or to future buyers, and are they going to tar the entrance because there's only one way in and one way out? Okay, that's one thing also there, so I'm happy for those that are finally getting their own lots. They can do whatever they like. They are going to put their little fences and take care of their own little property. That's a beautiful thing there and for those that want to do upgrades, you know, that's a good thing too. However you decide to do tonight just make sure, as we were mentioning, that the fire trucks can get in and the fire trucks can get out because at the end of the lot there's a fence then there's another property. I thought it was going to be that, but it's not, so that was only my concern when I got there. Thank you.

VICE CHAIR KORZEC – Thank you, Sir. Would the Applicant like to address any of those issues? You don't have to if you don't want to. Okay, that's fine. Alright, I'm going to close the Public Hearing and begin our deliberations. Commissioner Sims.

COMMISSIONER SIMS – This seems to be a similar application to what we did that was done over on Alessandro out closer between Moreno Beach and Redlands Boulevard where there was a cluster of homes, preexisting homes and wanted to subdivide the lot to create legal lots, so it looks like it is appropriately conditioned to get it done, and I would imagine that the situation, if Mr. Romero owns all the houses and he's renting those out, if he goes to sell them that the tenants would have an opportunity to become a homeowner if they so choose to be so, or they will have some kind of a rental termination agreement or a termination clause in their agreement that would be amenable to the owner and the tenant so.

COMMISSIONER LOWELL – I have a question. On the variances, on the side-yard variances on lots three and lot four, it looks like the existing fence is further away from the house than the property line, which leaves about a foot gap

between the property line and the fence. Is that something that is going to be rectified on the conditions saying they have to pull the fence back to the property line or has the fence been there long enough that they actually have like a prescriptive right to that portion of land?

SENIOR PLANNER CHRIS ORMSBY – We could take a look at that through the plan check process. If it's up by a foot, I don't know how…when we get to the actual standpoint of plan checks on it, we can look at that and…..

COMMISSIONER LOWELL – I've forgotten what the rules are, but if the fence has been there for 20, 30 years, which it seems like it has been, then that's the assumed property and, if that is the case, then you wouldn't have 3.6 feet to the property line, you'd have more like 4.6 or even closer to five feet, so the variance might not necessarily be needed.

SENIOR PLANNER CHRIS ORMSBY – Okay, yeah, if it's an open fence, there's some flexibility. That could possibly be in the setback, so that would probably stay where it is.

COMMISSIONER LOWELL – Okay.

VICE CHAIR KORZEC – Commissioner Baker.

COMMISSIONER BAKER – I think this gives us an opportunity to kind of square this away with the property owner there. It's too bad it's gone on like what 50 years or what it has been so, I would move that we move forward with it.

VICE CHAIR KORZEC – Okay, well are there any other comments first?

COMMISSIONER BAKER – I can make a motion if you'd like.

VICE CHAIR KORZEC – Okay, if there's no other comments, I will welcome a motion.

COMMISSIONER BAKER – I'll do that. I move that we, the Planning Commission, hereby approve Resolution 2018-12 and thereby certify that this item is exempt from the provision of the California Environmental Quality Act as a Class 32 Categorical Exemption from CEQA Guidelines Section 15332 In-Fill Development and also approve PEN17-0129 Variance.

ASSISTANT CITY ATTORNEY PAUL EARLY – Excuse me, mine shows it's Resolution 2018-11. Does that match up with yours?

COMMISSIONER BAKER – Mine's 12.

COMMISSIONER LOWELL – There's two of them on there, 11 and 12.

COMMISSIONER BAKER – Oh, there's two?

VICE CHAIR KORZEC – Yeah, there's one below it.

COMMISSIONER BAKER – Okay, sorry about that.

ASSISTANT CITY ATTORNEY PAUL EARLY – Yeah, so does it include both resolutions?

COMMISSIONER BAKER – Let me redo that again so we got it on the record right. Okay recommend that they…the Planning Commission approve Resolution 2018-11 and also 2018-12 and thereby certify that this item is exempt from the provisions of the California Environmental Quality Act as a Class 32 Categorical Exemption CEQA Guidelines Section 15332 as an In-Fill Development and also approve PEN17-0129 Variance and also approve Tentative Parcel Map 37369, PEN17-0128 subject to Conditions of Approval and attachment of Exhibit A.

COMMISSIONER LOWELL – I'll second.

VICE CHAIR KORZEC – And the motion is approved, four yeses.

Opposed – 0

Motion carries 4 – 0

VICE CHAIR KORZEC – Okay, moving along. The next will be the commercial cannabis land use regulations. I noticed there's only one speaker slip filled in on this?

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – Correct.

VICE CHAIR KORZEC – I see there's a lot of people out there, so if any of you want to speak, you need to go over to the side table, fill in a slip, and bring it to the clerk. Okay, I just thought we'd anticipate that.

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – Thank you.

VICE CHAIR KORZEC – Okay, on this one, the staff recommends that the Planning Commission approve Resolution 2018-09, and the Staff Report on this will be by Mark Gross.

3. Case: PEN17-0157

Applicant:	City of Moreno Valley
Owner:	City of Moreno Valley
Representative:	N/A
Location:	City-wide
Case Planner:	Mark Gross
Council District:	City-wide
Proposal:	Commercial Cannabis Land Use Regulations

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2018-00, and thereby recommend that the City Council:

1. **FIND** that PEN17-0157 (Municipal Code Amendment for Commercial Cannabis Land Use Regulations) qualifies for an exception under the California Environmental Quality Act (CEQA) per provisions at this point in time forth in Senate Bill 94 "medicinal and Adult Use Cannabis Regulation and Safety Act exempting adoption of an ordinance, rule or regulation by a local jurisdiction that will require subsequent discretionary permits, licenses or other authorization; and

2. **APPROVE** the proposed amendments to Title 9 of the City Municipal Code (PEN17-0157) setting forth land use zoning and development regulations for commercial cannabis land use activities, included as Exhibit A and Exhibit B.

SENIOR PLANNER MARK GROSS – Well good evening Vice-Chair Korzec and Members of the Planning Commission. Tonight we're looking at a Draft Land Use Ordinance that is being presented to the Planning Commission for regulation of commercial cannabis activities in Moreno Valley and that includes dispensaries, testing, cultivation, manufacturing, microbusinesses, and distribution centers. We have definitions for all of those uses in the proposed Ordinance that was part of your Staff Report as a draft. Now, a little bit of background that I want to provide on the actual subject; the City Council directed Staff to review and provide input on how the City can regulate and control cannabis business operations and legalization of cannabis products that are included in proposition 64, which is the State proposition that allowed for cannabis uses. So what we had a chance to do is there was a couple of areas that the City needed to pull together if we were going to move forward with cannabis operations or allowing for cannabis operations and one of those was a

Regulatory Ordinance, the other was the Land Use Ordinance, which of course is before you this evening. Now the Regulatory Ordinance was actually passed late last year and the State, just to give you a little more background, I'm sure a lot of you know about this already, but the State, as of January 1, 2018, is issuing commercial cannabis licenses, and they provide for these licenses only if the local jurisdiction permits are secured first. So any licenses or conditional use permits would have to be secured. Now the ordinance includes five different land use districts and 26 conditionally permitted cannabis uses city-wide, all required in enclosed permanent structures, and I want to run through exactly what we are looking at as far as these 26 uses that we're looking at as far as the amounts. We have six different cannabis operations that we're looking at and, starting off with dispensaries, we're looking at 10 of those that may be allowed. I want to also give you information on where they would be allowed as far as the zoning districts and, for dispensaries, that would be community commercial, neighborhood commercial, and business-park mixed use zones. For testing, there would be a maximum of two that may be allowed within the business park, business-park mixed use, and the business park and the neighborhood commercial. Excuse me, let's go back and do a redo on that. Testing allows for a maximum of two, and that's in the business park, business-park mixed use and light industrial zones is what I wanted to say. For cultivation and manufacturing, there would be five each that would be allowed; five cultivation and five manufacturing, and that may be allowed within the business park, the business-park mixed use, and the light industrial zoning districts. For microbusinesses, which is a mix of dispensaries, cultivation, and possibly manufacturing, we're looking at a maximum of two that may be allowed within the business-park mixed use zones. Finally, for distribution centers, a maximum of two may be allowed in any of the five zoning districts that would be allowing commercial cannabis activities, and so we're looking at the five zoning districts, and I'll mention them here just so you're aware of these five districts. We're talking about neighborhood commercial, community commercial, business park, business-park mixed use, and light industrial. Those are the five areas that are open for these different uses as we've indicated. So, I want to talk a little bit about the ordinance, and then we're going to get into the map that is provided here. In fact, we have a number of maps that we've included, so we will be getting into those here in just one second, but what I want to talk about is just the ordinance itself. The ordinance does provide for 14 definitions, and these are all consistent with the Title 5, Regulatory Ordinance. It also provides for specific zoning districts as we've mentioned here. It provides for Conditional Use Permit requirements for all 26 proposed uses. It provides for general development standards. It provides for land use buffers, which we're going to get into in just a minute or two, and it also provides for grounds for revocation of cannabis businesses. Again, cannabis uses are required under a Conditional Use Permit, it would coming before this body, before the Planning Commission, and the Planning Commission would have a chance to review those permits and approve those permits. And, if there are violations of those permits, whether they be from just Conditions of Approval or operations, , there are revocation proceedings that are followed in

the ordinance itself. So at this particular time I want to talk a little bit more about where some of the cannabis operations would be allowed, and I'm going to start with the maps that you see. They'll be about a series of five maps, and they go from very general to very specific, and so here we start off with a very specific map. This is the Zoning Map of the City, so you see all of the colors there. It includes zoning for every single property within the city, so that's the first one that we wanted to provide. Now this next map is just providing for possible opportunities or possible land that would be included in or land, I should say, that would be included in the community commercial and the neighbor commercial zones in the city. This does not include any specific plans, and we'll talk a little bit more about specific plans in a moment because we've added a little bit more information to some of these maps. So the maps that were originally in your packet just included areas that were not including specific plans but, as you'll see on the last map, we'll get into the specific plans and how they work. So we talked about community and neighborhood commercial areas, and these are potential areas that again could be for dispensary-type uses. So this next map that we're showing is actually showing land within the business park, the business-park mixed use, and the light industrial zones and, again, not including specific plans here. In these particular areas, these could be possibilities for, testing, manufacturing, and cultivation. This next map actually is providing…it does show all of the different zones that is allowing for cannabis activities, and what this does is it provides for potential acres and areas where all 26 commercial cannabis businesses could locate, , but this does not include any of the information that we have in our ordinance. Now the ordinance is going to include buffers and other requirements, and so this is just showing you the potential areas that we have. Now, for this next map, this is actually getting into the specifics. Here we actually include the 600 foot buffer that is a requirement of the ordinance, and that's consistent with State Regulations and, what we're talking about, and you can see the little bubbles all along and all around these sensitive land uses and, again, this is consistent with State Regulations. There is a buffer regulation of 600 feet from cannabis uses, and, and we're talking about items such as public and private schools, daycare centers, youth centers, arcades, and these…all of these items that you see up here were all queried through the Business License Division Records. Now when the 600 foot buffer is factored in, you have approximately 632 areas eligible for dispensary uses, 663 acres that is eligible for cultivation, manufacturing and testing, 44 acres possibly for microbusinesses, and 1251 acres for distribution centers The reason for the large amount for the distribution centers is the fact that, again, distribution centers would be allowed in every one of the five zoning districts that are allowing for cannabis operations. So what this map also includes is specific plan areas, and I want to talk a little bit about the specific plan areas because we have additional cannabis sites and acreage that was…that is provided….that could be provided and is provided in specific plans. Some of these areas include like zoning, where the commercial cannabis use is allowed in our ordinance. …All of these specific plans that we include on this map are actually deferring to Municipal Code standards. We have specific plans in our city that either defer to

the standards, or they just defer to the Municipal Code where the permitted uses is based on the Municipal Code standards. If the ordinance is approved, all of these uses or areas could actually defer to the Municipal Code and to what is allowed under cannabis operations. There are other specific plans that we did not include here that have their own permitted use tables and their own standards and those we didn't include because they would actually have to come in for a specific plan amendment to allow for cannabis land uses. What this does and what this shows, is when you factor in all the specific plan areas that are possible, the ones that are actually tiering over to the Municipal Code, you're looking at approximately another 200 acres that is possible for primarily commercial dispensary operations. So that's just a little bit of information on the maps themselves, and I want to talk just a little bit about some of the other information, such as the environmental document for this project. The Cannabis Ordinance is exempt from the California Environmental Quality Act, and that's in conjunction with State Senate Bill 94. That's the medicinal and adult use cannabis regulation and safety act that exempts... the adoption of an ordinance by a local jurisdiction that is requires discretionary permits or licenses. Now the ordinance is requiring a City License and a Conditional Use Permit in this case, so that would allow for the appropriate environmental review and determination on a case by case basis. So as this body has a chance to review conditional use permits and the Staff works on the review of the environmental document, they would be able to determine through CEQA what the appropriate environmental document would be. Now there was notice on this particular item. It was published in the Press Enterprise Newspaper, and that was back on February 11, 2018. Before I get into a few other items, I did want to say that I did receive six calls actually in total on the item and most of the callers were determining if their property….they were looking at certain property to see if certain cannabis operations were allowed by this particular ordinance if this ordinance were to come into play, and it gets approved. So they were really interested in locations of where cannabis operations possibly could go. So we talked a little bit about the notice,, I do want to end with the fact that the Cannabis Ordinance is now requiring consideration tonight and recommendation by the Planning Commission and that would be followed by City Council deliberation and action on all required Municipal Code changes, and we're looking at possibly getting this on, at least our goal possibly would be getting it up for the middle of March to a City Council Meetingpossibly on March 20, 2018, is what we're looking at, but that will be determined based on what we go through this evening. So that concludes Staff's Report, and we're able to answer any questions that you may have. Thank you very much.

PLANNING OFFICIAL RICK SANDZIMIER – Madam Chairman, if I may just take a second….Mark can I have the clicker? Mark did an excellent job going through this in some detail but because it's an important issue that you guys are considering tonight and the public is also focusing on some of these maps to possibly make some decisions, I just want to go back real quickly over these and just kind of show a little bit of a focus by the uses and to also indicate that some

of these maps were not included in your Staff Report that was published last week. Some of these maps are newer and were just produced for this meeting this evening. So the first one I want to start with all of the red areas here, as Mark has indicated, are the community commercial zones and neighborhood commercial zones in which dispensaries and distribution facilities would be allowed so, if anybody is interested in which specific uses could occur in here, it's just dispensaries and just distribution facilities. While there's a lot of sites being shown up there, the number of recommended dispensaries is limited to 10, so only 10 dispensaries could occur in all those red areas. Some of them could be more concentrated. Some of them may be spread out. We don't know where they are going to come in and, as far as distribution facilities, we're recommending two distribution facilities. Some were in all of those red areas. The light blue areas represent the business park, business-park mixed use, and light industrial areas and, as Mark indicated, these are the areas in which cultivation, manufacturing, testing laboratories, and distribution facilities can be located. The one thing I'd like to point out is the microbusinesses, which we're only recommending two, would only be limited to those areas that are designated as business-park mixed use, which is only a small portion of this, and I apologize that I don't have a map that highlights just the business-park mixed use, but we could drilldown on that if anybody in the public wanted to call and ask specifics about that. The number of manufacturing locations would be five. Cultivation sites would be five. Testing laboratories is two. Microbusinesses is two and, again, distribution is two city wide, and those two could be either in the blue area here or in the red areas that I showed before. This area is showing collectively all of those blue and red areas and, as Mark indicated, we overlaid the specific plans, and this is the new information that, as we drill down and we looked at the specific plan provisions, those…only those specific plans that have references to neighborhood commercial or community commercial were the ones that we wanted to make sure were clear to you and were clear to the public, and we would be making clear to the City Council who will be the ultimate decision-making body on this. We wanted to show this collectively. The other thing that I wanted to show is, if you look at this map, here there is an acreage table up in the top right corner, and so it gives you a sense of how much acreage is available in each of those zoning districts and then, once we apply the next map, which is the restricted areas, the 600 foot buffer, if you toggle between that matrix on this page and the matrix on the next page you'll see that in each of the categories, the amount of acreage goes down considerably. In some, it's a little more negligible, but in all there is a reduction in the amount of sites that would be available once you apply the buffers. The other thing that you can see, if you toggle between this map here and this map here, is the amount of color, so the amount of color what shows up on this map you can see disappears somewhat, I know it's a little bit difficult because you see a lot of pink up there, but the brighter colors disappear and gives you a visual representation of where the areas start to fall out because of those restrictions. So just wanted to make sure that people understood what the maps were trying to convey, and I think Mark did an excellent job in the presentation. The other stuff that's in your Staff Report that's

available for the public to look at is the resolution, which documents all the reasons why we're doing this and then it goes into specific modifications that we'll be adding into our Municipal Code and, if you have any questions on any of those specifics, we're very happy to answer those tonight. The last thing I'll say is this has been a yeoman's effort to try and put all this stuff together in a short period of time. In addition to Mark, the Staff behind me, our city attorney's office, and others have been very active in making sure this is all pulled together, so we're here this evening to answer any questions. Thank you very much.

VICE CHAIR KORZEC – Any questions of Staff?

COMMISSIONER SIMS – I have some.

VICE CHAIR KORZEC – Go ahead.

COMMISSIONER SIMS – So thank you, Mark. You always seem to get the tough, the tough issues to present so, so I don't really understand some of the nuances between distribution and microbusiness and dispensary because I don't…but I guess I kind of get the sense of what those are, so I'm assuming that the dispensaries are the place where people can just come in and by product off the street?

PLANNING OFFICIAL RICK SANDZIMIER – That would be correct.

COMMISSIONER SIMS – So and then like a microbusiness would be like going to Hangar 24, and you can go and see how they make it and how they grow it, and you can just make a day of it. Go there. You couldn't do sampling, though.

SENIOR PLANNER MARK GROSS – Correct. There would be no sampling. In fact, in any of the uses, there wouldn't be anything associated with that.

COMMISSIONER SIMS – But you could see the whole kind of food chain of how this stuff is grown….

SENIOR PLANNER MARK GROSS – Right.

COMMISSIONER SIMS – Packaged, sold, that kind of thing.

SENIOR PLANNER MARK GROSS – Correct.

COMMISSIONER SIMS – The distribution I guess is…I have no idea of what…it seems like when you say distribution I think of logistics so you'd see truckloads of this coming in in boxes or what is this and then it goes out to the dispensaries or how is that…what is that kind of situation?

SENIOR PLANNER MARK GROSS – Well, as far as the distribution goes, it's really providing for...it could be providing for the procurement or transportation of cannabis or cannabis products between entities that really are licensed by the State of California, so they would all be licensed.

COMMISSIONER SIMS – And I, I get the hierarchy of how you take the 26 potential land, potential CUPs that would have to go in, and there's more of the cash-n-carry walk in, you get product, and walk out type thing. So that makes sense. How did the 26 come about? How was that picked as a number?

PLANNING OFFICIAL RICK SANDZIMIER – Let me try and address that. First before I address the number, I want to provide one clarification. In your description in the types of uses, you described the microbusinesses as a place where people could go and see how the product is grown and then packaged, and then manufactured. I'm not sure if you meant that literally or not, but I wanted to point out that there are actually restrictions based on the State Regulations and in our Municipal Code that would restrict the public from getting into these facilities, so our regulations are not intended to make these facilities a place where the public would go in and try and see or learn. They are actually intended to be very secure sites just to make sure we minimize that….

COMMISSIONER SIMS – So then help me understand what the difference is between a dispensary and a microbusiness.

PLANNING OFFICIAL RICK SANDZIMIER – The microbusiness is a place where there is actual cultivation going on. There is manufacturing, and there is some sort of a distribution or a dispensary, but you have to have three actual cannabis activities going on in the location, except for testing. Testing has to be done completely remote from any of those types of activities, so you would go into those places, but not with the intent to roam around and see how things are being done, so that's the clarification I'm trying to make, but you could see in a microbusiness all of those things being done. The other thing with the microbusiness is the size of the facility is limited based on how much cultivation is done is limited in particular. With regard to the 26 locations, we have tried to identify what a city of 52 square miles with population of 209,000/210,000 people would need. We're also looking at the amount of available land that is out there for this and then also what the market demands are. A lot of this will be dictated just based on market demands. So even if we put 26 out there and only five come in, we'll know that our number was maybe too high and, if we put out 26 and 52 come in and we know we're only half way there, that'll be an indicator. So we are testing the market rather than oversaturating it and saying that you can put one of these types of activities anywhere in the city. We started with a place to kind of control the number. We've based it on research we've done with other jurisdictions. There are some jurisdictions that are not allowing any types of dispensaries. Possibly there are some that are focusing on cultivation. There are some that have opened up the doors similar to us and are allowing all these,

but we did a lot of research, and so we tried to compare ourselves to what's going on in the industry and knowing that, most likely, as a new industry we're going to have to make some adjustments somewhere down the road but now this is the starting point. We started at one point with 22 and then the idea of distribution we thought that we'd miss that because distribution you're asking is a function that is needed to move product from one of the uses to the other and somebody may be interested in setting up a place where they are kind of the middle man, so we introduced two more to the 22 that we had and then the idea of microbusiness, which is a new entity in itself. We introduced that and added two of those, and that's how we got from 22 to 26, but our number has not fluctuated any more than the 22 to 26 range.

COMMISSIONER SIMS – Okay, thanks. So going on with the….I appreciate the clarification on that. The other….when I read through the….when I was looking through the resolution, so I'm not going to read all the whereas', but I'm going to read the pertinent ones that caught my eye. So I read whereas in November of 2016 Proposition 64 was approved by voters in California. So that was the Adult Use Marijuana Act, so there was a majority. It passed. And then Governor Brown, on June 27, 2017, they amended it…amended the Proposition 64, and he signed the Medical and Adult Use Cannabis Regulation Safety Act. Then I read down three more, whereas and then it goes the Planning Commission, and that's us, we're recognizes that regulating licensed commercial activity is permitted in the state, even though the Federal Control Substances Act, various sections, classifies marijuana as a schedule one drug and makes it unlawful under federal low. So I…this is…I don't know how to square that. So here we have the State saying it's okay we're….we're already adopted through amendments to Title 10 of the Municipal Code gives the City regulatory authority to license and regulate the sale of all this stuff for the cannabis activities. Now the Planning Commission is considering entitlement process for actual specification of location but how do we, as planning commissioners and the City, regulate when, even though our State says it's okay, but out United States say it's illegal…I just….how do we square that?

PLANNING OFFICIAL RICK SANDZIMIER – Let me describe the purpose of the whereas statements in the resolution. The intention in a resolution is to make sure that we're doing this in the light of day, so the whereas statements are basically reflecting those facts that are true. The language was also modeled after other resolutions and other ordinances that we examined at other jurisdictions. So we're trying to be consistent with what other jurisdictions have done in thewhereas statements and the findings they have made. It is an interesting dilemma when you talk about what the federal regulations are restricting and what the State is allowing, but then there's power that's vested in a City to make its own regulations in the light of day, and this is where I'll turn it over to the city attorney to help me communicate that part.

ASSISTANT CITY ATTORNEY PAUL EARLY – Thank you. I think the short answer to your question is you can't. Federal Law does continue to prohibit and schedule marijuana as a Schedule 1 drug, and it's prohibited under Federal Law. Our State and a number of other states have decided that they feel differently about it and, City's that follow State Law, many of them have joined on with the State. If you're concerned about city liability or personal liability to the feds, the city is not going to be engaging in any of these uses, so there's really no risk from the Federal Government to the City simply by identifying and allowing….identifying where these uses are going to be permitted or not under State Law. We're just following State Law Guidelines on that, but to the operators of these facilities, they remain under a cloud of enforcement under Federal Law and that's going to depend on the administration at the time, as far as how proactive they are going to be about enforcement of that or not, but how do we square the two? We can't. Currently, they are in conflict.

COMMISSIONER SIMS – Okay, thank you for that, and then the other…the other question is, is has Staff…I guess it goes to public policy as far as benefits to the City. Do the benefits to the City outweigh the necessity to approve these things? So, for instance, if we…I would assume there's sales tax or there's some kind of benefit that comes to the City by approving these…an additional type business, so there must be revenues. Has there been any kind of statistical analysis or economical analysis that would demonstrate that the benefits from revenue increases to the City would offset any of the costs that would come for enhanced regulations, staff investigatory enforcement from our cops and whatnot to make sure that this stuff….that, if this type of business and ordinance is approved, that it's a cost neutral to the City?

ASSISTANT CITY ATTORNEY PAUL EARLY – So this is more on the Regulatory Ordinance side of things and maybe we need to mention how those are…there's two different ordinances at play here, the regulatory ordinance that was already passed by the Council and may be amended in the future. That ordinance is what allows the business to operate. Think of it like a business license, but there's an application process. They owners are screened. They have a number of requirements on them. The application fee is quite substantial on that because it's designed, as you said, to cover all of those costs, including additional staffing, security, police, code enforcement, so all those things have been taken into consideration under the regulatory framework. This ordinance that is before the Planning Commission is subject only to the land use aspect of it. So if you think of it in terms of the cannabis business operator permit license as being a license issued to an individual operator, what's before you right now is more site specific. The Conditional Use Permit for that particular location and any Conditions that might be in addition to the Regulatory Ordinance that are going to apply to that particular location, so there are two separate ones in play, but the first one, the one that the Council's already adopted, does take into consideration those revenue neutral aspects to it. Apart and aside from that, it is possible that there will be additional revenue that's not revenue neutral. It's not

designed to recover costs. It's simply revenue to the City. That could come in the form of sales tax revenue. It could also come in the form of additional special taxation that the voters may approve in the future specifically on these types of businesses, but those would not be to offset anything. Those would simply be revenue.

COMMISSIONER LOWELL – Yeah, I have a couple.

VICE CHAIR KORZEC – Go ahead.

COMMISSIONER LOWELL – I noticed that the WLC, World Logistics Specific Plan area is not an area that allows any type of cultivation use, distribution, testing. Is that something that is potentially amended in the Specific Plan for that side of that part of town or is….that part of town is a pretty big part of town, and it looks like it was excluded.

SENIOR PLANNER MARK GROSS – Yeah that actually is in a one of the specific plans that does not defer over to the Municipal Code. They have their own individual regulations and permitted uses in that specific plan so, in order for that to open up, the Applicant would have to come in and would actually have to modify the specific plan. It would be a specific plan amendment to allow for that type of use if this ordinance was to pass. So it doesn't defer to the Code, ….they would have to look at their own specific plan and see what can be done, and that would be a specific plan amendment to allow for that use.

COMMISSIONER LOWELL – Thank you for that one. Is the permitting process to allow the dispensaries and other facilities, is that a stand-alone permit meaning that store has to be dedicated to that use or could say Target or Walmart or any other existing facility apply for a license to sell?

PLANNING OFFICIAL RICK SANDZIMIER – The answer is the cannabis activity requires a Conditional Use Permit. If an operation like Target wanted to come in and carve out some aspect of Target and say that this is an area we want to dedicate for cannabis activity, we would evaluate it based on the zoning in which it is and based on the proposal that is made, and then it will also have to go through the regulatory commercial cannabis licensing process, and it would also have to go through a State Licensing process, and so it would have to….it would basically have to go through all the same steps, but we did not make a distinction in this ordinance that is before you that it would have to be a stand-alone business. I think a general presumption is that most of them will be stand alone. You'll probably have a dispensary operating on its own, a cultivation or manufacturing facility that's operating on its own. A testing facility is one of those other areas that is kind of a grey area. I have talked to some other jurisdictions where the testing that is being done. There is all kinds of testing that could be taking place because it's kind of a laboratory, and they may add the commercial cannabis testing to one of the things that they do as an operation, so that's

probably the more likely area that the testing lab would come in and do something in addition to cannabis, but I don't really imagine a Target or another shopping, but this is all new, so I don't know.

COMMISSIONER LOWELL – So it's a grey area that's going to be…

PLANNING OFFICIAL RICK SANDZIMIER – That would be a grey area, but it would also be evaluated based on the limit that we've had so, if we've had, 26 permits issued and each of the categories has been used up, somebody comes in and wants to add it to a Target or add it to another shop of some sort, it would still have to go through the same process.

COMMISSIONER LOWELL – Okay, now since you mentioned the number, the permit limit number, what is the process say all of our permits are sold? They are all occupied, every single one of them. Is there a waiting list? Say I want to come in and own my own shop, but all of them are used and would I come in and be the first on the list, would it go for X amount of months or years or is it a random lottery that you come in to apply for a permit and there just happens to be one available you get it?

PLANNING OFFICIAL RICK SANDZIMIER – So there's a couple things happening here, as the city attorney identified. There's a commercial cannabis business licensing process that will be done separately. What's in your purview this evening is the discussion about the Conditional Use Permits.

COMMISSIONER LOWELL – Correct.

PLANNING OFFICIAL RICK SANDZIMIER – So the Conditional Use Permits, we could get an application for 30 Conditional Use Permits. They could all come in. They could be evaluated. All 30 of them could be approved, but then only 26 of them would be authorized to go through the other process but, as long as they clear the hurdle to get Commercial Cannabis License and, as long as they get the State License, only 26 of those 30 CUPs that were issued would become effective. Now a Conditional Use Permit, as we have discussed with other projects that have come before you, has a life of 36 months. So that CUP would be good for 36 months to be exercised upon and, if during that 36 months the Applicant decides that they want to continue the life of that, there's a provision in the Code that allows for those sorts of permits to be extended, so to get an extension of time for another three years and so, if their slot hasn't opened, I guess somebody theoretically could try and keep their Conditional Use Permit active until the point where they do have a slot, but it's not guaranteed just because you got a CUP that you'll get a license.

ASSISTANT CITY ATTORNEY PAUL EARLY – Yeah, I think Rick mentioned or I mentioned the two, the City has two, but there also is a State License requirement here to, so you need all the licenses to operate; the State License,

the City License, and the CUP. The CUP is only about the particular site that we're locating on, so a lot of the concerns you have are important and valid concerns that have been addressed and looked at in both the State and the City's licensing but aren't part of the Land Use Regulations that are in front of you tonight, so that's where there's….I know there's a lot of questions that you have that are or potentially are answered in the State and the Regulatory Licenses, but that's where they would be addressed, not here as far as locations where these would go.

COMMISSIONER LOWELL – Well what my concern is that I don't believe we have a maximum number of liquor stores or smoke shops, but we'll have a maximum number of cannabis industry facilities. So we've haven't really experienced a maxing out of permits yet. This would be the first, in my knowledge, CUP that could max out. So say all 26 permits are used, we're testing microbusiness distribution, all that and cultivation, say somebody does come down the line after all 26 are consumed or used, what's the process. Is there a waiting period? Do you just put your name on a list? Is it a lottery say somebody quits the business, fails, they go out of town, there's 25 of 26, so who governs who gets that last one? Is it just first come first serve?

PLANNING OFFICIAL RICK SANDZIMIER – Okay, so on the CUP, a similar process where things are regulated based on a certain number or maybe a saturation is ABC Licenses. So some of our uses that require a CUP because they are going to sell alcohol, you may have seen that kind of discussion where the Applicant comes in, and I think we had one just a couple of months ago where we have a Condition of Approval that says you've got a Conditional Use Permit that's approved, but that Conditional Use Permit alone does not allow you to sell alcohol or this establishment. You still have to secure your license through ABC. If you're not able to secure your license through ABC because it's an over-concentrated area, and they are not willing to issue a permit because they haven't got a determination of convenience and, I can't remember the word right, but it's a necessity and convenience. So if you don't get that finding, you may not get an alcohol license, but you still have a valid CUP, and that valid CUP is still running with the property and allows that business owner to try and secure the other licenses or approvals that they would need, so that would be similar here. Like I said, you could have maybe 30, maybe 40 people who want to come in and want to get CUPs issued for cannabis activity. We could be bringing them all before the Planning Commission. The Planning Commission could look at all of them, and there would be a Conditions of Approval imposed on those in theory right now is what we're thinking through that, in order to operate that business, you'll still need to get the Commercial Cannabis License approved through the City, and you'll also have to get the State License, and those will become the Conditions of Approval associated with the CUP.

COMMISSIONER LOWELL – So the limiting number is on the City Business License, not the CUP. The CUP, we theoretically have an unlimited number of

CUPs that can condition someone to potentially sell this product, but the 26 is on the other side on the City Business License side?

ASSISTANT CITY ATTORNEY PAUL EARLY – That's the way it's written, yes. It says a maximum of 26 businesses with approved Conditional Use Permits for Commercial Cannabis activity will be allowed to operate in the city at any one time.

COMMISSIONER LOWELL – Gotcha. I misunderstood. I had it the other way around. Alright, I also noticed that the microbusiness is the only business that has a size limit of 10,000 square feet. Are the facilities in industries size commercial restricted?

PLANNING OFFICIAL RICK SANDZIMIER – The commercial cultivation of cannabis is also limited by the State. Our understanding of the regulations to date and what we've written into our code limits that cultivation canopy to 22,000 square feet, and that's tied to the State. So those regulations that we put in there are trying to reflect what the State regulations are. If the State regulations change, our Code would still stay what it is unless they come back and we change the Code but, right now…..

COMMISSIONER LOWELL – Twenty-two thousand for cultivation is the…

PLANNING OFFICIAL RICK SANDZIMIER – Twenty-two thousand is the maximum size for….

COMMISSIONER LOWELL – We're not going to get a 400,000 square foot site huge warehouse coming in manufacturing all the cannabis for the entire country?

PLANNING OFFICIAL RICK SANDZIMIER – So that's an interesting question that we've, we've kind of wrestled with. It depends on how that 400,000 square foot facility is separated with demising walls and stuff, so somebody could come in, if you can get separate licenses approved and carve out the space so to speak so that you're still consistent with our regulations and the State regulations, you could have some concentration or consolidation of that.

COMMISSIONER LOWELL – Okay.

PLANNING OFFICIAL RICK SANDZIMIER – So that's a possibility, but we don't know how that's going to play out yet.

ASSISTANT CITY ATTORNEY PAUL EARLY – And State Licenses are issued one per individual, so you can't have a company come in and open up four different ones, but you could have six different people with separate licenses that we place under a single large roof. That's possible.

COMMISSIONER LOWELL – Okay. I have a few more, but I think that's it for now. Thank you.

VICE CHAIR KORZEC – Any other questions? Okay then let's move it forward to the Public Hearing and our speakers?

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – We have just the one, Rafael Brugueras.

VICE CHAIR KORZEC – Rafael Brugueras please.

SPEAKER RAFAEL BRUGUERAS – Good evening Chair, Commissioners, Staff, and Residents, what a topic that we're all learning at one time. I want to answer Mr. Sims question about this law. If we're only giving license in the State of California and Arizona or Nevada or any neighboring state does not have the same laws and marijuana crosses that line, I guess that's against the law. That's a federal law because now you're taking something that no one else wants. The other Federal Law is we don't know if they can come down from Washington and bust the warehouse down the street because that's federal law. Okay, there's the great side of it. That can happen because they have power over the State, okay Federal Law. Those are things that can happen. Okay, we mentioned the World Logistics Center tonight. God forbid that Iddo was standing right here and would apply to manufacture marijuana on his property. This building would be full right now with hundreds of people, but nobody here tonight is here to fight against marijuana. None of them are here tonight. Those are hypocrites because you could have large buildings instead that produce revenue and jobs and safety but, you know what, I hope tonight you approve it because the voters in this city want it. We want what they want. I want you to approve it tonight, so the opposition that comes here later. I want to look at them in their face and wonder why they were not here tonight to fight or ask questions. Nobody that's how this city…we have two faces in this city, but I know Iddo Benzeevi. I know his character. I know his heart. He would never stand up here and ever do that because not's the kind of man he is. That's an honorable man, and people ridicule him for what he wants to do for the better. See, see look at the evil and good tonight people. Tonight you get to see tonight….tonight you got to see it and feel it between good manufacturing warehouses, technology, and now we're talking about a field that we've never been in. That's okay. Vote on it. I want you to vote on it tonight and allow the staff because they are looking out for us. They are doing their very best to make sure that we don't get hurt. Please pass it tonight and let's do what we should have done in the first place.

VICE CHAIR KORZEC – Thank you. With no more speakers, we will close the Public Hearing, and we will now begin deliberations. Anyone want to go first?

COMMISSIONER SIMS – I personally don't understand the two-step process of…..maybe it's just because of the authority between the differences and the

authorities between what City Council can approve with the ordinance and whatnot with the Title 5 versus Title 9, the purviews of what the Planning Commission do versus the City Council. It would seem, though, that there should've been Title 5 prior to approving and giving the City authorization to regulate and go forward with this cannabis activities that they would've had the supplemental Title 9 analysis done to confirm that this was really something that the City is ready to do, but anyhow that's neither here I suppose. I….it's not for me to say with the State what is right and wrong. I personally have a belief that, if the federal law says it's not legal, I don't know….I have a hard time approving it. I personally do. It's just a….there's a lot of other City's that want to take the risk and go ahead. Maybe it's not a risk but to go forward and approve things and allow businesses to come in and State License them and Conditional Use Permits and so forth and so on it gets authorized, but Jeff Sessions' could come down and say that's it and all the money and effort that's at risk for those applicants to do that, but anyhow philosophically it just seems that there's a public policy issue that isn't settled for the entire country on this and I don't know.

COMMISSIONER LOWELL – I've always been one to believe that pot should be legalized, and we should tax the heck out of it and make a lot of revenue out of it to help balance our budget and fund some city projects and city facilities, state security, state police, federal budgets. However, I don't believe that we are up to the enforcement…I don't believe that enforcement is up to par to actively regulate consumption of it. When I was walking the districts last year and the year before, well not this, but walking neighborhoods for the district, you would be hard pressed to find a residence or neighborhood that didn't have pot smoke coming out of the windows. You walk around, and it smells, you can smell it everywhere. My concern with legalizing marijuana is…well it's already legalized in the state, but my concern with it is that, unlike alcohol, if somebody wants to have a beer or a glass of wine or some hard alcohol, you could do it and consume it yourself and somebody standing right next to you can't be adversely affected by you consuming it. However, if you are at home smoking marijuana, and you have a three-year-old like I do, they could get a contact high. They could get high just by being in the room with you, and that kind of scares me. Yesterday, we had a minor driving a car high, drove over a child near Vista Verde Middle School, and the kid more than likely will lose his leg. I do not think that our level of enforcement is up to snuff to allow distribution in the city. I don't think that the enforcement is up to what we are trying to do today. I'm in line with Mr. Sims over here that I don't think it's the right time to do this.

VICE CHAIR KORZEC – Well I, for once, disagree with you. I looked through all these regulations for the building of these, the landscaping that they can't have, the this, the that….there's so much thought that went into this document to prove that it's not just throwing out a dispensary out there. The regulations are amazing. I don't know who would want to have to do this to be honest with you. There's so many hoops you have to jump through, and I have to commend the City Staff on really buttoning this up. I thought it was incredibly thorough. I think

it's a viable business. People of the state have voted on it. Other cities are doing it. I think you've done a phenomenal job of outlining this. It's not saying that we're going to get all these dispensaries. It's not saying we're going to have all of this. It's we're going to say anyone that wants to start this kind of business like any other business would have the opportunity to do it and, as much as we do smoke shops and we do all these other things, this is a viable business, and it's a new business, and they've certainly buttoned it up with the regulations. I spent hours going through those, and I was really impressed. I don't know how much time you did, but lots of time on that document, so I am going to vote to approve it.

COMMISSIONER LOWELL – Please don't misunderstand me. I do think that City Staff did a phenomenal job. What's before us is absolutely, it's rock solid. I really think you guys did an amazing job.

COMMISSIONER BAKER – You know I think we definitely need to regulate this. This is here whether we like it or not, and I think the Staff did a phenomenal job on putting this together, so I'm in favor of getting regulations in place to do it.

VICE CHAIR KORZEC – With that said, do we have a motion? Unless there are any more comments. Mr. Baker I think you have to make it.

COMMISSIONER BAKER – Okay, I move that we approve Resolution 2018-11 and also 2018-12 and thereby certify that this item is exempt from the provisions of the California Environmental Quality Act (CEQA) as a Class 32 Categorical Exemption and CEQA Guidelines Section 15332….I got the wrong deal don't it? I'm sorry.

VICE CHAIR KORZEC – It's okay.

COMMISSIONER BAKER – Okay, let's try it again. Okay, we're going to….I'm sorry about that. I recommend that the….or let's go this way the Planning Commission approve Resolution No. 2018-09 and thereby recommend that the City Council find PEN17-0157 Municipal Code Amendment for Commercial Cannabis Land Use Regulations qualifies for an exemption under the California Environmental Quality Act for provisions put forth in Senate Bill 94 Medical and Adult Use Cannabis Regulation and Safety Act exempting adoption of an Ordinance in rule of regulation by local jurisdiction that will require subsequent discretionary permits, license, and other authorization and also approve the proposed amendments to Title 9 of the City Municipal Code PEN17-15…chuck that….PEN7-0157 setting forth the Land Use Zoning and Development Regulations for Commercial Cannabis Land Use activities included in Exhibit A and Exhibit B.

COMMISSIONER LOWELL – I think that should be PEN17-0157.

COMMISSIONER BAKER – Okay, let's see the second time I read it wrong or?

COMMISSIONER LOWELL – I think you're good now.

ASSISTANT CITY ATTORNEY PAUL EARLY – It's okay as long as we have the resolution number correctly that's sufficient for your motion, as long as everything under there is what you're wanting to approve.

COMMISSIONER BAKER– Yep, yeah, you got it. Sorry.

VICE CHAIR KORZEC – It's okay. Okay, I can second that. Call for the vote.

Opposed – 2

Motion failed 2 – 2

PLANNING OFFICIAL RICK SANDZIMIER – So that vote is a tie. In the occurrence of a tie, the motion fails. So your options now, you can come up with another recommended action if you want and you can vote on that or the action that's been taken this evening is an action that would have to be appealed in order to go to the City Council. We can go into some clarification on that if the city attorney would like to help me with that, but whenever an amendment to the zoning provisions of our code are acted on by this Planning Commission and, if the action is a recommendation to disapprove, and you didn't take an action to disapprove, but the effect of your vote is not carrying it forward. That's why I need some clarification from the attorney.

ASSISTANT CITY ATTORNEY PAUL EARLY – Alright, it's a unique special language. We had this once before on a different case where we had different language in the case of a non-approval, so we want to make sure we get it right this time, so my recommendation would be to take a short five-minute recess maybe and then come back so we can look at the code and make sure we're following the right procedure on this one.

VICE CHAIR KORZEC – Okay, right don't we reconvene at 9:00?

MEETING BREAK

VICE CHAIR KORZEC – And we're called back into order.

ASSISTANT CITY ATTORNEY PAUL EARLY – Good evening Madam Vice Chair, so I looked at a couple of the options here. I wanted to make sure I had them clear because the action that was taken was actually non-action. There was a motion to make a recommendation of approval. The motion failed to pass; however, that is not the same as a motion for disapproval passing, and our Code speaks to what would happen under the event of a motion for disapproval

passing. It says that the result becomes final and becomes an appealable action. That's the situation we encountered last year, as you may recall. That's not what happened this evening. In my opinion, we just had a motion that failed. That's a non-action. If it were to be left at that, the City Council would be advised of the results of tonight's hearing and would move forward and take appropriate action based on that non-recommendation and based on whatever testimony and hearing that they receive on that date, so that's one option here before you. There are always the options for alternate motions. There are…I looked at whether or not we had the motion for reconsideration available to us. We do not because that can only be made by a member in the prevailing majority. We had no prevailing majority tonight so the only other option, if you did want to move forward with anything tonight, would be to reopen the Public Hearing. You could take some additional testimony, some additional that may be helpful to the Members of the Commission that might help sway their votes one way or the other and then a new motion could be made at that point, but you would open up the Public Hearing and take additional testimony in order to do that. With those options, I kind of leave it in your hands to decide how you want to move forward.

COMMISSIONER LOWELL – So tonight's action is ultimately a recommendation to City Council for them to take a final action on? We're not actually…..

ASSISTANT CITY ATTORNEY PAUL EARLY – Staff is looking for your recommendation for the Council to take final action on at a later time.

COMMISSIONER LOWELL – Okay.

ASSISTANT CITY ATTORNEY PAUL EARLY – However, if this board was to recommend disapproval, that would be….in that rare circumstance, that would be a final action of this board and would need to be appealed to the Council in order for the Council to hear it or for the Council to take it up on their own jurisdiction.

COMMISSIONER LOWELL – I don't know that we're going to have a majority vote on any one item.

VICE CHAIR KORZEC – I, I don't from just…go ahead.

COMMISSIONER SIMS – So I don't know how far we should deliberate or whatnot without…I have two substantive issues for why I voted no, one was….one issue is not as substantive as the other. The first one is the non, just an issue, is the diversions between Federal Law and what the what the State of California has done. I can get my mind wrapped around it because the City, in the answers that were given, the City assumes no risk of that. That's the individual business applicant and, if they get into the business and Jeff Sessions and his guys come and say you're done, you're done, and that's their risk. The other to me, the more substantive issue and I fully understand that what's in front of us with amendment of Title 9 is more Land Use and site specific for the

specific uses of this proposed cannabis activity. To me, I just as a Commissioner, I don't disagree that this is a highly regulated….it was an outstanding job done in setting up regulations for this particular activities. My concern is, and I would like to hear more testimony from Staff about the effort went in when the Title 5 amendment went to Council indicating that there was economic benefit to the City sufficient enough that it would support any and all staffing, whether it's code enforcement or the PD that would have to regulate and force and take action for this. We're looking something here that the Council's approved, as far as to regulate. It's coming to us to specify for entitlement process, I just haven't in my, and maybe I missed it in the presentation, but I did not see it in the Staff Report. My ears didn't hear it or pick it up what is the fiscal responsibility to the City that it's going to be at least cost neutral. That's the benefits aren't outweighed by the costs, so but that's kind of where I'm at.

ASSISTANT CITY ATTORNEY PAUL EARLY – So if you'd like to obtain that info and consider it in you deliberations, your Vice Chair would need to reopen public testimony, Staff could provide whatever additional information they would need. You would then re-open up public testimony. The public would then have a chance, once again, to comment on any of the new information, close public testimony, redeliberate, and make a new motion.

VICE CHAIR KORZEC – What is your pleasure? Who would like to continue?

COMMISSIONER SIMS – I would like to hear the additional information.

VICE CHAIR KORZEC – Okay, as long as one person wants to hear it, I think let's reopen the Public Hearing on this, so….

PLANNING OFFICIAL RICK SANDZIMIER – Let me try and address the questions that Commissioner Sims brought up. Again, I want to preface it with the information that we're going to be providing is information that ultimately will be going to the City Council with regard to the fees that will be assessed on Commercial Cannabis Permit, but it is tied to the Land Use Regulations, and so we've been working very close between the Community Development Department, the Finance Department, the City Attorney's office to make sure that Title 5 and Title 9 modifications work together. With regard to the fiscal questions, for example, the Conditional Use Permit fees. The Conditional Use Permit fees that will be assessed to this particular activity is going to be based on the Conditional Use Permit fees that we already have on the books, so it's approximately $11,000.00 in terms of the fee. There's the $3000.00 potential deposit that has to be made for the Environmental Analysis and that subsequent action, and then there some miscellaneous posting and public noticing fees, and then there is some Water Quality and Hydrology Study depending on what type of activity. Those fees are intended not to make the City money, but they are intended to cover the cost of the service that's provided to issue the Conditional Use Permit, to do the review of the analysis. It comes up between, I believe,

$16,000.00 and $18,000.00 is what that element of a cost would be to an applicant. On the Commercial Cannabis permitting side, similar. The analysis is based, in part, on the total number of permits that we're recommending. So looking at 26 permits, our Finance Department has looked at that and tried to evaluate how much more police service would be necessary for that. What type of possible Code Enforcement Services would we need for that? What will the cost of those additional staffing be needed, and I think that's what you were eluding to earlier. There is also the administrative costs that are associate with processing, and so there are different components to that fee structure and that fee structure, I don't have the numbers before me, but I can tell you they are fairly substantial and one of the line items alone was somewhere between $30,000.00 and $50,000.00. I believe another one was like an $8000.00 or $9000.00 fee, and these are in addition to the CUP fee, so there's these line items in there that have been factored in, again, based on the total number of permits we'd issue, based on how much law enforcement services we would need and then, on top of that, these applicants would have to pay the fees to the State. So they are substantial fees and so, when we assess those fees, we also have to look at recovering our cost and then also making sure it is something that will generate the type of business activity, and so we believe that the fee structure is consistent with all of those factors, and that's about as much information I can give you. If you need more….and I'm sorry the other thing that's important, on the Commercial Cannabis Permit, different than the CUP. The CUP is a permit fee that is only one time when you get the CUP, but the Commercial Cannabis Licensing fee will be an annual fee, so that substantial fee will be paid every year because the cost for services will be born every year. We'll have to have a….if we have to have a police officer, the police officer isn't there just for the first year. He's there for the second year, third year, fourth year and so on, so I hope that provides more information to you. If you want any more detail and you want those specific line item numbers, I can tell you what those draft numbers are as of today but, again, that final number will be something that the City Council will consider based on what the action here is today in terms of if the total number stays at 26. The number is likely to be exactly the same unless some additional information comes but, if you change that number, then we may have to adjust those fees. So that's what I can share with you here.

COMMISSIONER SIMS – So besides the permitting fees, the annual permit fees and so forth, whatever those costs are, I get that there will be a suite of costs that have to be born up front manually to just do….that's part of the business expense for the individual property owner or business owner. Does it, as far as with the projections that the City has done, how's the revenue generated? Is it through sales tax? It goes to the State, and the City gets a certain percent or how is that?

PLANNING OFFICIAL RICK SANDZIMIER – The other revenue stream you're talking about, with regard to taxes, the discussion has occurred so far is that the City would likely be putting together a ballot measure that would have to go

before the voters, and the voters would actually have to vote on a tax, so that's an additional revenue that has not been set yet, and it….I really can't give you much more information than that. I'd have to defer to our Finance Staff to find out how much revenue would be generated but that would be above and beyond just recovering the cost for our services. We can't make money on all the other fees we're talking about. We just have to be able to have full cost recovery with the fees I've described. The tax is additional money that the City would generate that could go into the general fund and could be used discretionary.

ASSISTANT CITY ATTORNEY PAUL EARLY – And without a vote, the City will still be getting, no matter what, it's regular sales tax income that it gets on any sales in the City.

COMMISSIONER SIMS – So the tax that the….go ahead.

ASSISTANT CITY MANAGER ALLEN BROCK – Allen Brock, assistant city manager for City of Moreno Valley. There will be sales tax on those items that are eligible for that that the City would participate, like any other commercial business, so there is a commercial or a commercial sales tax component that would be added to that. Also, with the business permit that Rick was mentioning earlier, there's also some fees built in there for auditing purposes that we will take ownership of to make sure that the businesses are in total compliance with the business permit portion, along with the CUP process, so I wanted to add those two items for you.

VICE CHAIR KORZEC – Any other questions? Okay, I will open this up again to public comment. Do we have anyone?

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – We have three. We have Orlando Montero, Rafael Brugueras, and Alfie Hernandez.

VICE CHAIR KORZEC – Okay, let's start with Orlando Montero please.

SPEAKER ORLANDO MONTERO – Planning Commissioners, thank you. I've been a member, a resident of the city for 18 years now, and I've seen the city go through different cycles. When March Air Force Base closed down, the city was economically depressed. It's coming back. I see this as an opportunity for the city to bring in more revenue. There's been a lot of missed opportunities in the past by this city, and it's here to stay. It's been passed by the State. It's not going anywhere else. It's time for us to take the bull by the horns and say okay it's here. It's us or our neighboring cities. Why not us? Why not bring the money into our city? Why not increase our Code Enforcement, increase our fire department or our police departments. Get more people on the staff. City Council is on board but, most importantly, and this is where I think Mr. Sims and Mr. Lowell you have to take this under consideration. It's been passed, and it's been put before the voters, and it passed overwhelmingly. If you vote against it,

you're voting against the will of the people of this city. We voted for this. We want it, so keep that in mind when you're making that decision when you have another chance to vote on this. It's…the decision has been made by the people. That's who you're here to represent. You're here to represent us, and we've spoken loudly, okay, and as far as your concerns about taxation and regulation, I don't know if you've had a chance to look at the State Guidelines for licensing. They are overwhelming. I wouldn't want to go through it. It's like 500 pages or even probably closer to 1000 pages of regulations. It is the most cumbersome industry that you could get into, the most highly regulated. The City Ordinance alone is a little bit overwhelming for someone who wants to undertake this, so you have to take that into consideration. This is the most highly regulated business in this entire state, so that's all I have to say. Thank you.

VICE CHAIR KORZEC – Thank you Mr. Montero. Rafael Brugueras please.

SPEAKER RAFAEL BRUGUERAS – Good evening Vice Chair, Commissioners, Staff, Residents, and Guests. The one thing that it gave me an opportunity to think about what you said and what he said and what she said earlier and how she recommended how the Staff was doing. You know, the one thing that Moreno Valley is going to have advantage over is Colorado because we're going to do it right. Colorado made mistakes when they shut it out, and they learned the lesson the hard way. They should have figured it out before they allowed that to be dispensed out in their state. Their mistake is our victory in Moreno Valley. Our staff has done a heck of a job to prove to me of one in 210,000 people that live in our city that they are going to do the right thing. Now, you're going to have an opportunity in the future to set things in motion when it comes to the taxes or allowing people to come into our city to do business. You have an opportunity to set things because remember one thing that Rick mentioned, grey areas, I don't know because it's new, but you're going to have a chance to make it right. All seven of you….hopefully, next month it will be all seven of you up there to make it right, but today it's only four. We're going to take the tax money and everything that the State gives us back to make sure they recover their money, our money, and that we have money put aside, if it gets bad enough, that we hire deputies, additional deputies to help us in our city if it becomes a problem but, if we stay strong as a city and we follow our laws, we'll have less problems; really, we will. So let's be strong. Let's pass this. Let's get it through, so we can go to the next step. Remember you have the power in the future to say yay or nay or ask more and more and more questions.

VICE CHAIR KORZEC – Thank you Mr. Brugueras. Next, we have Alfie Hernandez.

SPEAKER ALFIE HERNANDEZ – Good evening Staff. Good evening Commission. My name is Alfie, and it seems like everyone is talking about the economic standpoint of this argument, but what about the medical aspect? I'm a former veteran United States Marine Corps. I got out of the Marine Corps with

multiple sclerosis, and this is…..I've been on Avonex, which was an interferon, for a very long time, and I started receiving more adverse side effects from the Avonex, which was prescribed to me by our Federal Government. Then I came across cannabis, and cannabis helped me dramatically. The side effects of the Avonex prohibited me from going to work on Monday mornings because the side effects lasted almost 72 hours. With my cannabis, which is a natural medicine, I was able to medicate every day, still function at work, and still be a father. Under Avonex, I wasn't able to. We used to have a little ritual before I took my shot every Friday that dad was going to be sick for two days because I would get, my side effects would be fever-like symptoms. So I understand the economic aspect of the city, which is a plus, but there are a lot of patients out there in which this medicine is helping and by being in this area, I'm sure there will be easy access for these patients to get this medicine. Now I have or had children that were opiate addicts. If it wasn't for cannabis, which helped them get off opiates, this is a historic and not only that a medicine that is helping thousands of people across our country, maybe millions. We're not even talking about the world, so please consider your decisions. I understand there is an argument regarding federal prohibition. Well there was an alcohol prohibition, and we knocked that down state by state, as well, just as we are doing today. I know there was a concern about smell. The State has regulated that. I think all the businesses have to have some kind of air purification so that its neighbors cannot smell the cannabis floating through the air duct systems, so there are some places in place right now that will help out with these concerns but, most importantly, let us give the rights to the people of California who voted for this, and let's keep the federal government out of our business. I'm sure they got bigger no acute distress better problems that they can handle at the moment as we speak but, right now, let's let our State handle it and, as the attorney of our city addressed, it's not really a municipal issue, and we're far from that. The State can handle that. I'm sure Jerry Brown is ready for the Federal Government if they decide to come in our state, and that's all I'd like to say. Thank you.

VICE CHAIR KORZEC – Thank you Mr. Hernandez. If there are no more speakers, we will close this portion of the hearing, and we will go once again into deliberation. If there's no deliberation, I will….

COMMISSIONER SIMS – Well I, like I said, like I said, I have two issues. First was the federal, that's a…I can get past that. Now, as far as the….I appreciate the additional information about the economics of this. So kind of repeating what I think I heard was is that the permitting process and so forth that's going to be implemented by the City and the annual licensing fees to retain a business license for the cannabis operations will be substantial and that the…between those expenses, there's been an analysis that's been done to look at the cost side for staffing and whatever enforcement costs are that they'll be covered and potentially opportunities if there is a special tax or whatnot that the city, if that goes before a vote, would put additional revenues if needed to support

enforcement of the regulations, so anyhow those were my two main concerns. I think they've been addressed.

VICE CHAIR KORZEC – Shall…would someone like to make a motion?

COMMISSIONER BAKER – Okay, I move that we approve Resolution 2018-09 and thereby recommend that the City Council find that PEN17-0157 Municipal Code Amendment for Commercial Cannabis Land Use Regulations qualifies for exemption under the California Environmental Quality Act provisions put forth in Senate Bill 94 Medicinal and Adult Use of Cannabis Regulation and Safety Act exempting adoption of an Ordinance Rule or Regulation by the local jurisdiction that will require subsequent discretionary permits, license, and other authorization. Then also approve the proposed amendments to Title 9 of the City Municipal Code PEN17-0157 setting forth Land Use Zoning and Development Regulations for Commercial Cannabis Land Use activities included as Exhibit A and also Exhibit B.

VICE CHAIR KORZEC – And I will second that. All for the vote.

Opposed – 1

Motion carries 3-1

VICE CHAIR KORZEC – Okay, moving on. Is there anything we have to say after this?

PLANNING OFFICIAL RICK SANDZIMIER – No. The wrap-up on this one, this is a recommendation that will go forward to the City Council. We do have a tentative target date to get to the City Council, which would be March 20, 2018. That would also be a properly noticed public hearing and then the recommendation of the Planning Commission would be included in the Staff Report, and the City Council will be taking an action on that.

VICE CHAIR KORZEC – Okay, thank you.

OTHER COMMISSION BUSINESS

4. Formation of Ad Hoc Committee to consider Planning Commission vacancies. (Report of: Planning Commission)

   On February 8, 2018, the Planning Commission requested this agenda item be placed for their discussion and direction as warranted.

This item (#4) has been removed from the agenda.

5. Planning Commission Action Minutes (Report of Planning Commission).

VICE CHAIR KORZEC – Moving along, other Commission business. Number four was taken off because we have people that have been appointed to the vacancies, and we'll move onto number five, the Planning Commission Action Minutes, and is there any discussion on this? I thought…

COMMISSIONER BAKER – I liked it.

VICE CHAIR KORZEC – I liked it. I thought it was great. I don't like reading all the ah's and um's and all those things and the 20 pages of us thinking, and I think it's much more professional. I think it's easier for the public to read and get to the meat of it so, once again, I applaud you. I think it's a good idea.

PLANNING OFFICIAL RICK SANDZIMIER – Just for the record, Madam Vice Chair, I would like to extend kudos to Ashley who is new here at the City and been serving you guys well. One of the things I asked her to do was to look at how we could be more efficient and really her efforts in looking at this has been showcased obviously by your comments. She has been working closely with the City Clerk's Office, and we've already coordinated through the City Attorney's office to make sure that we can change the format of the Minutes. We've been using the verbatim minutes for a while. They do come at a cost because we have to take those recordings and give them to a transcriber so one of the other benefits were looking at is to try and reduce the cost but also meet the intent and interest of the Commission and the City Council so that they have information available to them as well as the public will be able to see very clearly what actions were taken by this body. The other thing that we did highlight in the report that we gave you is that we will continue to videotape and audio record each of our meetings so, in the event that anybody ever wanted to go back and get the level of detail that the verbatim minutes provide that can be requested and, if they are requested, they can be specific to an item on the agenda, rather than the entire agenda, so we think that we have all of those options available to you, so I just wanted to make sure that was clear on the record as you consider this this evening. We would like you to direct us to use the new summary format, rather than the verbatim minutes and, if we do get that nod, we would be starting to use those as of March Ashley, is that what we said?

ADMINISTRATIVE ASSISTANT ASHLEY APARICIO – Yes, our first meeting in March.

PLANNING OFFICIAL RICK SANDZIMIER – Correct, so these minutes for tonight's meeting would still go through the verbatim process, but we would start in March.

VICE CHAIR KORZEC – Do any of you have any comments or questions? We don't need to do a motion. We can just do a simple vote, can't we, on this?

ASSISTANT CITY ATTORNEY PAUL EARLY – It's not even a vote item….your just…it's just for you to give direction….

VICE CHAIR KORZEC – Head nodding? Well we have to make sure everybody….head nodding. Okay, it's a go. Ashley, it's amazing what you've done in the brief time you've been with us.

COMMISSIONER BAKER – Yeah.

VICE CHAIR KORZEC – Thank you.

STAFF COMMENTS

VICE CHAIR KORZEC – Alright, moving on. Are there any Staff Comments?

PLANNING OFFICIAL RICK SANDZIMIER – My only comment…actually a couple of comments. You did mention the appointment of Planning Commissioners. The City Council did appoint four members. There was one who did withdraw their name, so there were three that were effectively appointed. Two is alternates and one is a regular commissioner. It's my understanding you're working with the City Clerk's office that those three candidates need to go through the final steps, administrative steps to get sworn in and do the appropriate checks and what not. If everything goes according to plan, we expect that they would be seated at your next meeting on March 22, 2018. The other thing is I mentioned at the last meeting that we brought Albert Armijo on board. Albert is getting now acclimated to the second meeting here, and I what I have talked to him about is that I'll probably be bowing out at some of the meetings in the near future. I will still attend from time to time on some of the more maybe complex or complicated issues, but you'll probably see Albert as the mainstay here for the next meeting.

PLANNING COMMISSIONER COMMENTS

VICE CHAIR KORZEC – Thank you. Do we have any Planning Commissioner Comments? Nothing?

COMMISSIONER SIMS – It's going to be welcome to have a full dais up here.

VICE CHAIR KORZEC – Yes, it will. It will be…we haven't had that in a year.

COMMISSIONER SIMS – We can avoid situations like tonight.

ADJOURNMENT

VICE CHAIR KORZEC – That's right. Okay, great. If there's nothing else, the meeting is adjourned at 9:34 to the next meeting on March 22, 2018. Thank you.

NEXT MEETING

Next Meeting: Planning Commission Regular Meeting, March 22, 2018 at 7:00 PM, City of Moreno Valley, City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, CA 92553.

_____ _____

Richard J. Sandzimier Date
Planning Official
Approved

_____ _____

Patricia Korzec Date
Vice Chair
Approved

Minutes Acceptance: Minutes of Feb 22, 2018 7:00 PM (APPROVAL OF MINUTES)

PLANNING COMMISSION

STAFF REPORT

Meeting Date: March 22, 2018

A GENERAL PLAN AMENDMENT, CHANGE OF ZONE AND SPECIFIC PLAN AMENDMENT TO MODIFY THE EXISTING FESTIVAL SPECIFIC PLAN 205 PROPOSING A WIDER RANGE OF LAND USES AND DEVELOPMENT OPPORTUNITIES

Case:	PEN16-0013 General Plan Amendment PEN16-0014 Change of Zone PEN16-0015 Specific Plan Amendment
Applicant:	LCG MVF, LLC
Owner:	Joseph E. Miller, Moreno Valley Festival, LTD
Representative:	LCG MVF, LLC
Location:	Easterly of Heacock Street between Ironwood Avenue and State Highway 60.
Case Planner:	Chris Ormsby
Council District:	1

SUMMARY

The applicant, LCG, MVF, LLC is proposing a Specific Plan Amendment to modify the existing Festival Specific Plan 205 (SP205). The Specific Plan Amendment proposes a wider range of land uses and development opportunities as part of a comprehensive update of the Specific Plan text. The current Specific Plan document allows for commercial, office, and service commercial related uses. The proposed land uses under the Amendment include commercial, retail, business park, office, and medical. A General Plan Amendment and Change of Zone is required for consistency between the proposed Specific Plan designations and the City's General Plan and Zoning Atlas.

The scope of the Specific Plan includes a comprehensive update of the existing Specific Plan document. The Specific Plan Amendment includes a total of 63.78 acres. There is no specific development proposal at this time. All future development within the Specific Plan will require the submittal of development applications that will be reviewed for consistency with the Specific Plan zoning standards.

BACKGROUND

A Specific Plan is an established planning tool in State planning law to facilitate implementation of the General Plan. A Specific Plan is a legislative act similar to adoption of a General Plan Amendment. The hierarchy of planning tools can be thought of as a pyramid with the General Plan at the top, followed by Specific Plan, zoning regulations, and then development applications. A Specific Plan provides a link between implementing policies of the General Plan and the individual development proposals. A Specific Plan can establish unique zoning standards that differ from the Municipal Code, but would at the same time still further the objectives of the General Plan. The State law regulating Specific Plans is found in Sections 65450-65457 of the Government Code.

The City Council approved and certified the Moreno Valley Festival Specific Plan 205 on October 27, 1987, and approved an amendment in 1991 to include additional commercial areas. The initial approval was for a joint Specific Plan and Environmental Impact Report. The Specific Plan area, located along Heacock Street east between Ironwood Avenue and Hemlock Avenue, was designed as a freeway oriented commercial and office development including public utility and infrastructure needs associated with the project. The Specific Plan Amendment included multiple land uses providing various development opportunities including commercial, retail, medical and office uses.

The Moreno Valley Festival has struggled as a commercial and retail center for the better part of two decades. Subsequent to development of the commercial centers within the Moreno Valley Festival Specific Plan in the late 1980's and early 1990's, there was considerable development of commercial uses within the Towngate Specific Plan to the west, including construction of the Moreno Valley Mall, and farther west of Day Street within the City of Riverside. The synergy of these areas shifted the focus of economic activity to the west.

The intent and goal of the proposed Specific Plan Amendment is to revitalize this Center by providing for a healthy mix of uses at the site. The focus will be on creation of employment centers and service amenities that will complement small businesses and enrich the quality of life for residents of Moreno Valley. The addition of business uses will bring more employees and clients to the Specific Plan area, and therefore would provide an opportunity to reenergize the commercial areas of the City.

For the most part, the surrounding area conditions have not changed from the initial project approvals in 1987. Existing single-family residences are located to the north with only a few residences fronting on the north side of Ironwood Avenue east of Davis

Street. Most of the residential lots to the east of the Specific Plan area abut the existing regional detention basin. The proposed land use for the basin will not be modified by the Specific Plan Amendment. Existing commercial uses and office are located west of Heacock Street with single-family and multi-family zoning located further to the west. The property south of State Highway 60 is designated as Village Plan – Village Commercial Residential (VCR).

History of the Festival Specific Plan

Construction of the existing commercial buildings within the Moreno Valley Festival Specific Plan began in the late 1980s. The shopping center on the north side of Hemlock was anchored by the HomeBase store, a hardware store similar to Home Depot and Lowe's. The Edwards Cinema complex was later built on the site.

The HomeBase store closed in the early 2000's followed soon thereafter by the closing of Edwards Cinema and several restaurants. According to the applicant, the existing commercial center is experiencing ongoing vacancy rates exceeding 60% with limited options to rectify the current situation based on market demand for the current zoning potential in that location. In addition to these challenges, the broader retail and commercial market has experienced major disruptions related to e-commerce and personal lifestyle changes resulting in further store closings and bankruptcies locally and regionally. The center otherwise appears to be well-positioned on State Highway 60, which provides opportunities for employers, service providers and small retailer's good visibility and access.

The applicant feels that the proposed Specific Plan Amendment creates the best opportunity to revitalize the project. The change would introduce a designation of "mix of uses" for the majority of the project area. The "mix of uses" designation would allow for flexibility and adaptability to changing market conditions. The applicant feels the benefits for the City and its residents would be immense, providing increased employment opportunities, services, sales and property tax revenue, and the increased presence and development activity on the site will positively impact (reduce) the daily nuisance concerns, including homelessness, accumulation of trash and debris, and deferred maintenance of the property that the City currently faces at the project area.

A majority of the public utility and street infrastructure has been installed with prior development; however, future development will require the infrastructure to be consistent with current requirements.

PROJECT DESCRIPTION

The Specific Plan Amendment includes all the required components under the State planning law included in Section 65451 of the Government Code. This includes text and diagrams that address the following:

A. Distribution, location, and extent of the uses of land within the Specific Plan.

B. Development standards and criteria, and standards for the conservation of natural resources where applicable.
C. Proposed location, distribution, and extent and intensity of major components of infrastructure, including circulation, utilities, and other essential facilities.
D. A program of implementation measures regarding regulations and programs to carry out development with the Specific Plan area.

The Plan area is 63.78 acres easterly of Heacock Street between Ironwood Avenue and Hemlock Avenue and one block west of Nita Drive (Attachment 1). The Plan provides for the following land uses, Retail Commercial, Commercial Office and Medical, Business Park District, Related Uses and Open Space (existing detention basin).

The Plan provides a comprehensive description of specific guidelines for development within the Plan while providing development opportunities and establishing appropriate buffers to the surrounding existing development.

General Plan Amendment

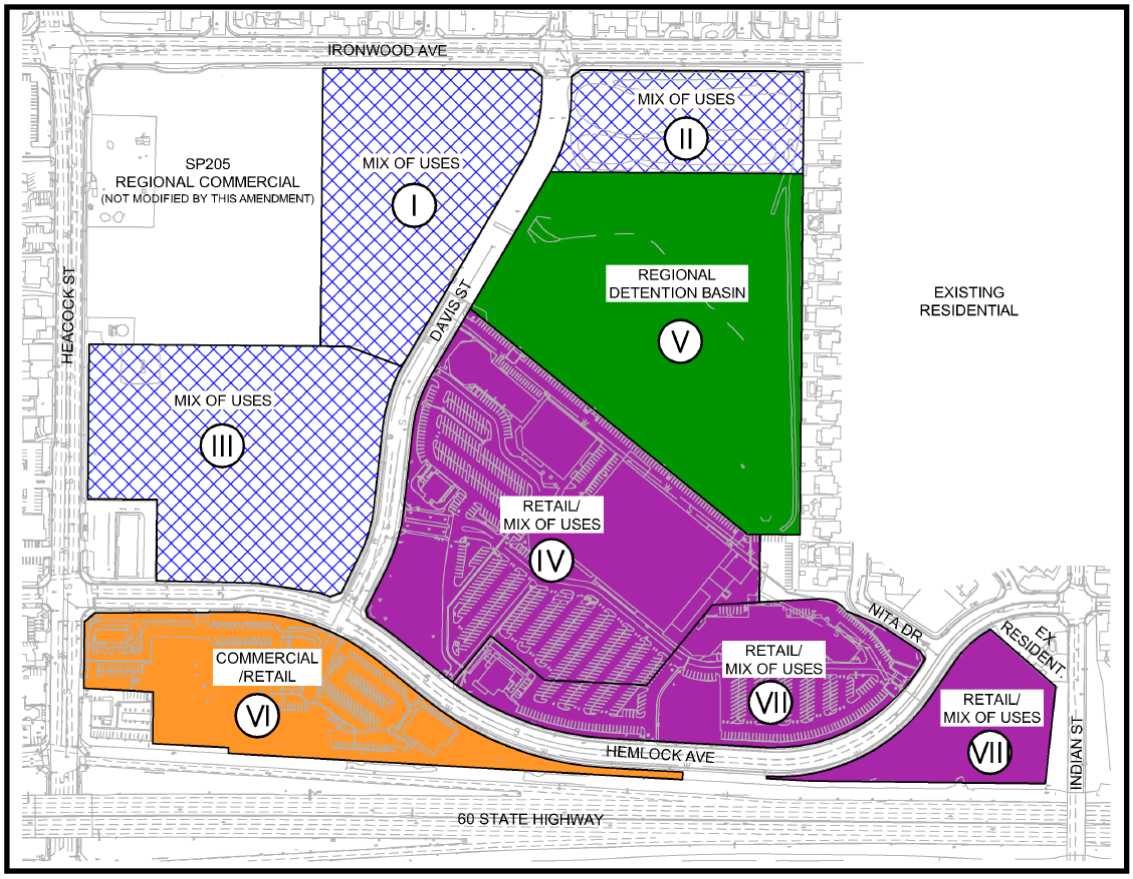
The proposed General Plan Amendment would modify the existing General Plan designations on the site from Commercial to Business Park for all Planning Areas except for Planning Areas V (detention basin) and VI (adjacent to State Highway 60) which will not be modified (Attachment 2). The key policy consideration for the General Plan Amendment is the inclusion of Business Park as the designated land use within the Specific Plan. The General Plan Amendment also pertains to an additional 1.84 acres owned by Eastern Municipal Water District just westerly of Davis Street on the north side of Hemlock that was not previously shown as part of the Specific Plan.

Comparison of Zoning Designations

The range of commercial uses allowed under the current Specific Plan is very similar to the proposed Permitted Uses Table (pages 63-65) of the Specific Plan document. The significant change and distinction is the introduction of the Mix of Uses designations that will allow for business park uses. For Planning Areas I, II, III, and IV, this includes light industrial, wholesale, and manufacturing. The proposed shape and size of these planning areas would limit the potential for large warehouse buildings, as the City has seen developed in the south industrial area. The potential for Business Park uses within Planning Area 7 and 8 is limited to only specific categories by the Specific Plan Permitted Use Table.

The applicant's intent is for Planning Areas IV, VII, and VIII to remain as commercial retail, or, for the vacant portions, to develop as retail commercial. The purpose of allowing for some business park uses would be to allow for development flexibility, which would provide the opportunity for those warehousing uses with retail. As an example, these zones would allow for warehousing and retailing of household goods such as furniture, carpet, and flooring. The current Specific Plan does not allow for this flexibility.

Planning Area	Current designation	Proposed designation
I	Commercial	Mix of Uses
II	Commercial	Mix of Uses
III	Commercial	Mix of Uses
IV	Commercial	Retail/Mix of Uses
V	Regional Detention Basin	Regional Detention Basin
VI	Commercial	Commercial Retail
VII	Commercial	Retail/Mix of Uses
VIII	Commercial	Retail/Mix of Uses



Site

The Specific Plan area is approximately 50% developed with commercial related uses. The developed commercial areas are located south of Hemlock Avenue, and

northeasterly of Hemlock Avenue and Davis Street. The anchor tenant and movie theaters remain vacant.

At present, the majority of all property within the Specific Plan is designated as Commercial which allows for a wide range of commercial uses. The exception would be the Commercial/Office Park zoning at the southeast corner of Ironwood Avenue and Davis Street.

Access/Parking

Although there are no applications for development projects associated with this Specific Plan Amendment, the Amendment includes a circulation plan, and provides for parking requirements similar to the Municipal Code. The proposed circulation plan utilizes the same backbone circulation system that was identified in the approved Specific Plan.

A traffic analysis was prepared that analyzed the potential for traffic impacts associated with the expanded land uses. Trucks travelling to and from the project site will not travel down local residential streets and will be required to use existing truck routes. Truck traffic would be required to access the Specific Plan area from Hemlock Street or Heacock Street. Trucks will not be permitted to access the site from Ironwood Avenue. The proposed Mitigated Negative Declaration includes twenty-one (21) Transportation/Circulation mitigation measures to address potential impacts. These are aimed at improving intersection performance and safety.

All future development within the Specific Plan area would be required to satisfy the City's parking standards.

Design Standards

The Specific Plan Amendment provides an update and refinement of the design standards included in the current Specific Plan (Attachment 3). The project includes architectural guidelines which are intended to allow for contemporary quality design with flexibility in architectural style. The architectural guidelines have moved away from the outmoded architectural standards, which included references to nautical themes. With regard to architectural character for retail buildings, the standards state that the architecture should further a retail market image, encourage foot traffic, provide opportunities for outdoor dining, and overall provide distinctive architectural elements. The architectural standards emphasize contemporary design with the use of clean lines and a focus on a pedestrian friendly development.

The standards include the enhancement of entry areas with monumentation as described in Section 4.2.6 of the Specific Plan document (beginning on page 49).

Buffers

The Specific Plan Amendment also includes requirements regarding buffering of uses from residential. With the expansion of the Specific Plan to include business park uses, there was attention given to the buffers of any potential business park and commercial uses from the residential uses to the east or north.

REVIEW PROCESS

When the project was initially submitted, it was envisioned to include the potential for some multi-family residential in specific planning areas. After further consideration, the residential component of the project was eliminated so that the document could remain more focused on the commercial and business park design and zoning standards. This also eliminated potential challenges of developing standards for buffering for commercial related uses and residential within the Specific Plan area.

The approximately 10 acres site at the southeast corner of Ironwood Avenue and Heacock Street is under a separate ownership. Through the review process, their management expressed their preference that the property not be subject to the proposed Amendment and that that property retain development provisions of the current Specific Plan.

ENVIRONMENTAL

An Environmental Impact Report and Specific Plan document was prepared for the project, and was certified in 1987.

For the proposed Specific Plan Amendment, the project consultant, Blodgett-Baylosis Environmental Planning, prepared an Initial Study which recommended a Mitigated Negative Declaration as appropriate environmental documentation (Exhibit A of Resolution No. 2018-13). The consultant coordinated the preparation of several technical studies including updated biological reports, a traffic study, air quality and greenhouse gas analysis. The Mitigated Negative Declaration has proposed mitigation measures in several areas including Biological Resources, Cultural and Tribal Resources, Greenhouse Gas Emissions, noise impacts, and Transportation and Circulation impacts. The mitigation measures for Greenhouse Gas emissions will also further the reduction of impacts on air quality. The mitigation measures have been incorporated into the Mitigation Monitoring and Reporting Program (Exhibit B of Resolution No. 2018-13).

The tribal consultation under SB18 and AB52 was completed for the project. Three tribes have requested monitoring for future development projects within the Specific Plan area. Since there are no conditions of approval for a Specific Plan, mitigation measures have been incorporated to ensure implementation to protect tribal resources. With the adoption of the mitigation measures, tribal consultation is closed with all tribes that requested consultation.

NOTIFICATION

The public hearing notice for this project was published in the local newspaper on February 18, 2018. Public notice was sent to all property owners of record within 300 feet of the project site on March 8, 2018 (Attachment 5). The public hearing notice for this project was also posted on the project site on March 9, 2018.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution Nos. 2018-13 2018-14, 2018-15, and 2018-16 and thereby recommend that the Moreno Valley City Council:

Resolution No. 2018-13

1. **ADOPT** the Mitigated Negative Declaration (PEN16-0016) prepared for the Amended Festival Specific Plan (SP 205) project on file with the Community Development Department, incorporated herein by this reference which has been completed in compliance with the California Environmental Quality Act, that the Planning Commission reviewed and considered the information contained in the Mitigated Negative Declaration and that the Mitigated Negative Declaration reflects the City's independent judgment and analysis hereto attached as Exhibit A; and

2. **ADOPT** the Mitigation Monitoring and Reporting Program prepared for the proposed Amended Festival Specific Plan (SP 205) project, attached hereto as Exhibit B; and

Resolution No. 2018-14

3. **APPROVE** PEN16-0013, General Plan Amendment as shown on the attachment included as Exhibit A; and

Resolution No. 2018-15

4. **APPROVE** PEN16-0014 Change of Zone as shown on the attachment included as Exhibit A; and

Resolution No. 2018-16

5. **APPROVE** PEN16-0015, Specific Plan Amendment 205 subject to the attachment included as Exhibit A.

Prepared by: Approved by:

Chris Ormsby
Senior Planner

Albert Armijo
Interim Planning Manager

ATTACHMENTS

1. Aerial Photograph
2. Specific Plan Amendment (SP 205)
3. Proposed General Plan Amendment Map
4. Public Hearing Notice
5. Resolution 2018-13
6. Exhibit A - Initial Study and Mitigated Negative Declaration
7. Exhibit B - Mitigation Monitoring and Reporting Program
8. Resolution 2018-14
9. Exhibit A - General Plan Amendment Map
10. Resolution 2018-15
11. Exhibit A - Change of Zone Map
12. Resolution 2018-16
13. Exhibit A - Specific Plan Amendment (SP 205)
14. Air Quality Impact Analysis
15. General Biological Assessment Report
16. Noise Measurements Location 1
17. Noise Measurements Location 2
18. Noise Measurements Location 3
19. Traffic Impact Analysis
20. Traffic Impact Analysis Appendix C
21. Cultural Resources Assessment

Festival Specific Plan (SP 205)
Aerial Photograph

Legend

- Parcels

Notes

1,232.1 0 616.05 1,232.1 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Print Date: 3/13/2018

DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

THE MORENO VALLEY FESTIVAL ®

AMENDMENT TO SPECIFIC PLAN 205

February 15th, 2018

City of Moreno Valley
Riverside County, California

Adopted:

Date: _____

Ordinance: _____

PROJECT TEAM

CONSULTANTS:

Blodgett Baylosis Environmental Planning
Marc Blodgett
P.O. Box 5037
Hacienda Heights, CA91745
Bus: (626)-336-0033
E-mail: blodgett.marc@gmail.com

Thomas Breitkreuz – Owner's Development Consultant
711 Chestnut Ave
Redlands, CA 92373
Bus: (909) 2393482
E-mail:breitkreuz@roadrunner.com

ARCHITECT:

National Engineering & Consulting Inc.
Contact: Michael Santillan, Architect
27 Orchard
Lake Forest, CA 92630
Bus: (949) 716-9990
E-mail: *Michael.Santillan@nationaleng.com*

LANDSCAPE ARCHITECT:

Scott Peterson, ASLA
2883 Via Rancheros Way
Fallbrook, CA 92028
Bus: 760 842-8993
E-Mail: *scott@splainc.com*

CIVIL ENGINEER:

Jeff Meiter, LS, RCE
President
Valued Engineering, Inc.
180 N. Benson Avenue, Suite "A"
Upland, CA 91786
Bus: (909) 982-4601
E-mail: www.valued-eng.com

TRAFFIC CONSULTANT:

Rawad Hani & Rudy Garcia
Transpo Group
603 N Parkcenter Drive, Suite 108
Santa Ana, CA 92705
Bus: 949.656.7925
Email: rawad.hani@transpogroup.com | rudy.garcia@transpogroup.com

CONCEPT RENDERING

Note: The renderings, photographs, and illustrations contained herein present the general vision and intent for future development. As the project progresses to actual construction, precise plans, and design specifications consistent with these illustrations will be submitted to the City of Moreno Valley for review and approval prior to the issuance of construction permits.

TABLE OF CONTENTS

1.2 The "Moreno Valley Festival"

This specific plan document is a modification to the existing "Moreno Valley Festival" Specific Plan/EIR (SP-205) which was approved and certified by the City Council of Moreno Valley on October 27 1987.

A later Phase-III included in Amendment 3, with a "Specific Plan Boundary Area" of 81.5 acres was approved in 1991 where the land use was re-targeted to more commercial retail development uses.

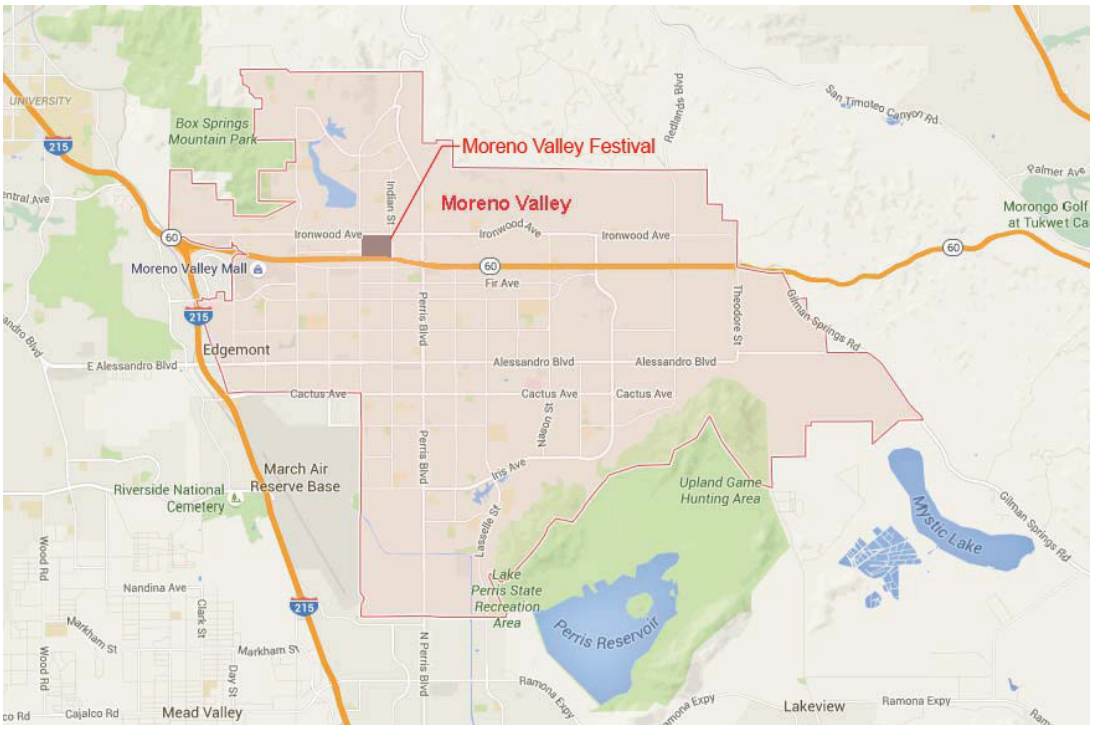
The purpose of this amendment is to modify the Adopted Specific Plan as a means to promote a wider range of land uses and development to address current development trends. The expanded range of allowable uses will include land use designations such as commercial, retail, business park, office and medical and related uses.

The "Moreno Valley Festival" Specific Plan **total boundary area** covers approximately **63.78 acres** in the City of Moreno Valley, California. The "Moreno Valley Festival" boundary plan is located;

- Easterly of Heacock Street;
- Between Ironwood Avenue and Hemlock Avenue; and
- One block West of Nita Dr.

The 9.96 acre privately owned property located at the southeast corner of Ironwood Avenue and Heacock Street is part of the original adopted Specific Plan (SP 205). This property is not part of the proposed Plan Amendment. The owner applicant shall work in a collaborative manner with the owner of the 9.96 acre privately owned site to ensure conformity and compatibility of access for a more efficient and uniform design, if the product type and uses create a mutually beneficial opportunity. In addition there are two parcels located within the Plan Amendment that are under separate public ownership. A smaller portion (1.84 acres) of Planning Area 3 is currently owned by the Eastern Municipal Water District (EMWD). Planning Area 5 in its entirety is owned by the City of Moreno Valley and is used for storm water retention. The Plan Amendment does not contemplate any change in the use of the Regional storm water retention basin.

Note:
For purposes of consistency, this document shall refer to this project as **"Moreno Valley Festival" ("MVF")** rather than "Festival at Moreno Valley" as it has been referred to in the Specific Plan and Specific Plan Amendments.



***Note** all maps and illustrations are shown enlarged in the appendix.

Figure 1-1 Regional Map

1.3 Specific Plan Overview

The "MVF" is a master planned development including State Highway oriented commercial, retail, business park, office and medical and other related uses. This high quality project includes a Mix of Uses that been phased to respond to the employment and community service needs of a growing local and regional population base. The different land uses of this development are being harmoniously designed, with care being taken to successfully mitigate any sensitive development issues.

The "Moreno Velley Festival" Specific Plan includes the following land uses;

- Retail Commercial
- Commercial Office and medical
- Business Park District
- Related Uses
- Detention Basin/Open Space

During the original planning process for the "MVF" (SP 205), consideration was given to all public utility and infrastructure needs associated with the proposed project. The majority of the infrastructure has been installed per the approved specific plan including all of Hemlock Avenue and approximately two-thirds of Davis Street. All future public utility and infrastructure shall be installed according to Title 9 and the requirements of this Specific Plan. These are being installed on

a phased basis as logical and orderly extensions of area-wide master planned facilities. Implementation of roadways and infrastructure to serve the project site will occur according to development needs.

The "MVF" Specific Plan has been adopted pursuant to Government Code Section 65450 which grants authority to cities to adopt specific plans for purposes of implementing the goals and policies of their General Plans. The Government Code sets forth the minimum requirements and review procedures for specific plans including the provision of a land use plan, infrastructure and public services plan, criteria and standards for development, and implementation measures.

The Specific Plan and Amendments complies with the City of Moreno Valley's Municipal Code (Chapter 9.13) governing amendments of the specific plans content and procedures for their adoption and enforcement.

1.4 Specific Plan Vision and Objectives

This document will provide a comprehensive description of specific guidelines for development within the "MVF" Specific Plan area as well as to establish a logical framework for the creation of a high quality Mix of Uses development. The goal is to ensure an aesthetically pleasing and integrated master planned project which shall create a desirable working and shopping, environment to enhance the community's overall image. Objectives to accomplish these goals are:

- Create a cohesive development by integrating commercial, retail, business park, office and medical and related uses;
- Provide opportunity for creativity within individual projects; and
- Establish an appropriate buffer relationship among potential land uses and between non-residential uses and existing residential neighborhoods.

The Specific Plan will establish the zoning criteria that will guide the orderly development of the "MVF" projects and carry out the goals of the City's General Plan. Included are development standards for integrated site planning, architecture, and landscaping. These standards establish a consistent design concept that produces a clear image and a sense of prestige, efficiency and integrity for the "MVF" and each project within.

This Specific Plan implements all applicable elements of the General Plan and includes detailed information about the area's infrastructure improvements such as roads, water, sewer, utilities and flood control facilities.

Figure 1-2 Specific Plan Edge Treatment Areas

1.3.1 Development Goals

The Specific Plan creates planning strategies and development standards specifically for the property to incorporate its unique advantages, adapt to its constraints, enhance the economic growth needs of the City, and create consistent and compatible land uses for the area in an environmentally responsible manner. Development of the "MVF":

- Provides the land use designations and infrastructure plan necessary to support the City's Economic Development Action Plan,
- Creates a project that will provide a balanced approach to the City's responsibilities of fiscal viability, economic opportunity and environmental integrity,
- Provides numerous ongoing employment opportunities,
- Provides hundreds of construction job opportunities during the project's build-out phase,
- Establishes architectural and landscape design guidelines for the project, and
- Provides appropriate transition between the project and adjacent uses.

1.3.2 Specific Plan Approval

The Specific Plan No. 205 was approved by the City of Moreno Valley on 1991-02-21COA (Amendment #3). The document will supersede the Specific Plan text and all previous amendments for the designated planning areas, which includes development standards for a cohesive user-friendly specific plan document.

All development proposed within the "MVF" will be developed consistent with the development standards and design guidelines contained herein. The review process shall be as specified in Title 9 of the Municipal code.

1.3.3 Green Building-Sustainable Development

Construction of the "MVF" will be in conformance with California's "Cal-Green" building regulations, the most stringent, environmentally-friendly building code in the United States. Cal-Green is a comprehensive, far-reaching set of regulations which mandate environmentally-advanced building practices and regulations designed to conserve natural resources and reduce greenhouse gas emissions, energy consumption and water use.

The project shall incorporate sustainable design features to further reduce its environmental footprint, including but not limited to:

- Reduced water use for landscape irrigation,
- Accommodate the use of alternative means of transportation,
- Use recycled building materials to the extent feasible,
- Use local sources of building materials to the extent feasible,
- Minimize the use of impervious paved surfaces throughout the project,

1.3.4 Sense of Place

The Specific Plan establishes a strong and unique identity for the "MVF" Site. The Specific Plan guides the establishment of the project's sense of place by:

- Applying comprehensive, overall project design guidelines for architecture and project landscaping,
- Using streetscapes, banners, entry monuments, and architecture to strengthen the project identity.

1.3.5 Project Infrastructure

The Specific Plan identifies the backbone infrastructure systems needed to serve the project. Preliminary plans illustrate the proposed expansion of water, sewer, drainage and utility facilities. The infrastructure plan also provides for vehicular (car, truck and bus) and non-vehicular (bicycle and pedestrian) circulation.

Figure 1-3 The Specific Plan provides for the establishment of conceptual design features for "MVF"
Corner of Hemlock Avenue and Davis Street

1.4 Existing Setting

1.4.1 Existing Land Use

"MVF" Specific Plan covers approximately **63.78 acres** in central Moreno Valley in Riverside County, California. The project is located between Heacock Street to the West; Indian Street to the East; State Highway 60 to the South; Ironwood Avenue to the North.

Figure 1-4 Surrounding Land Uses

Surrounding land uses include:
North: Single Family Residential.
South: SR-60, Commercial and a residential development.
East: Single Family Residential uses.
West: Retail Commercial development to the west including the northwest corner at Ironwood Ave and Heacock St. and on the southwest corner at Hemlock Ave and Heacock St.

1.4.2 Existing Fault Zones

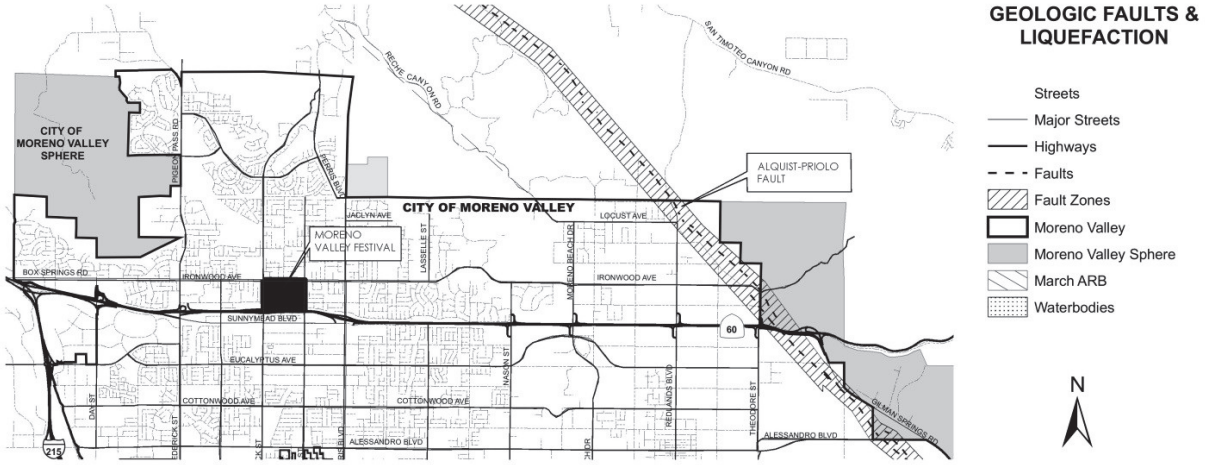


Figure 1-5 Existing Fault Zones

Based on the preliminary geotechnical studies conducted for "MVF" property ***Figure 1-5*** "Existing Fault Zones" illustrates the location of the Alquist-Priolo Fault Zone in relation to the site and shows where several concealed, inferred, and known faults are believed to exist. The Project Site is not in a fault zone.

Prior to the approval of all project-specific development proposals, detailed geotechnical investigation and analysis will be prepared and submitted to the City for review. The results of those studies will be incorporated into the detailed plans for each project.

2.2 "MVF" Land Use Designations

The "MVF" Specific Plan implements the development of a master-planned project specifically designed to support specified uses by incorporating landscape and architectural standards, project-wide criteria for streets, drainage, public infrastructure, lighting and signage, and project features responsive to the needs of the Moreno Valley community.

The Specific Plan includes a land use plan providing for the following land use designations: Mix of Uses Development (MU), Commercial/Retail Development (CR), Retail Mix of Uses (RMU) and Open Space (OS).

A Circulation Plan integrates a roadway network that moves cars and trucks into and through the "MVF" in a safe, efficient manner. An Infrastructure Plan is included that addresses the current status of local infrastructure services such as water, sewer, storm drain, and electricity and telephone/cable TV and outlines the backbone improvements necessary for these systems to serve the "MVF" project. Guidelines for landscaping and architectural design are included to ensure that a distinct consistent aesthetic theme is realized throughout the project.

The Plan also establishes an implementation program that defines the processes and procedures for the review and approval of project-specific development proposals, carrying out the purpose and intent of the Specific Plan. All of these elements function together in order to create a comprehensive development program which will help ensure that the "MVF" has a positive contribution to Moreno Valley.

Mix of Uses - (MU)

Various projects located within "MVF" for any or all of the areas I, II, III, VI, VII & VIII will have the potential to be developed as a Mix of Uses development.

The Mix of Uses development is a blend of one or more uses located in one planning area or within the MVF with the appropriate buffers and separations. Development of these areas will be in accordance with The Moreno Valley development standards per Title 9 of the Moreno Valley Municipal Code. These developments will be submitted to the City as part of a cohesive plan and may include commercial, retail, business park, office and medical and related uses, which will be individually developed as part of a cohesive integrated design.

Retail/ Mix of Uses - (RMU)

The projects along Hemlock Ave. will be characterized by retail/ commercial and related uses consistent with the existing development. This area shall comply with the City of Moreno Valley development standards and permitted uses.

The previous Specific Plan identified phases of the development, of which only the first phase was completed. This development occurred in the portion of the development identified as follows:

- A portion of area IV developed as commercial/retail
- Area VI developed as retail/restaurant
- Area VII developed as commercial/ retail

Some of the existing developed buildings are vacant and/or in need of renovation and repair. The existing retail area and signage within area VII will be redesigned per this plan. The specified areas can be developed in accordance with Title 9 Development Standards of the City of Moreno Valley Municipal Code, General Plan and according to this plan. Open Space - (OS)

The OS designation identifies approximately a **12.89 acre** area in the northeastern portion of the site. The OS designation is an existing City owned permanent, preserved, Open Space and detention basin for Storm Water Runoff. Any improvements to this space shall be initiated by the City. It is intended that the open space be undisturbed and used as a buffer to the residential and other development areas.

"MVF" Planning Areas

The below table illustrates the "approximate" overall land area for each "Planning Area" reflected in ***Figure 2-1 Land Plan Use***.

Planning Area I	Mix of Uses	+/- 7.36 acres
Planning Area II	Mix of Uses	+/- 3.84 acres
Planning Area III	Mix of Uses	+/- 9.81 acres
Planning Area IV	Retail/ Mix of Uses	+/- 13.92 acres
Planning Area V	Regional Detention Basin	+/- 12.89 acres
Planning Area VI	Retail/ Mix of Uses	+/- 6.08 acres
Planning Area VII	Retail/ Mix of Uses	+/- 6.44 acres
Planning Area VIII	Retail/ Mix of Uses	+/- 3.44 acres
Total Planning Areas		**+/- 63.78 acres**

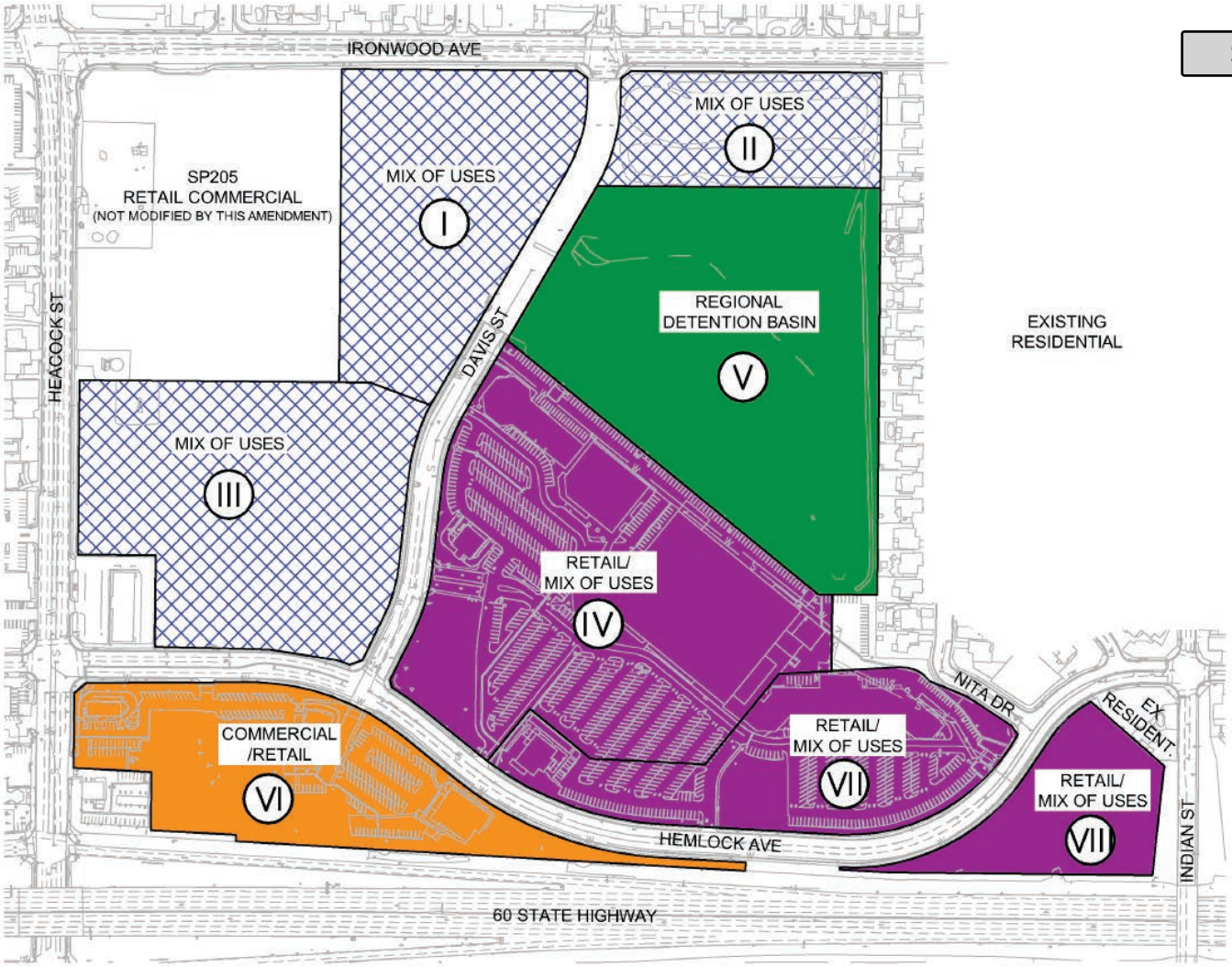


Figure 2-1 Land Use Plan

2.3 Approved Uses

Specific uses are identified in **Section 5.1.3.2** of this Specific Plan.

2.4 Special Edge Treatment Areas

The Specific Plan includes designated areas where special setbacks, facilities, grading and landscaping that creates special edge treatment areas between the "MVF" and adjacent, existing land uses. These edge areas are shown on ***Figure 4-2*** and detailed cross sections are shown in **Section 4.2.4.**

2.5 Proposed Land Use Plan

The Specific Plan includes a land use plan that will indicate the location and extent of permitted land uses and development within the geographic area governed by the Specific Plan Amendment. The Specific Plan Amendment facilitates the development of a master-planned project specifically designed to support specified uses by incorporating landscape and architectural standards, project-wide criteria for streets, drainage, public infrastructure, lighting and signage, and project features responsive to the needs of the Moreno Valley community. The Specific Plan Amendment and land use plan identifies the following land use designations described below and on the following pages:

Community Commercial (CC Zone) The primary purpose of the community commercial (CC) district is to incorporate development of general shopping needs of area residents and workers with a variety of business, retail, personal and related or similar services.

Office Commercial (OC Zone) The primary purpose of the office commercial (OC) district is to allow for the establishment of business, corporate and administrative office, as well as commercial services which are supportive to major business developments. Retail facilities which support the office developments are permitted, subject to limitations specified in this section.

Office (O Zone) The primary purpose of the office (O) district is to create areas for the establishment of park-like, office-based working environments for general business, corporate, professional and administrative offices. It is the further intent of the district to integrate setbacks, landscaping and architectural treatments that ensure the location of such uses is relatively compatible with residential development in the vicinity.

Light Industrial (LI Zone) The primary purpose of the light industrial (LI) district is to establish light manufacturing, light industrial, research and development, warehousing and distribution and multitenant industrial uses, as well as certain supporting administrative and professional offices and commercial uses on a limited basis. This district is intended as an area for light industrial uses that can meet high performance standards.

Business Park (BP Zone) The primary purpose of the business park (BP) district is to provide for light industrial, research and development, office-based firms and limited supportive commercial in an attractive and pleasant working environment and a prestigious location. This district is intended to provide a transition between residential and other sensitive uses and more intense uses.

Open Space (OS) The primary purposes of the open space (OS) district are to provide for low intensity, outdoor-oriented recreational facilities, preserve unique natural and environmentally sensitive areas, and protect and preserve the public health, safety and welfare.

3.1 INFRASTRUCTURE PLAN

The Infrastructure Plan serves as a guide for the development of detailed plans for roadways, domestic water, wastewater, storm water and utilities that will serve the Specific Plan area. The conceptual infrastructure plans generally identify the location of infrastructure facilities within the project. Subsequent subdivisions and site development plans will establish the exact size and location of all such facilities.

3.2 Circulation

The Circulation Plan dictates the standards and guidelines that ensure the safe and efficient movement of people and vehicles into and through the "MVF," addressing light trucks and passenger vehicles, heavy trucks, public transit, and non-vehicular circulation (pedestrians and bicycles). The Circulation Plan **Figure 3-1.2** includes new streets and the extension of existing streets.

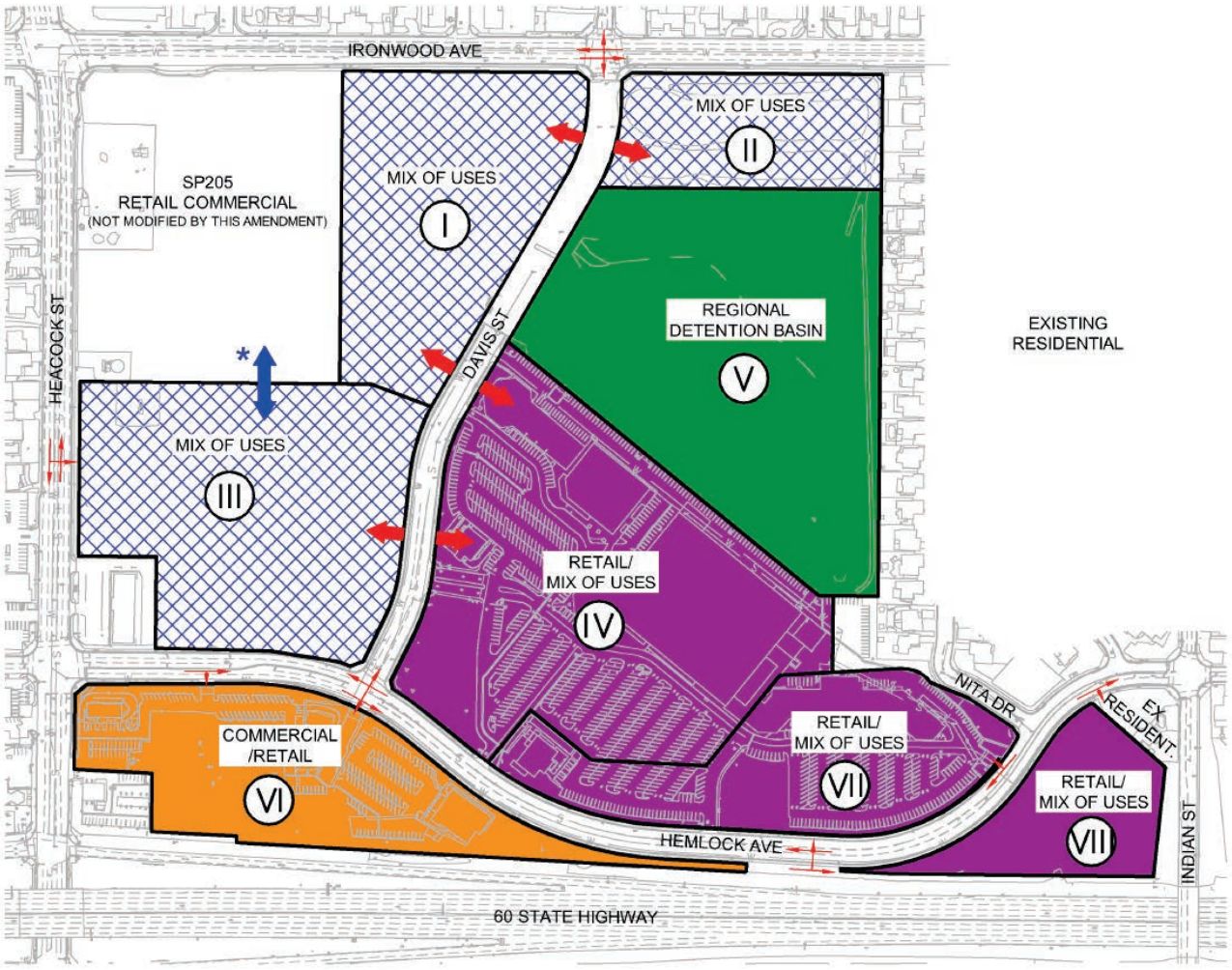


Figure 3-1.2 Circulation Plan

*Pedestrian and/ or vehicular access for the adjoining parcels will be determined in the future to ensure conformity and compatibility if the product type and uses create a mutually beneficial opportunity.

3.2.1 Traffic Analysis

Background

The proposed Specific Plan will review potential renovations to the approximately 200,000 square feet of existing retail and commercial land uses and the future development of the remaining land parcels. The trip generation for each alternative is provided with the highest trip generation scenario being analyzed for this site. The project site will have access to Ironwood Avenue from Davis Street, Hemlock Avenue from Davis Street, Heacock Avenue via Hemlock Avenue.

3.3 State Highway

State Route 60 (SR-60) parallels the Southerly border of the "MVF." An existing interchange is adjacent to the project and an off-ramp is located at Heacock Street. Heacock Street will be the primary connection to SR-60 for the "MVF."

3.4 Vehicular Circulation

3.4.1 Passenger Car and Truck Circulation

The "MVF" is designed to enhance easy vehicular access to the project via three main entry points around the site. "MVF" will be serviced by the existing roads with access from Heacock Street on the west (a City designated truck route) and Indian Street (a residential street) to the east via Hemlock Ave. To the north, the site is adjacent to Ironwood Ave (a City designated truck route) and will be accessed via Davis Street which will be continued from its proposed location on the previously approved Specific Plan. Access for cars and trucks is provided via the extension of Davis Street in the central portion of the project running North to South.

3.4.2 Street Designations

A network of arterial and collector streets serve the "MVF." Their primary function is to serve traffic within the project area, but some may augment regional connectivity through the project. Street sections within the project are shown on the following pages. Additional rights-of-way may be required for turn lanes. Turn lanes are provided in the median of all arterial streets, subject to City approval.

3.4.3 Mass Transit Circulation

All existing streets in the "MVF" are designed to accommodate bus service. Regional bus service in Western Riverside County is provided by the Riverside Transit Agency (RTA).

Route 11 currently circulates west to east along Hemlock Ave., and south to north to Perris Blvd with a stop at the corner of Perris Blvd. and Hemlock Ave. The bus then continues east to West along Ironwood Ave. This route is reversed for the return trip.

There are currently no stops within the area of the Specific Plan. RTA will determine if and when bus service will be modified. Facilities to support future bus stops to the project will be pursuant to RTA's "Design Guidelines for Bus

Transit" and will be incorporated, as needed, into street design in connection with site-specific development proposals. Covered shelters may be required if RTA plans a bus stop along the Specific Plan area. A standard design for shelters shall be reviewed and approved by RTA and the City prior to installation of the first shelter.

3.3.5 Emergency Access

An emergency vehicular access connection will be provided from "MVF" to public roads to the west. This connection will also be designed to accommodate pedestrian and bicycle use to facilitate non-vehicular circulation within the "MVF" project.

3.4 Non Vehicular Circulation

3.4.1 Pedestrian Circulation

The "MVF" incorporates a network of sidewalks on all project streets, as required to comply with ADA and other applicable codes, to connect all areas of the project to surrounding areas and to interconnect all buildings within the project. Details of these sidewalks will be reviewed and approved by the City in connection with subdivision and site development approvals.

3.4.2 Bicycle Circulation

Details of these facilities will be established with subdivision and site development approvals. Bikeways will be included only for the newly developed street improvement plans, if required, consistent with City requirements.

3.5 Utilities

3.5.1 Water

Eastern Municipal Water District (EMWD) provides water service to the "MVF," receiving its water from Metropolitan Water District (MWD) and local groundwater wells. Development of the proposed project site will have adequate water supply from Eastern Municipal Water District. There is an existing 16" A.C.P. water main along Hemlock Avenue, 16" PVC water main along Davis Street and 12" A.C.P. water main goes through the existing Festival development.

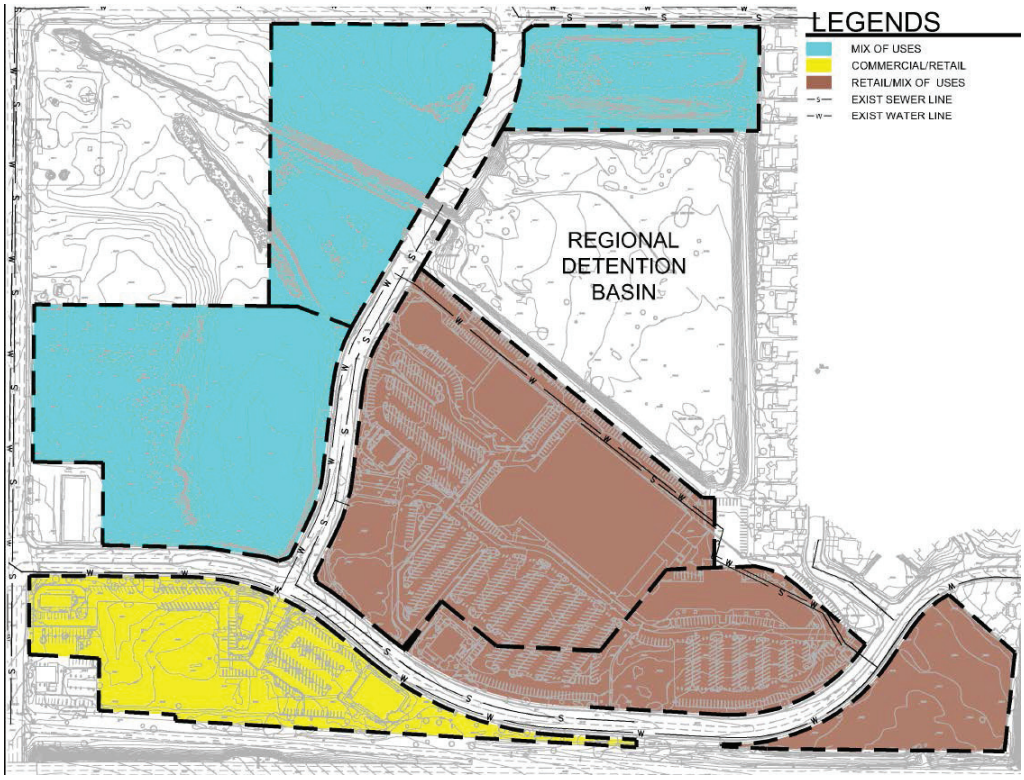


Figure 3-5.2 Water Service Site Plan for Development

3.5.2 Sewer

Eastern Municipal Water District (EMWD) provides wastewater service to the "MVF" area. Wastewater generated from the "MVF" area will be treated at EMWD's Moreno Valley Regional Water Reclamation Facility (MVRWRF). The MVRWRF, located in the southwestern portion of the City near Kitching Street and Mariposa Avenue, has the capacity to treat 16 million gallons per day (MGD) of wastewater, which will accommodate the needs of the "MVF" project. The primary trunk sewer line serving the "MVF" area is located in Heacock Street. This trunk sewer line continues in a southerly direction in Heacock Street and then east along Mariposa Avenue conveying wastewater to the MVRWRF.

3.5.3 Storm Drain

The "MVF" Specific Plan area is within the Middle and Lower San Jacinto River watershed which is part of the larger Santa Ana River watershed. The storm water runoff within the Sunnymead Drainage Area generally flows southeasterly and the subarea boundary ends at the Perris Valley Storm Drain.

The Riverside County Flood Control and Water Conservation District (RCFCWCD) is the responsible agency for the project area's regional flood control system. The Festival project is adjacent to the Indian Street Detention basin located near the eastern edge of the site. There are two 102" Storm Drain Line running along Ironwood Avenue and south on Davis Street which collects storm water north of Ironwood Avenue and discharges into the detention basin.

The detention basin outlet is conveyed by a 12' x 4.5' Reinforced Concrete Box that connects to Perris Storm Drain and discharges into Canyon Lake. The watershed drainage continues southwest to Lake Elsinore downstream and ultimately goes northwest to the Santa Ana River.

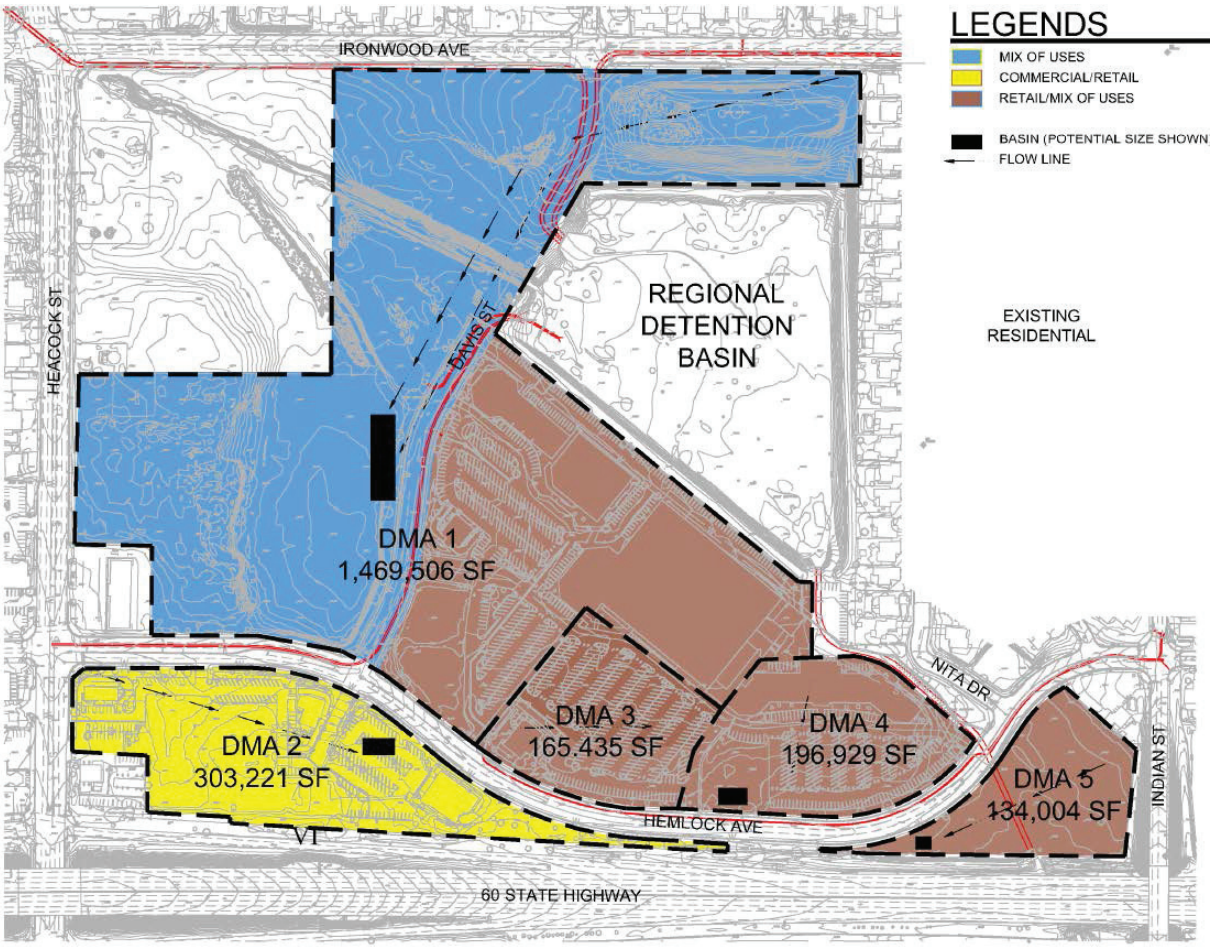


Figure 3-3 Storm Drain Plan

The Indian Street detention basin will not be part of the improvements. Additional site specific, storm drain improvements will need to be added for the project. A system of underground drainage lines and detention basins will convey the storm water runoff and manage the increased flow due to the proposed development. At each stage of development, the peak flows at downstream discharge points at the southerly project boundary will not exceed the peak flows for the existing condition.

Prior to approval of any subdivision or Plot Plan adjacent to Indian Street Detention Basin, a concept plan for the entire drainage feature shall be submitted to and approved by the City. The concept plan shall include proposed grading, improvements, landscaping, drainage facilities, signage, vehicular/pedestrian access, and any other proposed improvements. Site specific projects shall be consistent with this concept plan.

Based on the latest Flood Insurance Rate Map (FIRM) published by the Federal Emergency Management Agency (FEMA), the project site is not located within a 100-year floodplain.

3.5.4 Utility Conditions

Existing Electrical Service

Southern California Edison (SCE) is the electricity provider for the "MVF." SCE has an existing underground electrical service along Hemlock Avenue, Davis Street and Heacock Street. An electrical substation is located at the northeast corner of Heacock Avenue and Ironwood Avenue. The substation has an existing distribution of 2.63 Megawatt (MW) and queued generation of 0.21 MW. The projected load for Maxwell Substation is 100.4 MW. SCE has existing 12 kV and 115 kV overhead power lines on the north side of Ironwood Ave.

Existing Natural Gas

Southern California Gas Company (SCGC) is the natural gas provider for the "MVF."

Cable Television

Time Warner Cable currently provides cable television to the "MVF" and vicinity. Existing underground cable television facilities serve the residential area located along Nita Drive and Marigold Avenue. Underground facilities within Davis Street and Hemlock Avenue are in place. Overhead facilities are located along Ironwood Avenue on the north side of the street. Facilities for cable will be made available to all providers.

Proposed Cable and Telecommunications

As development proceeds, cable and telecommunications facilities located along Hemlock will be extended along Davis Street to serve the "MVF" project. These facilities will be underground and may be provided by a number of service franchises.

4.1 OFF-SITE DESIGN STANDARDS

These standards shall apply to those portions of the "MVF" property that are not within development sites; this includes common areas, open space, public areas, streetscapes, etc.

4.2 Off-site Architecture

4.2.1 Objectives

Off-site architecture includes buildings that house infrastructure or public use facilities that serve the "MVF." The architectural design should express the character of the proposed development in a manner that is consistent and enduring with the theme of the development. In order to establish a clear, unified image throughout the "MVF," these structures shall follow the guidelines set forth in Section 5.0 of this Specific Plan. These support buildings shall be designed to align with the "MVF" design guidelines and sense of place.

4.2.2 Ground-mounted Equipment

See Title 9 of the City Municipal code.

4.2.3 Roof-mounted Equipment

See Title 9 of the City Municipal Code.

4.2 Off-Site Landscaping Requirements

The following general criteria will apply to landscaping provided by the Master developer as well as landscaping provided by the individual project developers. The Project Design Guidelines section of this Design Manual offers more detailed information for individual project developers.

- See Title 9 of the City Municipal code.
- All landscape designs shall adhere to the concept depicted in the Landscape exhibits (**Figures 4-2 and 4-3).**

4.2.1 Objectives

A landscape concept has been developed for the "MVF" that will reinforce patterns established by the land use plan to create an identity for the entire project. Various landscape design elements selected for the streetscapes, entries and buffers will be integrated to complement the sense of cohesiveness throughout the development. The primary objectives of the landscape concept plan are as follows:

- Reinforce circulation patterns, entryways, landmarks, and focal points;
- Enhance views and provide meaningful view corridors within the site;
- Foster a buffer between existing residential neighborhoods and other proposed uses;
- Create unity throughout the project by coordinating and limiting the variety of plant and hardscape materials;
- Promote a pleasant, distinctive neighborhood environment; and
- Implement water conservation through the use of drought-tolerant, low water use plant materials and water efficient irrigation systems.
- Adhere to Title 9 of the City Municipal Code.

The landscaping design concept is focused towards:

- Providing a clean visual appearance
- Coordinating the landscaping treatment along State Highway, and surface streets to compliment the circulation system
- Coordinating streetscapes within the "MVF" to unify its general appearance
- Ensuring off-site landscaping design continuity among individual development sites within the "MVF," and
- Minimize long term maintenance.

The following guidelines present parameters for general landscape design, water conservation, and streetscapes. On-site landscaping guidelines are addressed in Section 5.4 of this Specific Plan. See Title 9 of the City Municipal Code for specific Moreno Valley requirements.

4.2.2 Water Conservation Measures

The "MVF" employs an aggressive approach to water conservation. Every element of the landscape program has been evaluated to determine how to achieve the project's landscape goals while maintaining maximum water efficiency. From the formulation of the overall landscape concept, through each level of the design process, to the day-to-day maintenance practices of the installed materials, conservation of limited water resources is a primary focus. At maturity, the landscaping for the "MVF" project will sustain a strong, clean, simple design element, demonstrating the "MVF" commitment to the creation of a sustainable environment.

The landscape program will incorporate the following design elements and practices to minimize the use of limited water resources:

Project Design:

- Design project so that pads, streets and other paved areas drain to landscape areas, medians and parkways.
- Maximize water harvesting, detention and treatment techniques throughout the project.
- Direct rooftop and parking area runoff to bio-swales, basins or landscaped areas.

Landscape Design:

- Develop watershed areas for the project areas in order to manage water harvesting and distribution.
- Calculate estimated runoff from roofs and paved areas to manage water harvesting and detention practices.
- Conduct site-specific analyses of seasonal weather patterns, rain patterns, soils and drainage, grades and slopes, macro and micro climates, solar exposure, prevailing wind conditions, historical evapotranspiration rates and weather station (CIMIS) data.
- Design to meet peak moisture demand of all plant materials within design zones and avoid flow rates that exceed infiltration rate of soil.
- Maximize the use of drought tolerant plant species.

- Select plant palettes tolerant of periodic inundation from storm water runoff.
- Calculate optimum spacing of plants to avoid overcrowding and need for excessive irrigation.

Construction:

- Grade all planting areas to control high intensity rainfall and runoff episodes. Provide riprap at downspouts; create multiple watersheds to disperse water flow. Use surface mulch and straw wattles.
- Provide soil amendment to plant pits based on soil laboratory test results and landscape species;
- Employ a pre-hydration program prior to planting installation to reflect climate and soil conditions.
- Cover all planting areas with a combination of organic and inorganic mulches to be used along with pre-emergent herbicide treatment to control weed growth and soil erosion.
- Install soil moisture sensors in strategic planting zones.
- Require certification that the irrigation system was installed and operates as designed, and conduct a post-installation audit of actual water consumption.
- Provide for supplemental irrigation on an as-needed basis, such as supply lines and valves, quick-connect couplers or water truck service.

Maintenance:

- Establish maintenance guidelines to specify actions to replace dead plants, replenish surface mulch, and remove trash and weeds.
- Regularly monitor all landscaped areas and make adjustments as necessary to assure the health of planted materials and progress toward meeting the project's landscape goals.

Where irrigation is provided:

- Planting zones will be coordinated according to plant type, climatic exposure, soil condition and slope to facilitate use of zoned irrigation systems using reclaimed water systems if available and practical.
- Use best available irrigation technology to maximize efficient use of water, including moisture sensors, multi-program electronic timers, rain shutoff devices, remote control valves, drip systems, backflow preventers, pressure reducing valves and precipitation-rated sprinkler heads,
- Gate values will isolate and shut down mainline breaks,
- Design irrigation systems to prevent discharge onto non-landscaped areas or adjacent properties,
- Restrict irrigation cycles to operate at night when wind, evaporation and activity are at a minimum.

Coverage:

At installation, plant size, density and spacing shall be as specified in approved landscape plans per Title 9 of the City Municipal Code.

All landscape plans shall be reviewed by Eastern Municipal Water District and the City of Moreno Valley.

4.2.3 Streetscapes

Landscaping along public streets is designed to provide a uniform appearance along street frontages, to reinforce the street hierarchy, and to establish identities of place, particularly at intersections within "MVF."

Implementation of the street landscaping will be executed by the developer during the initial stages of development. Trees will be planted along all existing streets within The "MVF" project boundaries, where they do not currently exist. In addition, landscape guidelines have been provided for those streets adjacent to the project's boundaries that will require improvements associated with the development. Low growing plant materials will be added for year-round color and textural interest. Mounded turf and landscaped berms will be used where appropriate to screen undesirable views, such as parking lots.

The design guidelines in this section identify landscape themes for the following streets:

- Hemlock Avenue
- Davis Street
- Heacock Street
- Ironwood Avenue

Most of the Hemlock Avenue and Heacock Street landscape themes already exist in place; the intent of the guidelines is maintain the general overall approach for the existing themes. Locations of illustrative street sections are indicated on the Landscape Concept Plan **Figure 4-2 and Figures 4-4 thru 4-22** for individual plans and sections.

4.2.3.1 General Design Criteria

All landscape design and maintenance within the "MVF" shall comply with the Landscape and Water Efficiency Requirements contained in the Municipal Code and these guidelines, whichever imposes a higher design or performance standard.

1. Trees are required along all street frontages. Trees shall be planted in a single row at spacing of 40 feet on center (Municipal Code Ord. 786 § 2, 2009), according to the criteria for streetscapes given in the following sections.
2. All street trees within street right of way, unless otherwise noted, are to be 24" box size, with a minimum of 8 feet of brown trunk measured from finish grade. Trees in other areas shall be 15 gallon minimum in size but 25% shall be minimum 24" box.
3. Landscaping berms along street frontages may be utilized. Maximum slopes may not exceed 2:1. City maintained areas shall not exceed 3:1.
4. Shrubs along street frontages are to be utilized where possible. (Minimum size at installation is 1 gallon.)

4.2.4 Special Edge Treatment Areas

There are six discrete edge treatment plans in and around the project. The areas are indicated below:

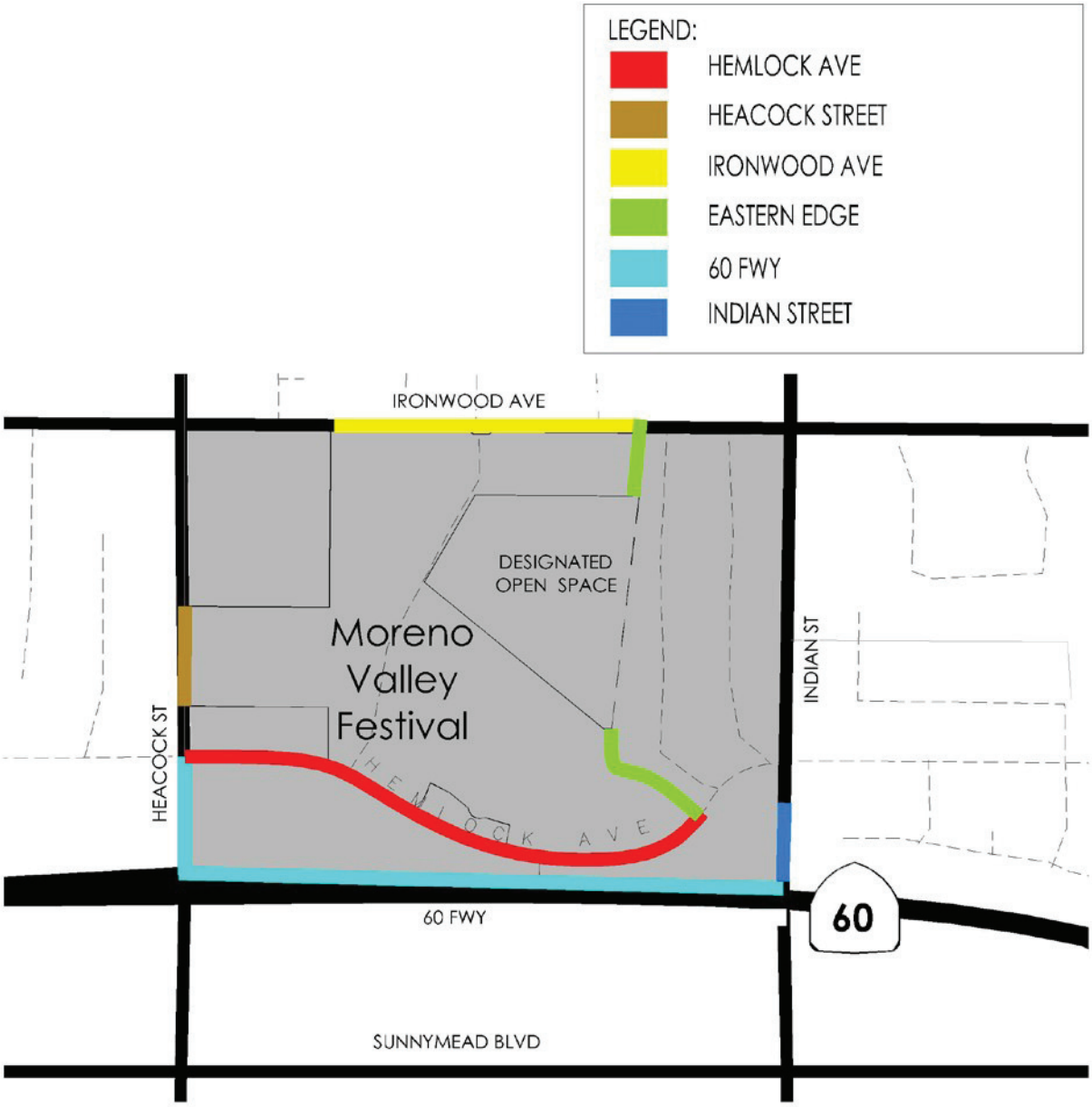


Figure 4-1 Specific Edge Treatment Areas Design Criteria

Figure 4-2 Special Edge Treatment Map (key map for following exhibits)

EVERGREEN COLUMNAR TREES

PINUS CANARIENSIS	CANARY ISLAND PINE
TRISTANIA CONFERTA	BRISBANE BOX

EVERGREEN CANOPY TREES

RHUS LANCEA	AFRICAN SUMAC
SCHINUS MOLLE	CALIFORNIA PEPPER
QUERCUS ILEX	HOLLY OAK

STREET TREES

THE FOLLOWING TREES ARE BEING PROPOSED FOR EACH INDIVIDUAL STREET. ALL TREES SHALL BE SPACED AT 30'-0" O.C. 15 GAL. & 24" BOX SIZES

*** HEMLOCK AVENUE**	
KOELREUTERIA PANICULATA	GOLDEN RAIN TREE
*** HEACOCK STREET**	
PINUS CANARIENSIS	CANARY ISLAND PINE
*** IRONWOOD AVENUE**	
PLATANUS ACERIFOLIA	LONDON PLANE TREE
*** DAVIS STREET**	
TRISTANIA CONFERTA	BRISBANE BOX
JACARANDA MIMOSIFOLIA	JACARANDA TREE
*** INDIAN STREET**	
MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA

ENTRY ACCENT TREES

BAUHINIA VARIEGATA	PURPLE ORCHID TREE
CERCIDIUM 'DESERT MUSEUM'	PALO VERDE TREE
WASHINGTONIA ROBUSTA	MEXICAN FAN PALM
LAGERSTROEMIA INDICA	CRAPE MYRTLE

FLOWERING ACCENT TREES

CERCIS OCCIDENTALIS	WESTERN REDBUD
RHAPHIOLEPIS 'MAJESTIC BEAUTY' - STANDARD TRUNK	INDIAN HAWTHORN
LAGERSTROEMIA INDICA	CRAPE MYRTLE
ACACIA BAILEYANA	BAILEY ACACIA

SKYLINE TREES

PINUS HALEPENSIS	ALEPPO PINE
GLEDITSIA TRIACANTHOS	HONEY LOCUST
TRISTANIA CONFERTA	BRISBANE BOX

LARGE SCALE TREES

ALBIZIA JULIBRISSIN	MIMOSA
JACARANDA MIMOSIFOLIA	JACARANDA
PINUS HALEPENSIS	ALEPPO PINE
SCHINUS MOLLE	CALIFORNIA PEPPER
QUERCUS ILEX	HOLLY OAK
PLATANUS RACEMOSA	CALIFORNIA SYCAMORE

Figure 4-3 Plant Legend used in Figure 4-2 and exhibits

4.2.4.1 Hemlock Avenue Edge

The landscape concept for Hemlock Avenue, between Heacock Street and Davis Street, will serve to reinforce its role as the primary entryway to the "MVF." Due to Hemlock Avenue's proximity to Highway 60, it will make available the most direct access for regional users.

A well-defined street tree pattern has been selected for Hemlock Avenue to identify it as the primary entryway. Large, evergreen canopy trees will be planted in a single row on both sides of Hemlock Avenue within the public street right-of-way. The dense tree canopies will frame the entry and provide consistent form and color throughout the year. This will be reinforced by a formal planting of flowering shrubs. A Crape Myrtle accent tree will be introduced for added color.

The following landscape design guidelines are developed for Hemlock Avenue, between Heacock Street and Davis Street:

Street Parkway Planting

- Trees will be planted on each side of the street within the 12 foot parkway.
- All trees shall be planted at least 10 feet from sidewalks and driveways.
- A minimum of 25 feet shall be allowed from any street intersection or street lighting standard, and shall defer to line of sight requirements for distance from intersection per Public Works Standard No. 125 and 126). (Ord. 786 § 2, 2009).
- A 5 foot wide sidewalk will be contiguous with the curb on both sides of the street.
- The remaining 27 feet will feature drought-tolerant groundcovers followed by a formal, double row of shrubs.

When viewed from Hemlock Avenue, the retail center will have updated facades that will complement enhance this retail part of Hemlock Ave. Most of the existing landscape is slated to remain intact and monument signage will be added at the entry to the retail center.

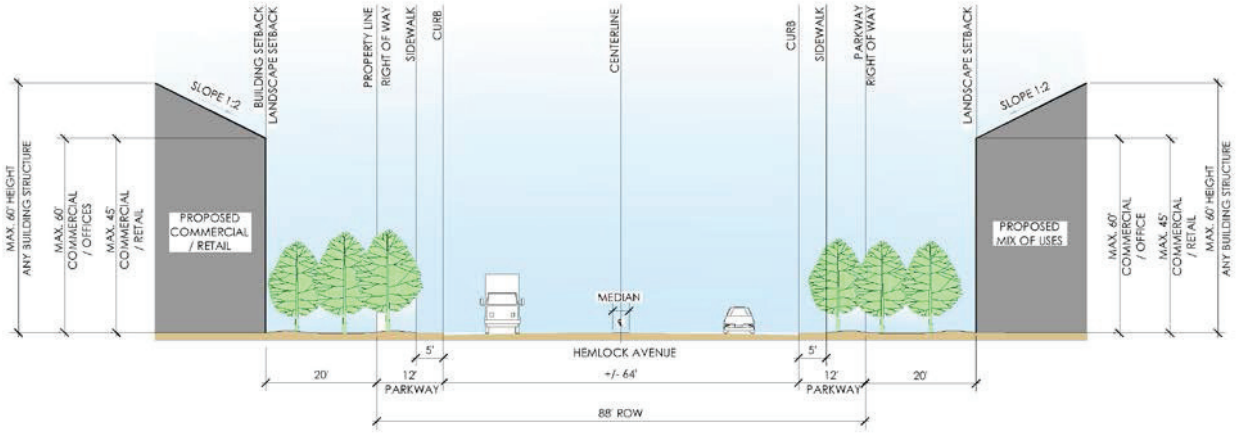


Figure 4-4 Hemlock Avenue Section A

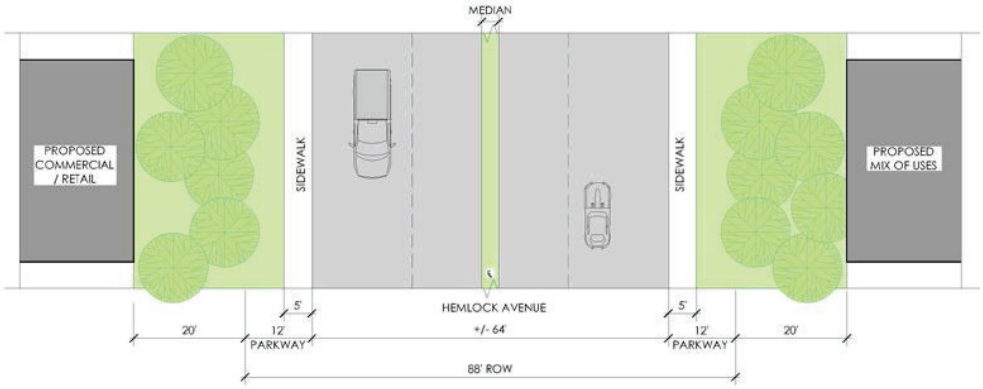


Figure 4-5 Hemlock Avenue Plan A

4.2.4.2 Davis Street and Hemlock Avenue Edge

Davis Street and Hemlock Avenue are the project's two interior streets and will share the same landscape theme. Informal tree groupings will define the roadways while allowing for critical views into individual projects. Round canopy trees combined with high branching trees shall be strategically placed in order to maintain view corridors. Bermed drought-tolerant groundcovers will be used wherever possible in combination with an informal shrub hedge to screen out views of parking lots. The following landscape design guidelines have been developed for Davis Street and Hemlock Avenue between Davis Street and Indian Ave.

Street Parkway Planting

- A combination of informal street trees and small accent trees will be planted within the 11 foot parkway and 15 foot landscape setback (20 Foot building set back shall be provided for industrial use). A flowering tree species will serve as an accent along Hemlock Avenue and Davis Street. Trees shall be planted in a random pattern at a minimum spacing of 20 feet on center.
- All trees shall be planted at least 10 feet from sidewalks and driveways, and a minimum of 25 feet from any street intersection. Landscape shall defer to line of sight requirements for distance from intersection per Public Works Standard No. 125 and 126). (Ord. 786 § 2, 2009).
- A 5 foot wide sidewalk will be contiguous with the curb on both sides of the streets.
- A curvilinear band of drought-tolerant groundcover will occur adjacent to the sidewalk, followed by low, informal shrub masses.

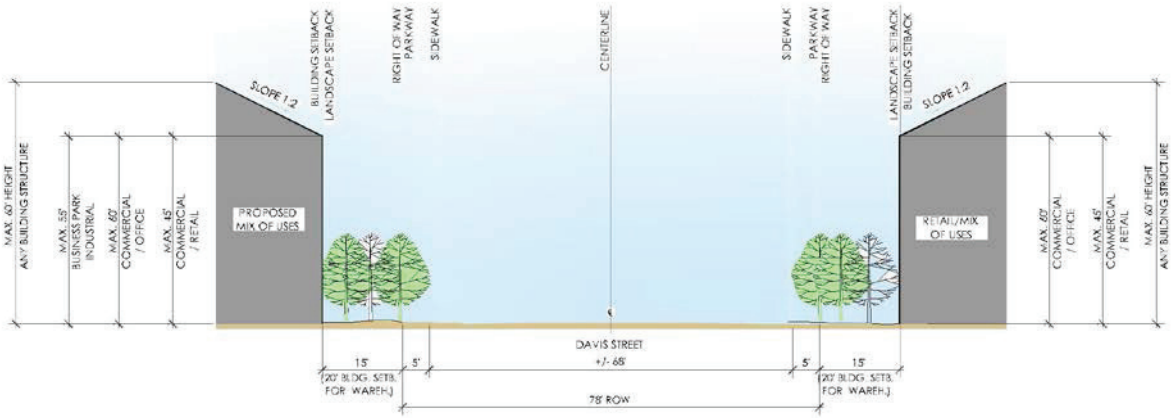


Figure 4-6 Hemlock Avenue and Davis Street Section B

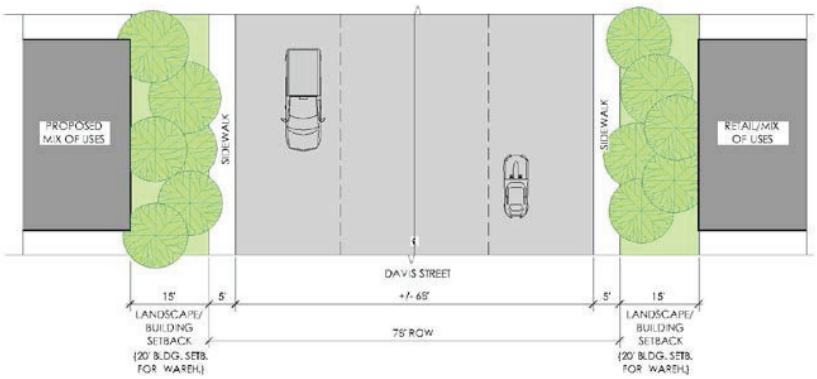


Figure 4-7 Hemlock Avenue and Davis Street Plan B

A deviation from the previously described landscape concept will occur where Davis Street parallels the western boundary of the **detention basin**. Along this edge, the landscape setback will be reduced to 5 feet. The sidewalk will be contiguous with the curb, and the same tree types will be featured. Informal shrub masses will also be used to define the groundcover edge and serve as a transition between the groundcover areas and slope planting.
Refer to Figure 4-8 and Figure 4-9

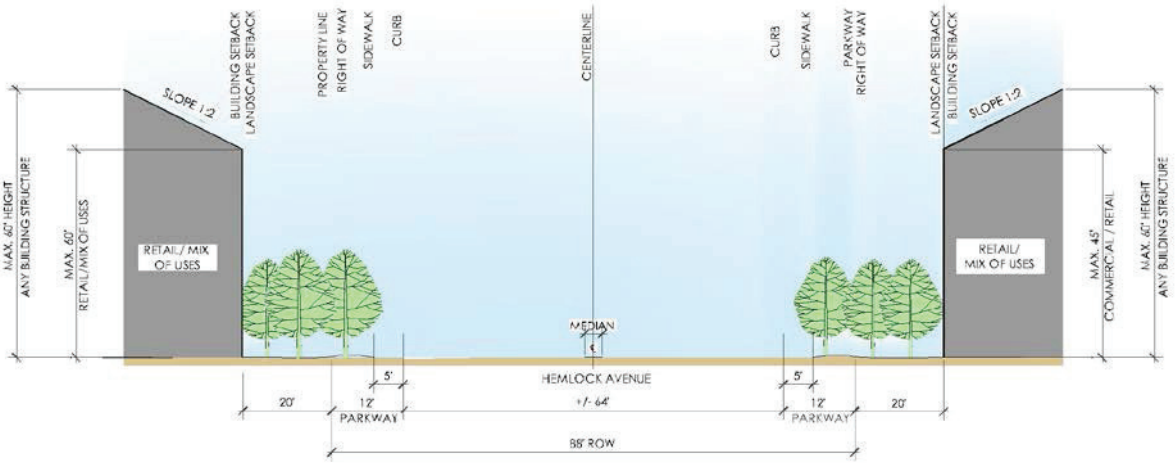


Figure 4-8 Hemlock Avenue at Institutional Section L

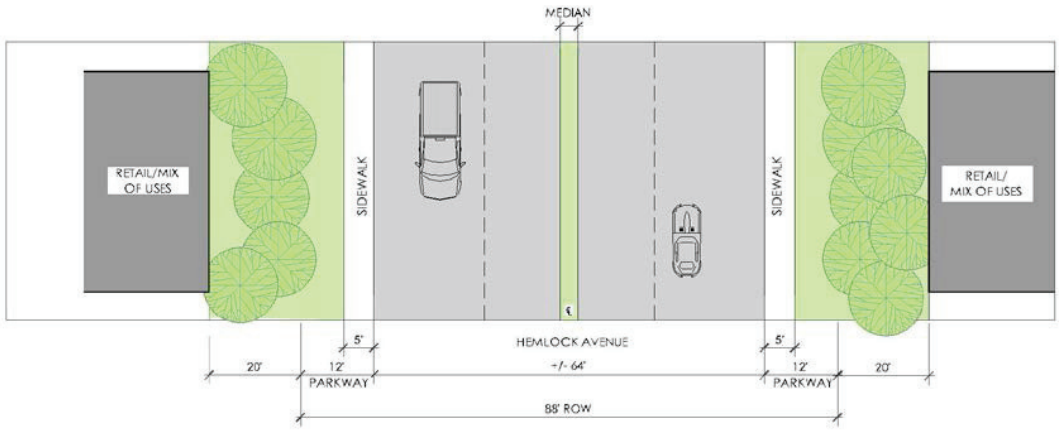


Figure 4-9 Hemlock Avenue at Institutional Plan L

4.2.4.3 Heacock Street Edge (at Mix of Uses area)

Heacock Street forms the western boundary of the project site and is a major arterial leading from the State Highway into the City's commercial district. The landscape theme will be formal to emphasize this important entry to the business community. Large trees will be planted in a single row with drought-tolerant groundcover below. Berming, in combination with a formal shrub mass, will be used to screen out views of parking lots.

Street Parkway Planting

- Trees will be planted on the east side of the street within the 10 foot parkway, and will be planted in a single row at a spacing of 40 feet on center.
- A 5 foot wide contiguous sidewalk will parallel the street right-of-way. The remaining 20 feet will feature bermed drought-tolerant groundcovers followed by a double row of shrubs.
- Slopes must not exceed a 4:1 slope ratio within the City right-of-way, and shall not exceed a 3:1 slope ratio within the landscape setback, per Moreno Valley Public Works Landscape Design Guidelines.

4.2.4.4 Heacock Street Edge

When viewed from Heacock Avenue, the existing retail component is set back from the property line per the prescribed Moreno Valley standards. A combination of the existing landscape buffer and the new landscape on the east side of the street, where the special edge treatment is required ***(See figure 4-1)*** to complement the existing use for this traffic corridor.

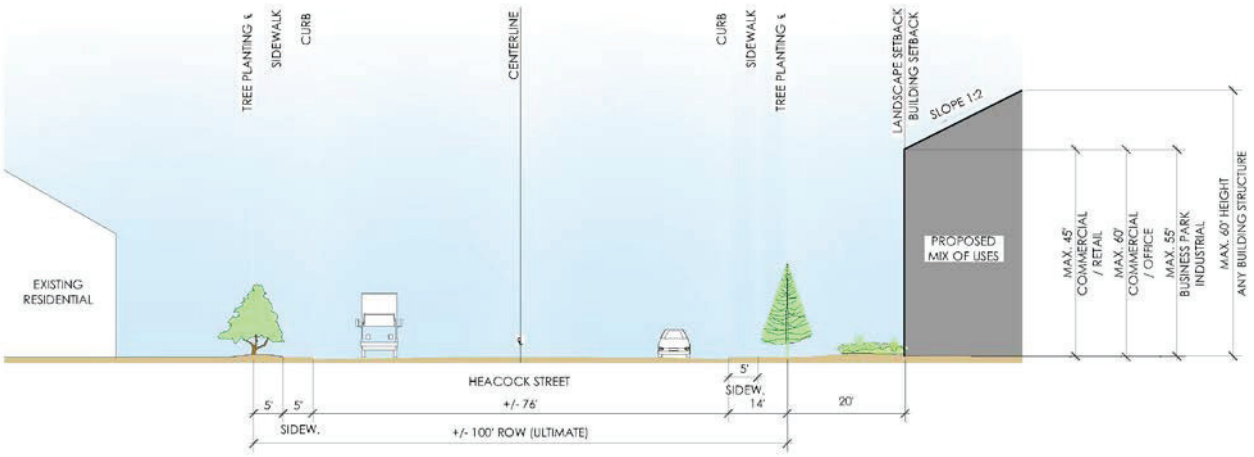


Figure 4-10 Heacock Street Section D

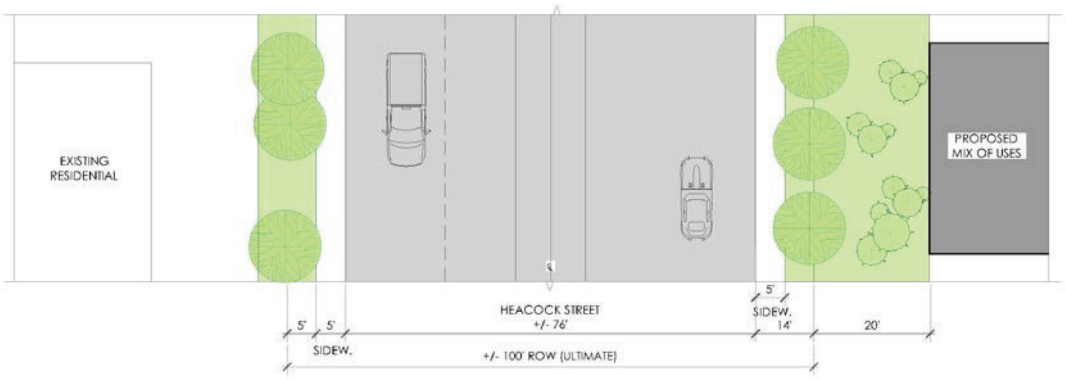


Figure 4-11 Heacock Street Plan D

4.2.4.5 Ironwood Avenue Edge

Ironwood Avenue forms the northern boundary of the development and will create access for residents in neighborhoods surrounding the project site. Landscaping will be designed to provide an aesthetic buffer between adjacent residential uses and commercial development. A landscape setback will feature an informal tree pattern and drought-tolerant groundcovers, bordered by low shrub masses. Tall canopy and skyline trees will be combined to form a buffer along the street frontage. Emergency access, landscaping, drainage facilities, and property maintenance access are permitted in this area. The following landscape design guidelines have been developed for Ironwood Avenue:

Street Parkway Planting

- The south side of the street will feature a 13 foot parkway with a 20 foot landscape setback. A single row of trees will be planted 5 feet from the back of walk at a spacing of 35 feet on center. Trees shall be a minimum 24-inch box size, and when planted, shall have a minimum of 8 feet of brown trunk measured from finish grade.
- All trees, other than street trees, shall be a minimum of 15 gallon size.
- Trees will be planted within the remaining 33 feet of landscaped area, where grade permits. Trees shall be planted at a minimum spacing of 20 feet on center.
- Screening trees will be added within the parkway in key areas.
- All trees shall be planted at least 10 feet from sidewalks and driveways, and 25 feet from any street intersection or street lighting standard. Plants and shrubs within the intersection sight distance cannot exceed 30" above the top of curb, per Moreno Valley Public Works Department Section 1 Street Improvements, Standard Design Guidelines on sight distance.
- A 5 foot wide sidewalk contiguous with the curb will parallel the street right-of-way.
- A curvilinear band of drought-tolerant groundcover will occur adjacent to the sidewalk, where grade permits, followed by a low, informal shrub mass.
- A slope will occur within the setback if necessary, but shall not exceed a 3:1 ratio and shall be more gradual where possible. Slopes will be planted with drought-tolerant shrubs and groundcovers. The requirements shall meet Moreno Valley public works landscape design guidelines.

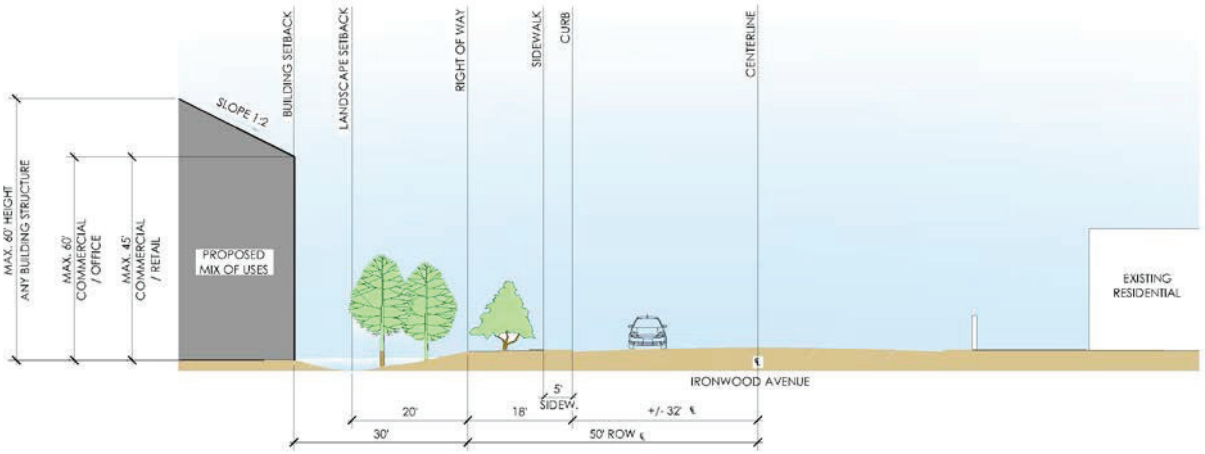


Figure 4-12 Ironwood Avenue Section E

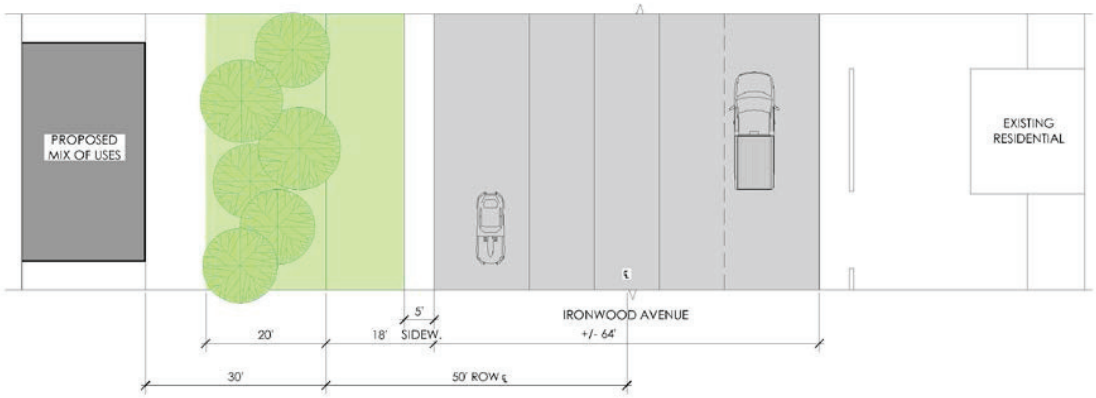


Figure 4-13 Ironwood Avenue Plan E

4.2.4.4 Detention Basin Edge

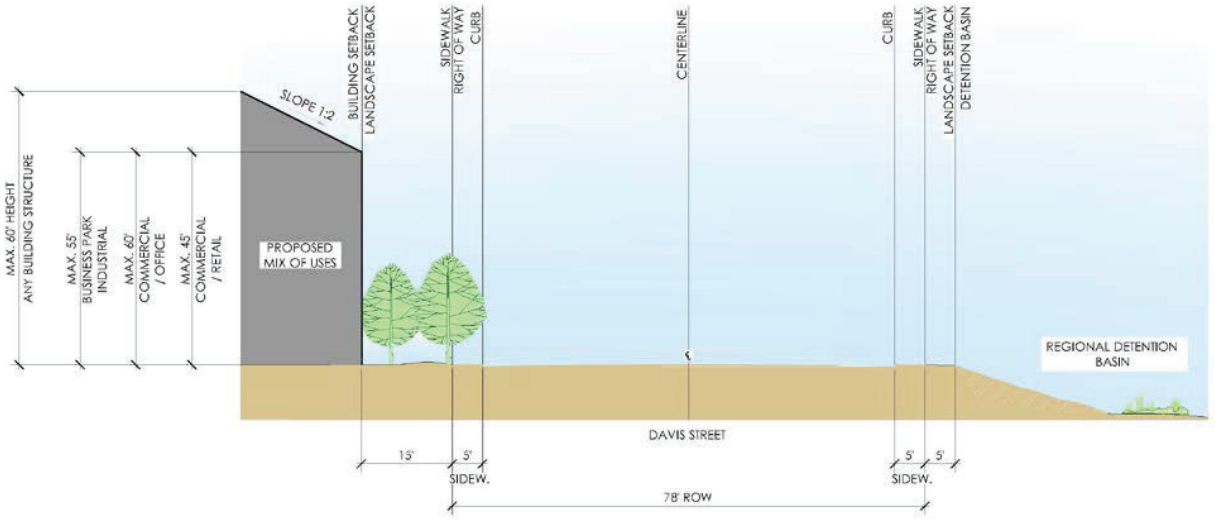


Figure 4-14 Davis Street Section C (at detention basin)

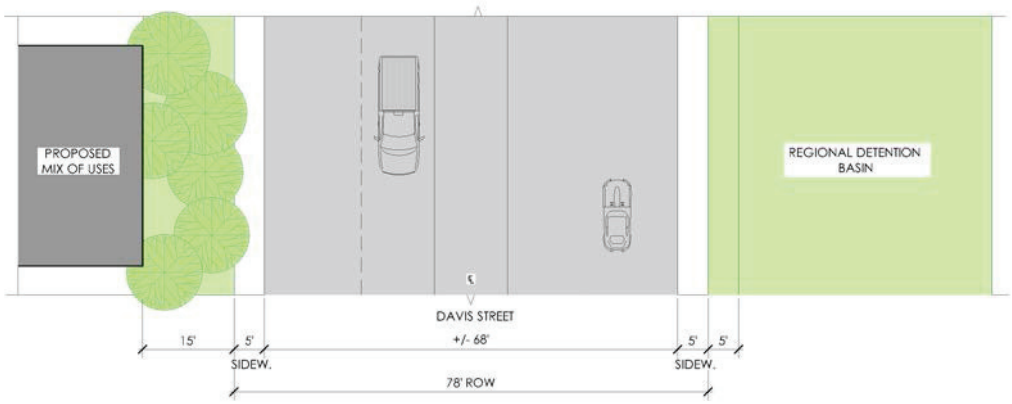


Figure 4-15 Davis Street Plan C (at detention basin)

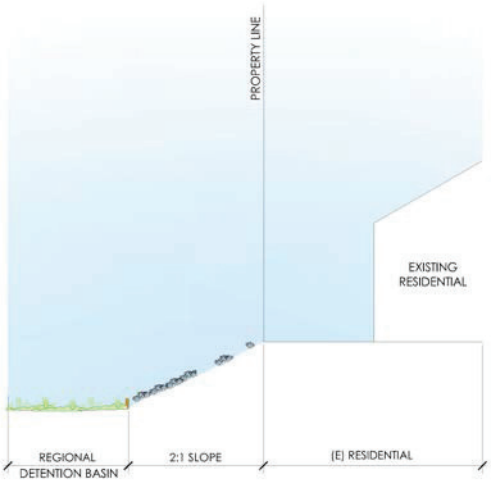


Figure 4-16A Detention Basin Section F

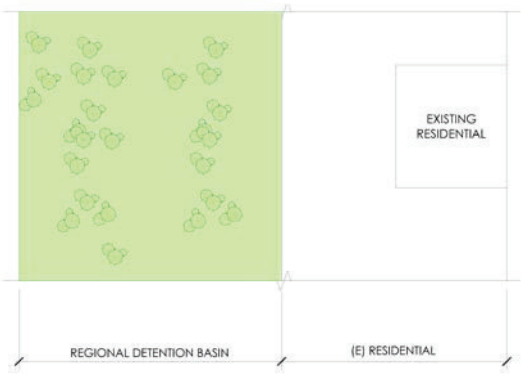


Figure 4-16B Detention Basin Plan F

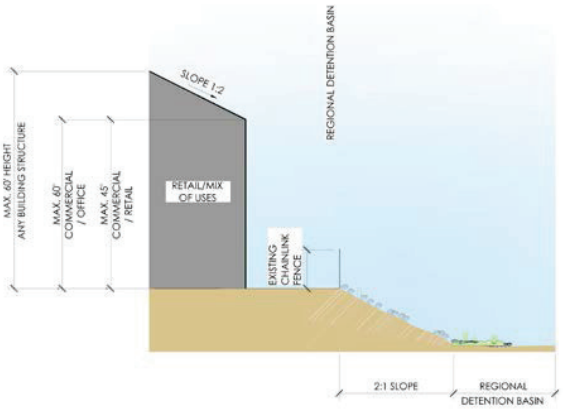


Figure 4-17A Detention Basin Section H

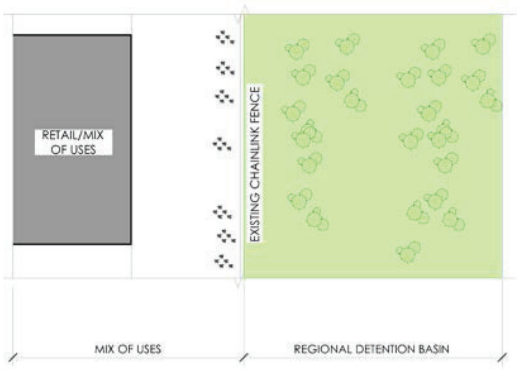


Figure 4-17B Detention Basin Plan H

Slope planting

Drought-tolerant groundcovers, shrubs and grasses will be planted on the slopes for erosion control and to be consistent with the overall planting design.

60 State Highway Edge

When viewed from State Highway 60, there is existing retail and restaurants and the proposed option for a retail automotive component will be set back from the property line per the prescribed Moreno Valley standards. A combination of the existing landscape buffer and the proposed layout for the project will fit in and complement the existing use for this traffic corridor.

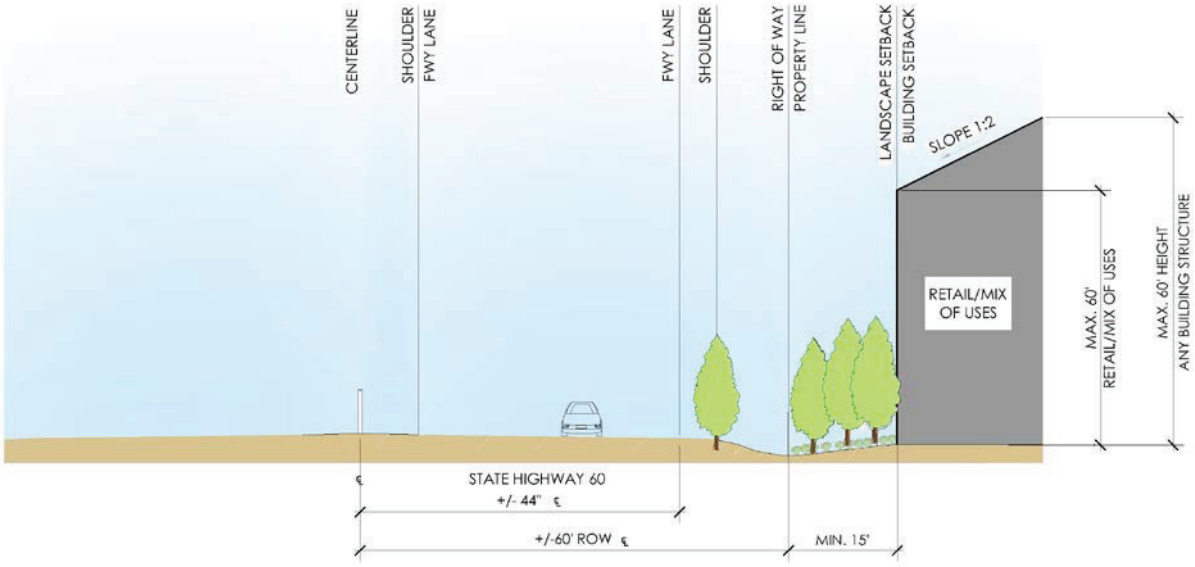


Figure 4-18 State Highway 60 Edge Section G

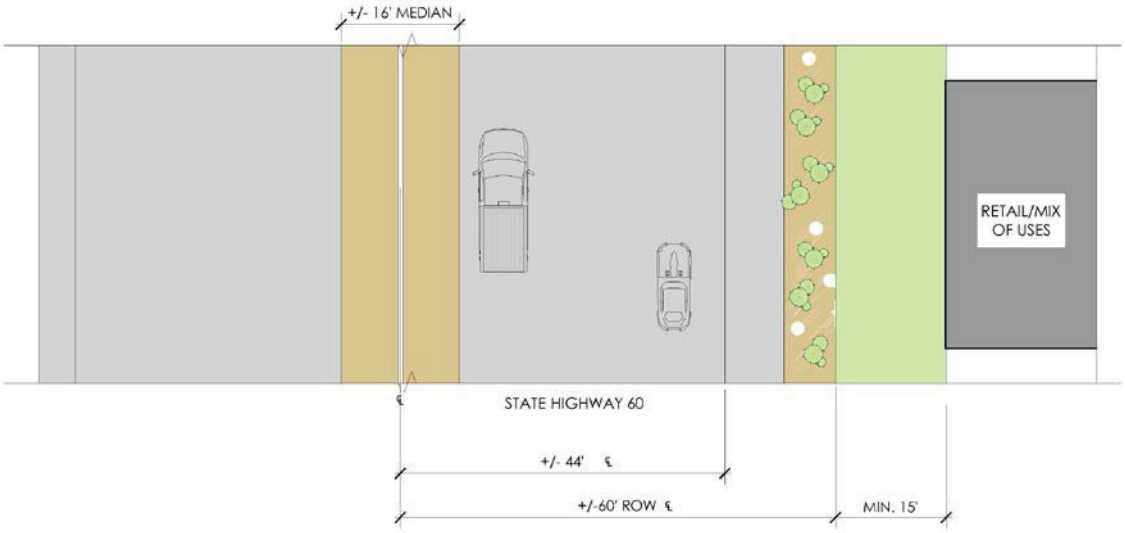


Figure 4-19 State Highway 60 Edge Plan G

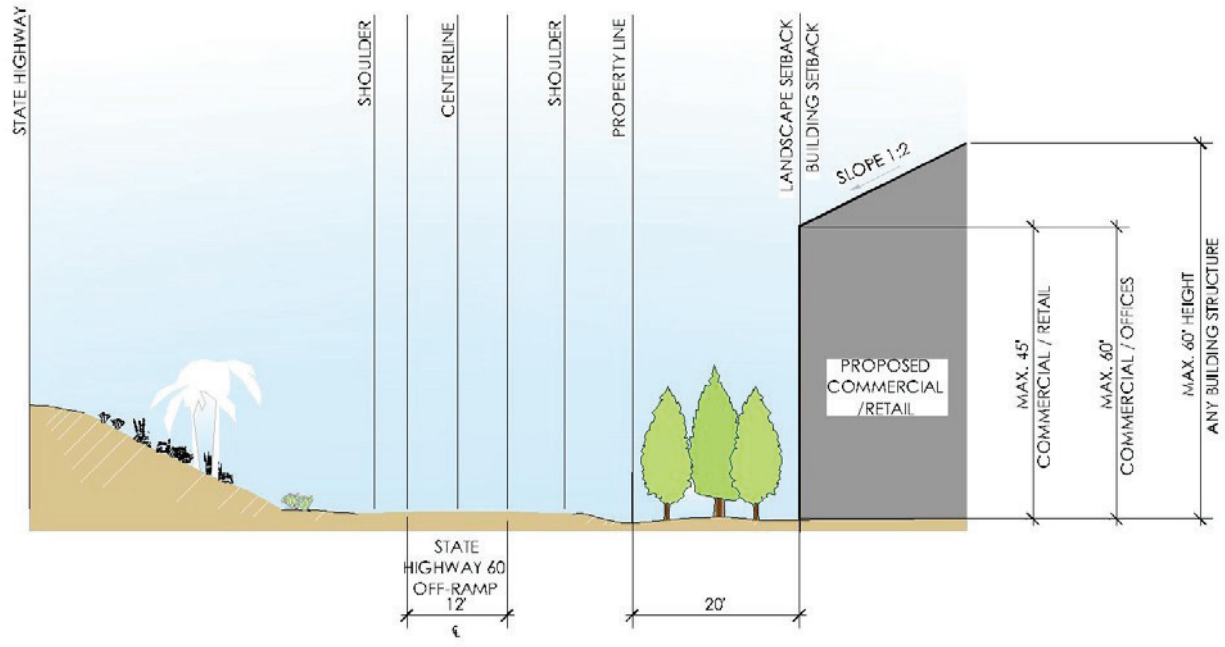


Figure 4-20 State Highway Off-ramp 60 Edge Section J

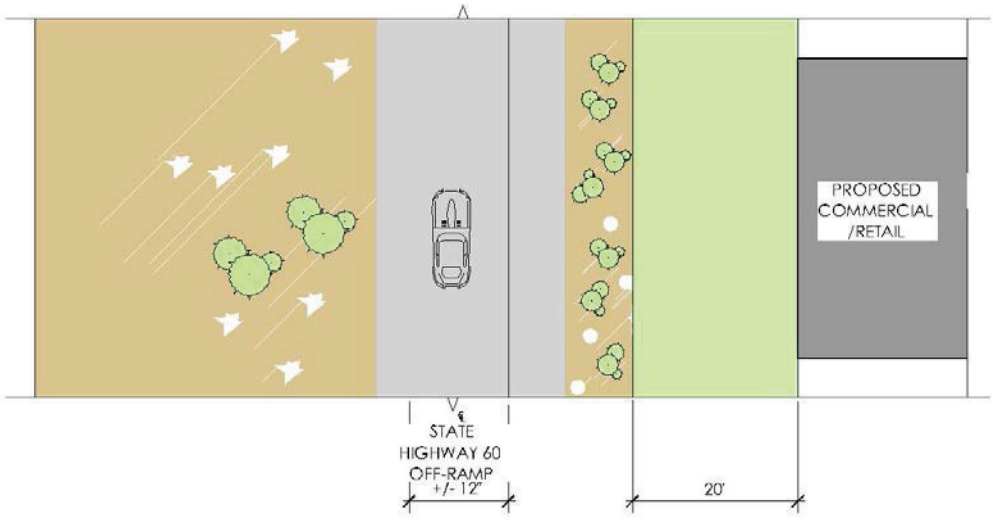


Figure 4-21 State Highway Off-ramp 60 Edge Plan J

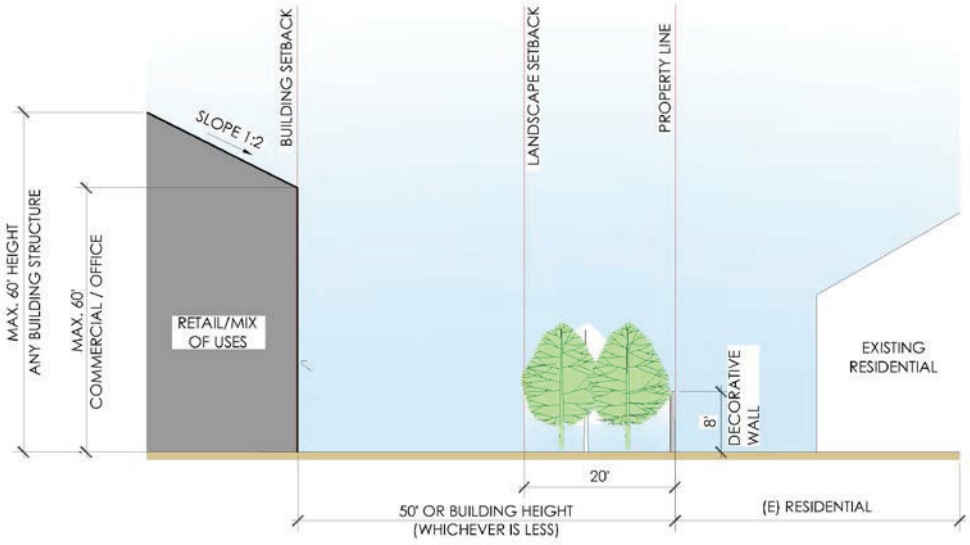


Figure 4-22 Eastern Edge - Section K

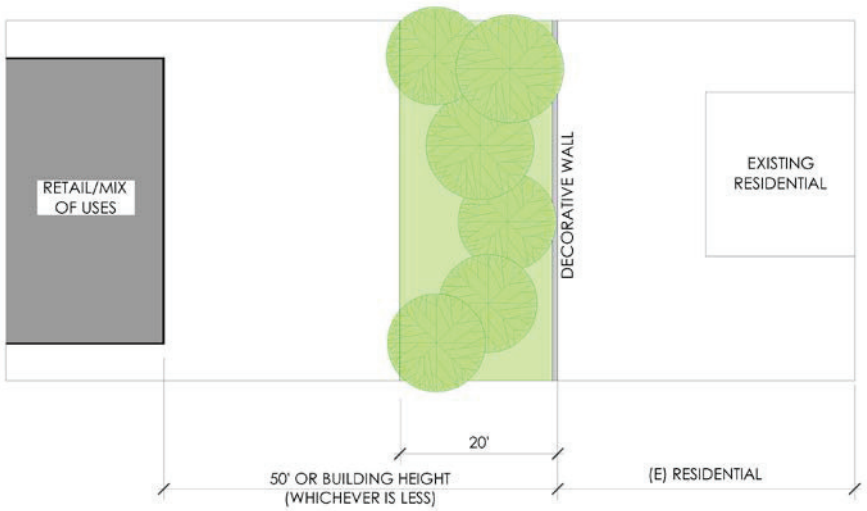


Figure 4-23 Eastern Edge - Plan K

4.2.5 Screening Criteria for Interior Roadways

All roadways interior to the Mix of Uses shall be lined with sidewalks, landscaping, and setbacks from the street as prescribed by the City of Moreno Valley planning standards and elaborated in this specific plan.

4.2.6 Entry Theme

Entrances to the "MVF" shall be enhanced with landscaping, project monument signage and hardscape features. The landscape design will utilize plant materials and planting techniques that require a low to moderate amount of maintenance. The plant palette for the entries is composed of landscape materials with characteristics that accent year-round attractiveness and seasonal interest.

The landscape concept for The "MVF" shall be introduced through the entry treatments. Medium accent trees combined with low evergreen and flowering accent shrubs will be incorporated consistently throughout the project entries. The foreground will feature a combination of ground cover and annual color.

The entry signage and elements shall be visually clear to vehicular and pedestrian users, and shall allow the use of digital signage subject that it meets the City of Moreno's requirements.

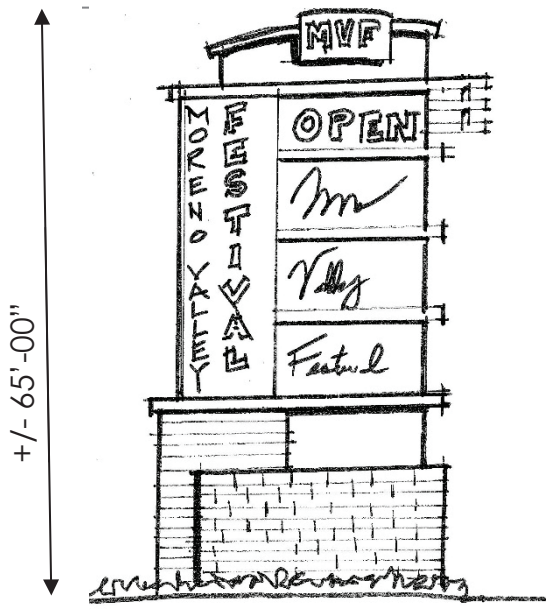


Figure 4-24 Entry Concept

Primary Entry - Heacock Street & Hemlock Avenue

The primary entry statement will be located at the Heacock Street/Hemlock Avenue intersection. The following design elements will be included on the southeast corner:

- A project monument sign constructed of concrete with a sandblasted finish.

- Signage will incorporate the project's name, logo and "festival" theme flags.
- Planting will consist of drought-tolerant shrubs, groundcovers and trees designed to be consistent with the overall theme of the project.
- An 8 foot wide sidewalk will be contiguous at the street corners. Accent lighting will be provided to illuminate the wall and landscaping.

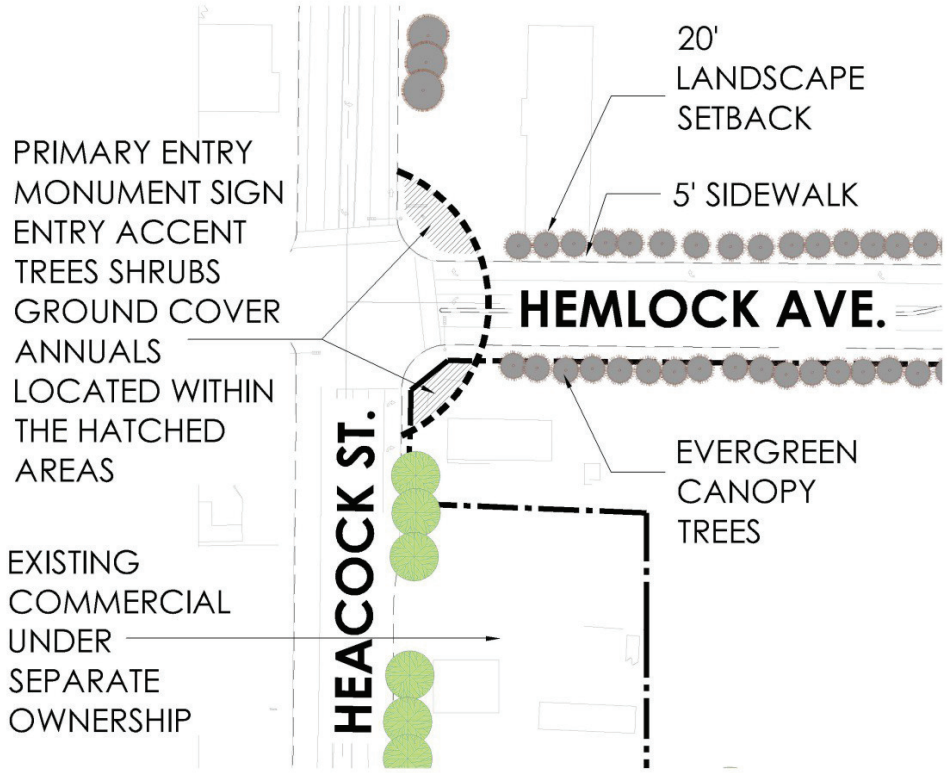


Figure 4-25 Entry Plan

Secondary Entry - Hemlock Avenue & Davis Street

The project's secondary entry statement will be located on the northwest and northeast corners of the Hemlock Avenue/Davis Street intersection. The entry will be designed to create a sense of arrival and serve as a landmark for the development. The design for the intersection's corners will follow the same guidelines as described for the Heacock Street/Hemlock Avenue entry with the following exceptions:

- The project monument sign will be located on the northeast corner in combination with two architectural towers.
- Evergreen accent trees will be planted behind the monument wall.

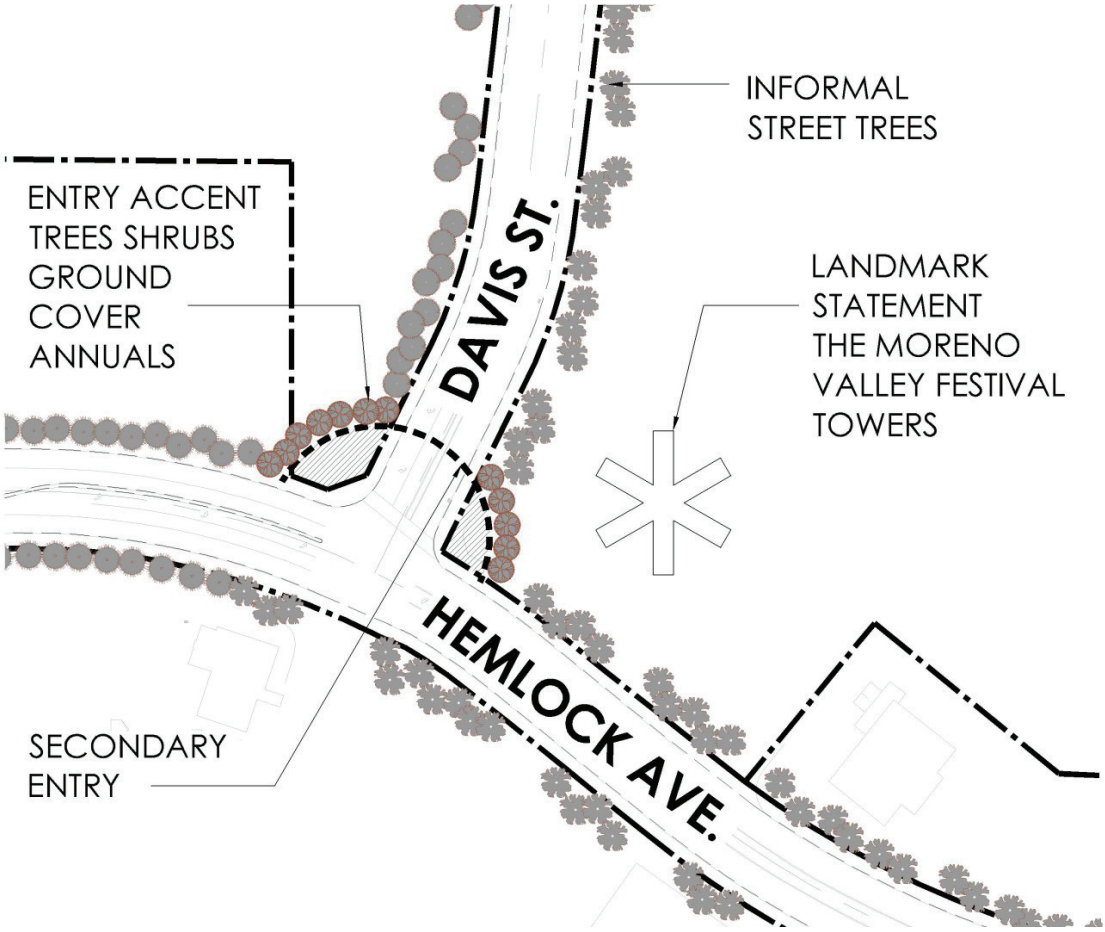


Figure 4-26 Secondary Entry Plan

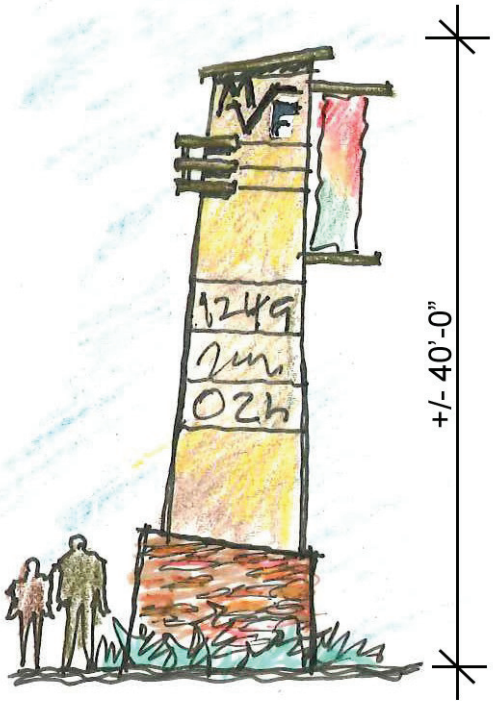


Figure 4-27 Tower Element

Tower Element

• The architectural towers will serve as a "landmark" and incorporate the following details:

- *Brick/Stone masonry tapered bases*
- *Main tower body built of metal framing with stucco finish*
- *Hanging multi-colored banners*
- *Metal bandings (bronze colors) accentuating tower heights and supporting flag pole*

Minor Entries - Ironwood Avenue & Davis Street

The project entries at Davis Street/Ironwood Avenue and Nita Drive & Hemlock Avenue will feature similar design elements as described for the Heacock Street/Hemlock Avenue entry.

Variations in the entry treatments for the individual corners are as follows:

Ironwood Avenue / Davis Street

- The project monument signs with complementary landscaping will be located on both the southeast and southwest corners of the intersection, per 7.1 Entry Monument Signage, and Municipal Code, Chapter 9.09.206 Monument signage.
- The plant palette will consist of drought-tolerant groundcovers and shrubs consistent with the overall project theme.
- Flowering accent trees will be planted behind the monument walls.

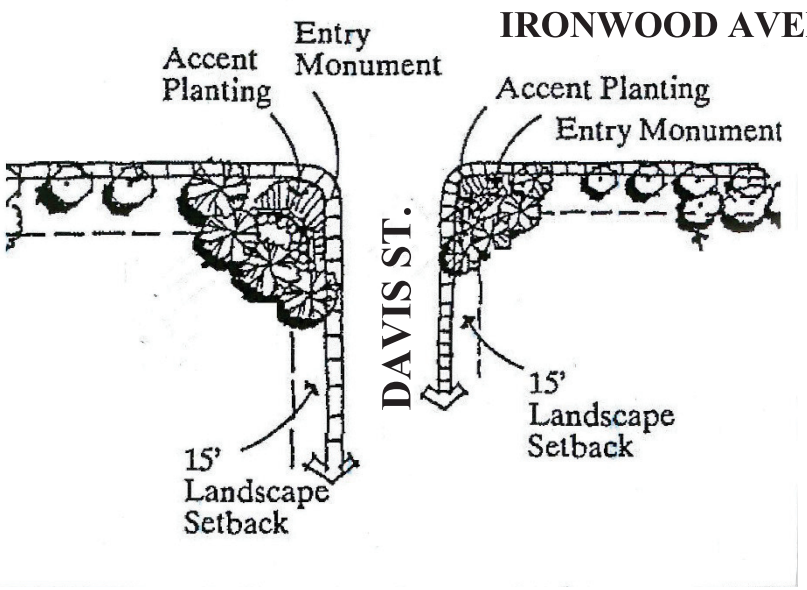


Figure 4-28 Minor Entries

Nita Drive/Hemlock Avenue

- The entry statement, located on the northwest corner, will feature a project monument sign and landscaping.
- The project monument sign will employ single concrete panel, oriented out towards the intersection.
- A plant palette consisting of drought-tolerant groundcovers and shrubs in concert with the overall project theme.
- Flowering accent trees will be planted behind the wall.

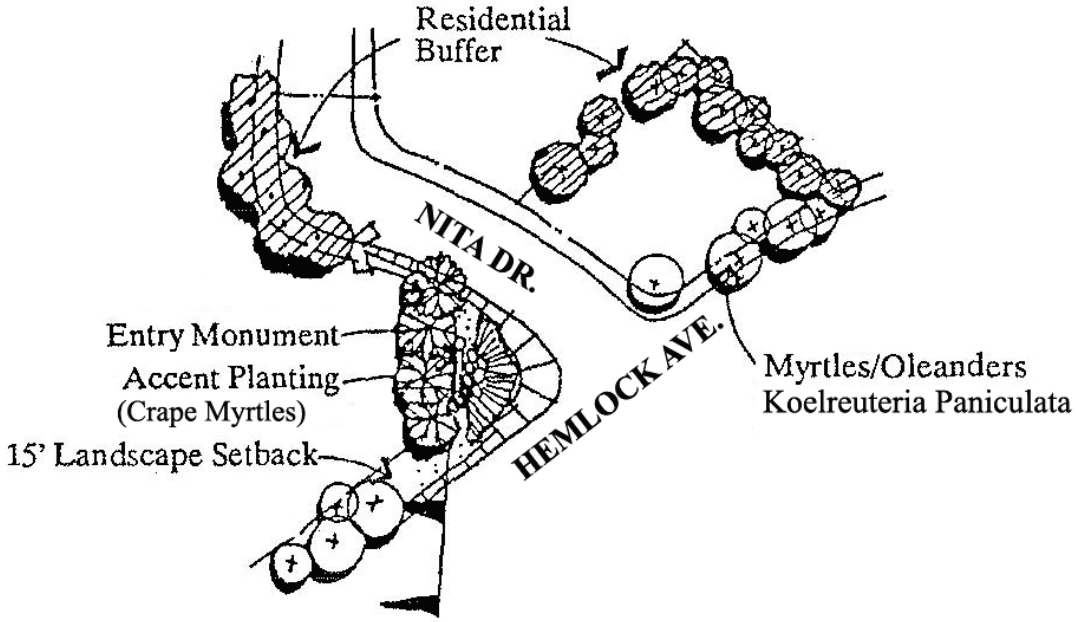


Figure 4-28 Nita Drive & Hemlock Ave

Buffers

A landscape buffer system is required along the eastern, southern, and northern boundaries of the project site and will be implemented by the master developer. The following guidelines identify the buffer system treatments:

When Mix of Uses, commercial, retail or business park uses are adjacent to developed residential areas, landscape buffers and WQMP basins are recommended to be present as buffers for potentially incompatible uses. Refer to sample cross section exhibits below for guidelines.

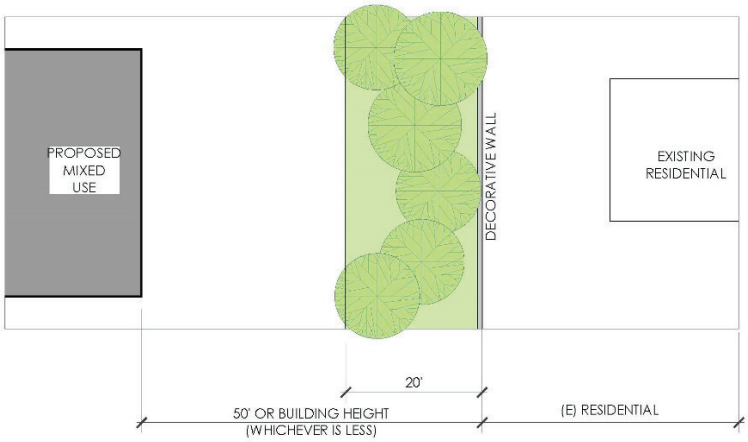


Figure 4-29 Buffers at Incompatible Residential Uses

Residential Buffer

The existing wood fence along the residential edge will be replaced with an 8-foot-high decorative wall to provide visual and acoustical buffering. This is only applicable where existing residential areas meet with the Mix of Use areas.

Detention Basin

The detention basin will be preserved as an open space, serving as a flood control facility and visual open space for adjacent residents and tenants. Implementation and final design of all landscape treatments and fencing will occur as permitted by the Riverside County Flood Control and Water Conservation District and the parks department requirements.

The basin is structured to function as a bio-detention basin, and the City will undertake actions to plant drought tolerant grasses and wildflowers to supply year-round dust control and seasonal color.

4.2.7 Off-site Maintenance

The City is responsible for the public streets (curb-to-curb), sidewalks, and trails and they will continue to be maintained by the City.

Parkways, slopes, private drainage facilities, and common areas will be maintained by property owners.

4.3 Off-site Lighting

4.3.1 Objectives

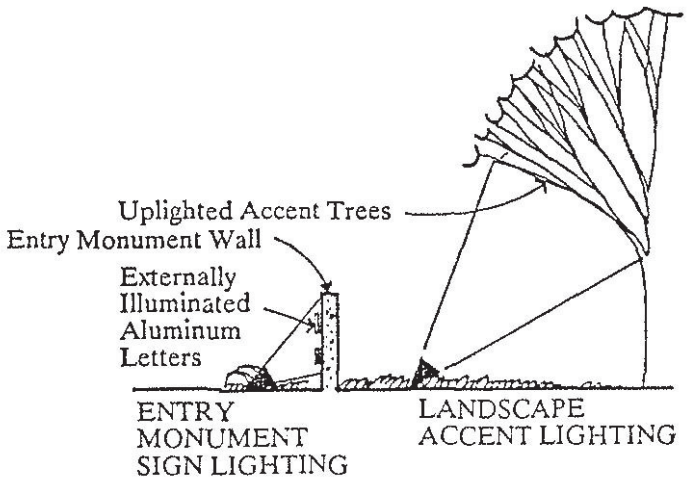
Exterior lighting is to be arranged to enhance the safety and security of motorists, pedestrians and cyclists.

- A night time character that reinforces the image of "MVF" as a quality business location created by strategic lighting.
- Lighting is an important element contributing to the identity and unity of the "MVF."
- To reinforce identity and unity, all exterior lighting is to be consistent in height, spacing, color and type of fixture throughout the building site and compatible throughout The "MVF."
- Street lighting on public streets shall meet the requirements of the City Standard Plans.

The master developer will be responsible for installation of light fixtures during the project's next development phase. Street lights per City standards will be installed on all public roads according to the City's recommendations where they do not already exist.

The following guidelines apply to the three types of specialty lighting provided by the master developer:

- Ground level direct burial lighting will be positioned to luminate entry monuments.
- Landscape accent lighting will be from ground level fixtures concealed in the landscaping. Dramatic up-lighting will be created by means of this illumination for the project entries.
- Tower accent lighting will be provided in the five towers. Translucent fabric at the top of the towers will be up-lighted.



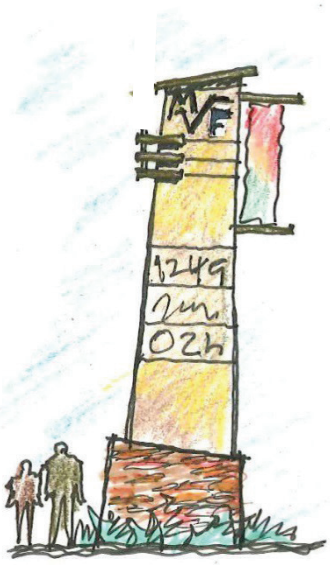


Figure 4-30 Tower, Landscape and Monument Signage

4.4 Off-site Utilities

4.4.1 Telephone, CATV and Similar Service Wires and Cables

All telephone, CATV and similar service wires and cables shall be installed underground.

4.4.2 Electrical Transmission Lines

Electrical transmission lines less than 66kV shall be installed underground.

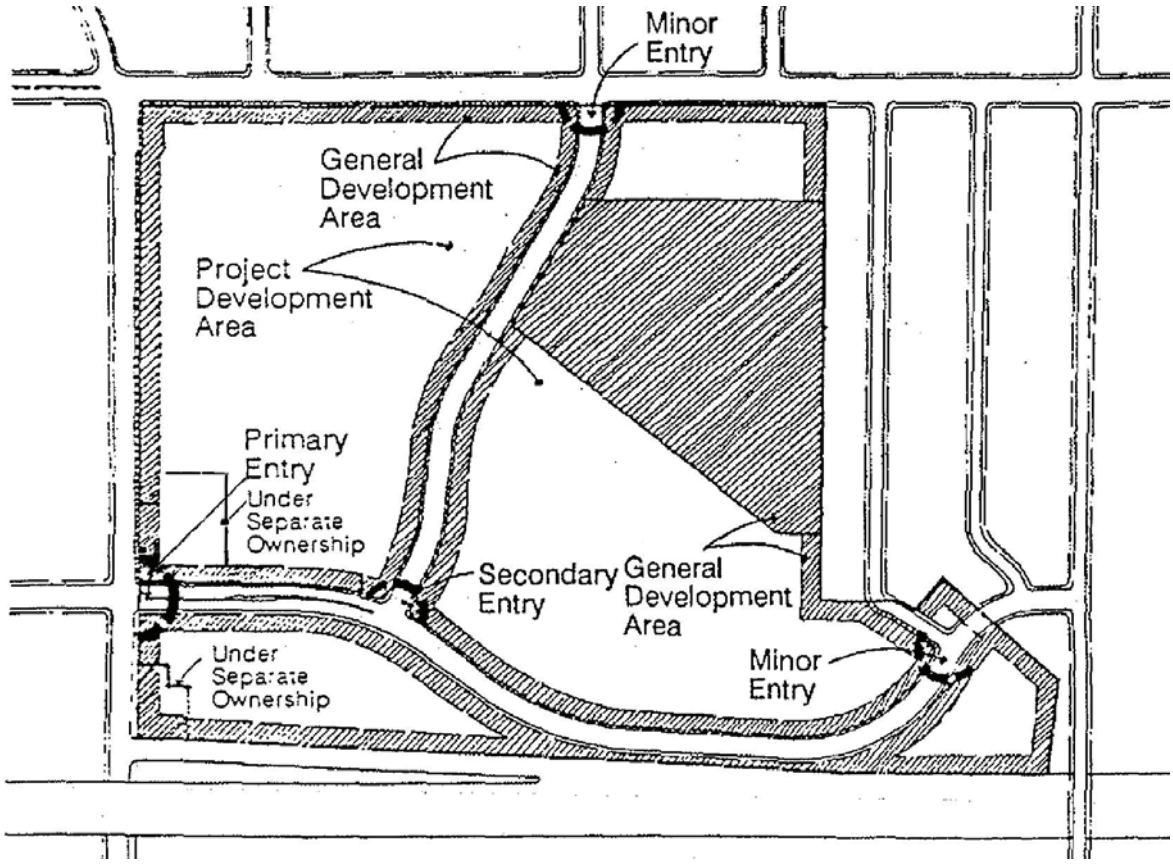
5.1 ON-SITE DESIGN STANDARDS

5.2 On-site Design Standards and Guidelines

The general Development Guidelines describe features that facilitate implementation by the master developer. In order to manage the orderly and consistent development of the "MVF," the following design standards and guidelines will be applied to all development in the Specific Plan area.

5.2.1 Design Standards

These Design Standards and Guidelines serve to foster an eco-friendly, high-quality development and establish a distinctive character for the "MVF" project. In reviewing development proposals, these guidelines will be the primary tools used to evaluate proposed site design, architecture, landscaping, and other project features such as lighting and site amenities. The developer is responsible for implementation of street improvements and utility systems as well as landscaping, signage and lighting as addressed in the following guidelines and consistent with the existing infrastructure. The areas of responsibility of the master developer are indicated on the sketch below. Improvements for those areas identified on the sketch as being under separate ownership, will be implemented by the respective property owners in association with their projects.



Note: Parcels under separate ownership are not a part of the specific plan

Figure 5-1 General Development Area

5.2.2 Introduction

The Project Design Guidelines establish guidelines and standards for the individual project developer. The objective of these guidelines is to create projects that contribute to the overall design continuity of the development while maintaining their own sense of individuality. The following general guidelines which address site, architectural and landscape design apply to all development within the "MVF" project:

- Vehicular and pedestrian entries to the project should be clearly identifiable to visitors through the use of signage, hardscaping and landscaping.
- Circulation within sites shall be designed to minimize conflicts between service vehicles, automobiles and pedestrians.
- Neighboring lots should share entry drives wherever possible to create a greater uninterrupted expanse of landscaping.
- Visibility of parking areas along roadways shall be minimized through the use of landscaped berms and screen shrubs wherever possible.
- Service zones (trash enclosures, loading and outdoor storage areas) shall be located in areas that are least visible to the public. An appropriate screening method shall be used if service zone is exposed to public view.
- All buildings and walkways shall be accessible to the handicapped according to requirements in Title 24 of the California Administrative Code.
- A secondary sidewalk shall be provided within individual sites and connect with the master circulation system, creating a continuous and pleasant link between projects.
- Consideration should be given to ensure safe pedestrian access through parking areas, and from the public street walkways to building entrances.
- Security measures shall be considered in the project's site design, particularly in pedestrian areas. The use of tall, dense shrubbery should be avoided along walkways and adequate lighting should be provided.

5.2.3 Uses shall be developed in Accordance with the Specific Plan

All properties within the "MVF" shall be developed in conformance with this Specific Plan.

5.2.4 Uses shall be developed in Accordance with City of Moreno Valley Municipal Codes

All development will be consistent with the Specific Plan objectives and design guidelines. Details of specific development projects will be determined by subdivisions and site development plans. In the event of a conflict between the

Specific Plan and the City of Moreno Valley Municipal Code, the Specific Plan will prevail. If the Specific Plan is silent on a particular subject, the Municipal Code shall apply.

5.1.4.1 Zoning Regulations

Introduction

This section outlines the zoning regulations that define implementation of each phase of The "MVF." Tables are used where comparison of different land uses is important or to clarify a concept.

The application of these regulations will not replace the standards as required in State Laws, and will not replace applicable City Ordinances. Need to modify the diagram & legend below:

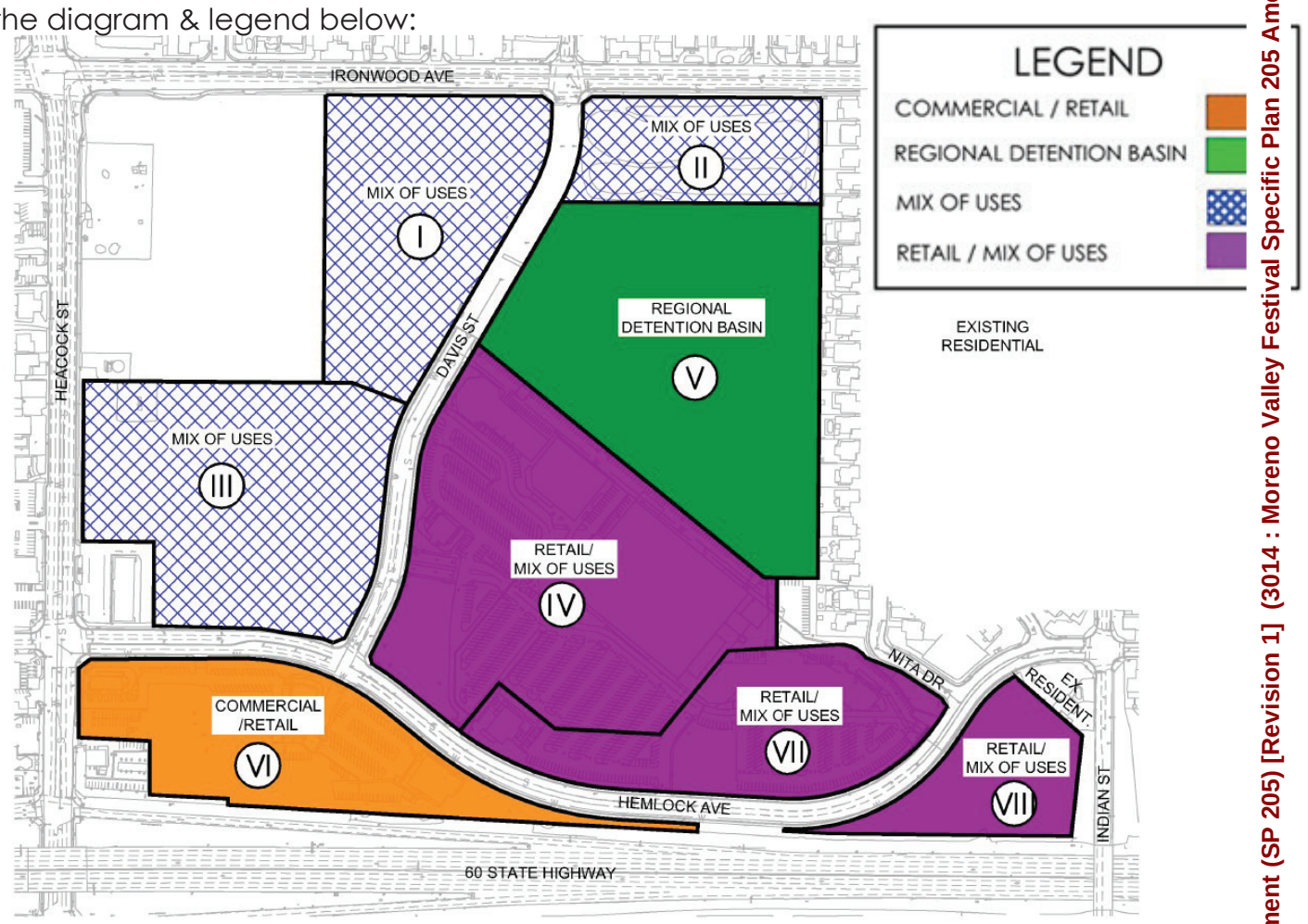


Figure 5-2 Site Planning Development Areas I-VIII

5.1.4.2 Site Development

The site planning development in The "MVF" will consist of planning areas **(See Figure 5-2)** as opposed to Phases which were integral to the previous Specific Plan 205, as shown on the Land Use Plan **(Exhibits 14.2,7,8 &9)**:

- **Planning Area I** has strong potential for Mix of Uses development including commercial, retail, office and business park and medical and related uses The boundaries for this Planning Area include:
  - Close proximity to the existing detention basin across Davis Street to the East
  - Existing residential development to the North.

- Easy access to the existing Ironwood truck route to the North.
- Close proximity to areas II, III & IV.

- **Planning Area II** has strong potential for Mix of Uses development including commercial, retail, office and business park and medical and related uses. The boundaries for this Planning Area include:
  - Adjacent to the existing residential to the east
  - Adjacent to the detention basin to the south.
  - Borders Ironwood Ave to the North and Davis St. to the west.
- **Planning Area III** has strong potential for Mix of Uses development including commercial, retail, office and business park and medical and related uses. The boundaries for this Planning Area include:
  - Adjacent to **Planning Area I**.
  - The existing retail use across the mid-way of Davis Street to the east.
  - Proximity to Hemlock Ave on the Southeast corner of the planning area.
- **Planning Area IV** is currently developed as a retail center. This area was developed under Phase I of Specific Plan 205 Amendment #3. The existing obsolete or underutilized uses may be demolished and/or repurposed as part of the future development. The area has potential for Retail/ Mix of Uses development including commercial, retail, office and business park, medical and related uses. The boundaries for this Planning Area include:
  - Adjacent to detention basin to the North of the area.
  - Southern border is Hemlock Ave.
  - Western border is Davis Street.
- **Planning Area V** is the existing City Owned detention basin. With the exception of regular maintenance, City installed ground cover and planting will remain in its native state an act as a buffer between the proposed uses of the development area. Access to the basin will be restricted. The boundaries for this Planning Area include:
  - Northern border is **Planning Area II.**
  - Southern border is **Planning Area IV.**
  - Eastern border is existing residential.
  - Western border is Davis Street.
- **Planning Area VI** was developed under Phase II of the Specific Plan 205 Amendment #3 for retail commercial use. The area is currently being considered for additional retail commercial development. The boundaries for this Planning Area include:
  - Borders Hemlock Ave. to the North
  - Borders Heacock St. to the West.
  - Good visibility from the 60 State Highway.
- **Planning Area VII** was developed under Phase I of the Specific Plan 205 Amendment #3. The area is currently developed as a commercial / retail business center and is intended to retain the commercial, retail and business center type uses. The area consists of existing usable retail stores,

commercial offices, parking and landscaping areas. The boundaries for this Planning Area include:

- Adjacent to Planning Area IV to the north and west of the area.
- Southern border is Hemlock Ave.
- Good visibility to the 60 State Highway.

- **Planning Area VIII** has good visibility to the 60 State Highway and is designated for Retail/ Mix of Uses. Due to the small and irregular size of this parcel, the opportunities for development will be smaller in scale and options for use will be limited. The boundaries for this Planning Area include:
  - Adjacent to Indian Street to the East.
  - Adjacent to residential to the East and across Hemlock Ave to the North.
  - Existing retail across the street to the North.
  - Northwestern border is Hemlock Ave.

Lot and Building Dimensions and Setbacks

Setbacks (as measured from the property line):

Ironwood Avenue
- Landscape: 20 feet
- Building: 30 feet

Hemlock Avenue (west of Davis Street)
- Landscape: 20 feet
- Building: 20 feet

Hemlock Avenue (east of Davis Street)
- Landscape: 15 feet
- Building: 20 feet

Heacock Street
- Landscape: 20 feet
- Building: 20 feet

Davis Street
- Landscape: 15 feet
- Building: 15 feet

Eastern Project Boundary
- Landscape: 20 feet
- Building: 50 feet (or equal to the building height, whichever is less)

Southern Project Boundary
- Landscape: 20 feet
- Building: 20 feet

Where the rear of the building faces a major road, the setback from the road shall be equal to the street frontage setback.

Building Height

Building heights shall be variable depending on the building use and set-back lines. The list below identifies the guidelines representing the allowable building heights and levels for different building uses.

Building Use	Maximum Height
Commercial Retail	45 feet
Commercial Offices	60 feet
Business Park	55 feet
Other Uses	35 feet

The maximum height of any structure shall be sixty (60') feet. There shall be an additional two (2') foot setback for each foot of additional building height.

The maximum heights noted are to the top of roof level and exclude the parapet height.

5.1.4.3 Table Representing Types of Uses Permitted to Planning Areas

Table 1
Land Use Matrix - List of Permitted and Conditionally Permitted Uses

Development Types Corresponding Zone District	Planning Area							
	1	2	3	4	5	6	7	8
Auto-Related Uses (CC- Community Commercial)								
Automobile Sales, New and Used *(CC Zone)*	*C	*C	*C				*C	*C
Automobile Service Stations *(CC Zone)*	*C	*C	P	*C		P	*C	*C
Auto Repair, Minor Service *(CC Zone)*	P	P	P	P		P	P	P
Auto Repair, Paint and Major Service *(CC Zone)*	*C	*C	P	*C		P	*C	*C
Auto Rentals *(CC Zone)*	P	P	P	P		P	P	P
Auto Related, Accessory Uses *(CC Zone)*	*C	*C	P	*C		P	*C	*C
Auto Supply Stores *(CC Zone)*	P	P	P	P		P	P	P
Car Wash *(CC Zone)*	P	P	P	P		P	P	P
Parking Lot & Parking Structure *(CC Zone)*	P	P	P	P		P	P	P
Indoor, Entertainment, Fitness, & Sports Facilities (CC- Community Commercial)								
Theaters and Auditoriums *(CC Zone)*	P	P	P	P		P		
Athletic Clubs, Gymnasiums, and Spas *(CC Zone)*	P	P	P	P		P	P	P
Recreational Facilities, Commercial Indoor/Outdoor *(CC Zone)*	P	*C	P	*C		P	P	P
Business Park (LI-Light Industrial & BP-Business Park)								
Light Industrial *(LI Zone)*	P	P	P	P			P	
Manufacturing & Assembly *(LI Zone)*	P	P	P	P				
Research & Development *(BP-Zone)*	P	P	P	P			P	P
Wholesale & Limited Distribution *(LI Zone)*	P	P	P	P			P	P
Nursery, Wholesale and Distribution *(LI Zone)*	P	P	P	P				P
Parcel Delivery Terminals *(LI Zone and BP-Zone)*	P	P	P	P				P
Transfer, Moving, & Storage *(LI Zone)*	P	P	P	P				P
Office, Business Services, & Professional *(CC-Community Commercial, O-Office & OC -Office Commercial)*								
Banks, including ATMs & drive-thru *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Business Offices *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Business & Office Equipment Sales and Supply Stores *(CC Zone)*	P	P	P	P		P	P	P
Computer Sales and Repairs *(CC and OC Zones)*	P	P	P	P		P	P	P
Copy Shops *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Day Care Centers *(CC, O, and OC Zones)*	P	P	P	* C		P	P	P
Finance, Insurance, and Real Estate *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Laboratories, Medical, & Dental *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Medical Offices *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Medical Clinics/Medical Care *(CC, O, and OC Zones)*	P	P	P	P		P	P	P

Table 1
Land Use Matrix - List of Permitted and Conditionally Permitted Uses (continued)

Corresponding Zone District and Sample Development Types	Planning Area							
	1	2	3	4	5	6	7	8
Retail, Commercial, & Food Related (CC- *Community Commercial*)								
Medical Equipment *(CC and OC Zones)*	P	P	P	P		P	P	P
Personal Grooming *(CC and OC Zones)*	P	P	P	P		P	P	P
Personal Services *(CC and OC Zones)*	P	P	P	P		P	P	P
Public Buildings *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Veterinary Office *(CC)*	P	P	P	P		P	P	P
Bakeries *(CC Zone)*	P	P	P	P		P	P	P
Barbers & Beauty Colleges (CC Zone)	P	P	P	P		P	P	
Bars *(CC Zone)*	P	P	P	*C		P	P	
Bars with Live Entertainment *(CC Zone)*	P	*C	P	*C		P		
Bowling Alley *(CC Zone)*	P	P	P	P		P		
Building Material Sales, incl. Outdoor Storage *(CC Zone)*	P	*C	P	*C		P	P	P
Business Equipment Sales, Includes Repairs *(CC Zone)*	P	P	P	P		P	P	
Business Supply Stores *(CC Zone)*	P	P	P	P		P	P	
Catering Service *(CC Zone)*			P	P		P	P	
Churches *(CC Zone)*	P	P	P	*C		P	P	
Communication Facilities *(CC Zone)*			P	P		C	P	
Computer Sales & Repairs *(CC Zone)*	P	P	P	P		P	P	
Convenience Stores *(CC Zone)*	P	P	P	P		P	P	
Convenience Stores with Alcohol Sales *(CC Zone)*	C	C	P	* C		P	P	
Dancing, Art, Similar Schools *(CC Zone)*	P	P	P	P		P	P	
Dry Cleaning & Laundry *(CC Zone)*	P	P	P	P		P	P	
Electronics & Sales *(CC Zone)*	P	P	P	P		P		
Fast Food/Fast Casual Restaurant *(CC Zone)*	P	P	P	P		P	P	P
Fast Food/Fast Casual Restaurant with Drive-thru *(CC Zone)*	P	P	P	P		P	P	P
Floor Covering Stores *(CC Zone)*	P	P	P	P		P	P	P
Food Delicatessen *(CC Zone)*	P	P	P	P		P	P	P
General Commercial *(CC Zone)*	P	P	P	P		P	P	P
Hardware & Home Furnishings *(CC Zone)*	P	P	P	P		P	P	P
Heavy Equipment Sales & Rentals *(CC Zone)*			P	P		P		P
Hospital *(CC Zone)*			P	*C		P	P	P
Ice Cream & Yogurt *(CC Zone)*	P	P	P	P		P	P	P
Indoor Storage, Mini Warehouses *(CC Zone)*			P	P		P	P	P
Jewelry Stores *(CC Zone)*	P	P	P	P		P	P	P
Liquor Stores *(CC Zone)*	*C	*C	P	*C		P		
Medical Equipment Sales & Supplies *(CC Zone)*	P	P	P	P		P	P	P
Mortuary, Excluding Cremation *(CC Zone)*	P	P	P	*C		P		
Offices, Administrative & Professional *(CC Zone)*	P	P	P	P		P	P	P

Table 1
Land Use Matrix - List of Permitted and Conditionally Permitted Uses (continued)

Corresponding Zone District and Sample Development Types	Planning Area							
	1	2	3	4	5	6	7	8
Personal Services, Nail Salons/Spas/Barbers/Beauty *(CC Zone)*	P	P	P	P		P	P	P
Pharmacies, with and without Drive-Thru *(CC Zone)*	P	P	P	P		P	P	P
Postal Services *(CC Zone)*	P	P	P	P		P	P	P
Recreational Facilities, Commercial *(CC Zone)*	P	P	P	*C		P	P	P
Rental Services, Furniture, Office, Home *(CC Zone)*	P	P	P	P		P	P	P
Sit-down Restaurants *(CC Zone)*	P	P	P	P		P	P	P
Skating Rinks *(CC Zone)*	P	P	P	P		P	P	P
Specialty Retail *(CC Zone)*	P	P	P	P		P	P	P
Stationary Stores *(CC Zone)*	P	P	P	P		P	P	P
Supermarkets *(CC Zone)*	P	P	P	P		P	P	P
Tire Stores & Tire Repair *(CC Zone)*	P	P	P	P		P	P	P
Trade & Vocational Schools *(CC Zone)*	P	P	P	P		P	P	P
Weight Reduction Centers *(CC Zone)*	P	P	P	P		P	P	P

KEY:**P** = Permitted Uses **C** = Conditionally Permitted Use
* CUP if within 300 feet of a residential zone or use
Blank Box = Not Permitted
Notes:
(1) Where Live entertainment is present, such uses are subject to activity entertainment permit.
(2) Permitted as part of a mixed use commercial or retail center.
(3) Residential permitted without industrial in the same planning area. (4) Senior Housing Subject to a Development Agreement.
(5) ♦ Indicates a use is permitted unless the use is located three hundred (300) feet or less from a residential zone or use, in which case the use is allowed with a conditional use permit.
**19.11.030C. *(denoted above)* The location of a proposed manufacturing or industrial use relative to residentially-zoned property *shall represent the sole factor for determining whether discretionary review is required pursuant to this section.*

Explanation of General Categories as provided for in table 9.02.020 of the municipal code.

1. Auto-Related Uses

The auto-related uses designation refers to those activities that involve vehicle repair, servicing, cleaning, fuel sales, and the sale of new vehicles. Auto-related uses may also include new automobile sales centers, auto service stations, auto tuning businesses, car wash businesses (including hand car washing), and parking structures that serve the other businesses located within the Planning Area only. The off-site parking requirements for new development within this land use designation must conform to Title IX of the Municipal Code, City of Moreno Valley Zoning Ordinance. Overnight parking shall only be permitted on a project basis and will be subject to the approval of the City. A more detailed list of permitted and conditionally permitted land uses in this land use designation is provided in Table 2-2 at the end of this section.

2. Indoor, Entertainment, Fitness and Sports Facility

This land use designation includes those businesses that are predominantly involved in participant sports and health activities conducted entirely within an enclosed building. Typical uses include studio-style facilities such as dance/ballet, yoga, martial arts, gymnasiums, spas, athletic clubs, fitness studios, sports bars, billiard halls, indoor carting, and video and arcade type entertainment uses. In addition, theaters are included in this land use designation. These future uses must also meet the City's off-street parking requirements.

3. Business Park

The Business Park land use designation provides for a range of general business activities. This land use designation will permit typical back office, research & development, wholesale, storage, and light industrial operations that include warehousing services and wholesale activities related distribution of food and other products. These future uses must also meet the City's off-street parking requirements. Activities under this classification shall be conducted in enclosed buildings. Retail sales from the premises may occur though parking must be provided based on the square footage. The Specific Plan Amendment assumes that buffers and site treatments will be required as a means to mitigate any impact related to the business park activity.

4. Office Business and Professional Services

This land use designation applies to those uses that may include, but not be limited to, business administrative, management services, consulting, professional/personal services, clerical staffing, and data processing/storage. These uses may also typically include general office uses, corporate headquarters, branch offices, financial institutions, call centers, medical/dental health services, laboratories/clinics; professional and design offices, and research. Other permitted activities include, but may not be limited to, chemical and biotechnology research and development, food, computer software companies, soils and other materials testing, or medical laboratories.

These future uses must also meet the City's off-street parking and landscaping requirements.

5. Retail, Commercial and Food Related

Business included in this category will be exclusively engaged in retail sales. Potential land uses engaged in retailing activities may include, but not be limited to, home electronics, discount centers, department stores, specialty retail sales, grocery stores and markets, pharmacies, appliance and home goods, and home supply and hardware stores. Other uses included in this category include personal services that may include, but are not limited to hair salons, nail and makeup studios, shoe repair, tailors, etc. These future uses must also meet the City's off-street parking and landscaping requirements. This use classification includes establishments primarily within buildings, providing other businesses with services such as maintenance, repair and service, testing, rental, etc. This use classification does not include massage or tattoo establishments, which are separately classified herein.

6. Open Space

The open space designation applies only to Planning Area V, a 12.9 acre area located in the in the northeastern portion of the Specific Plan Amendment Area. The intent of this designation is to preserve this storm water detention basin as a permanent open space. Planning Area V is intended to remain as is and used as a buffer to the residential and other development areas.

5.1.4.4 Prohibited Uses

The following uses are prohibited within The "MVF" development:

- Adult business establishments (as identified in the Municipal Code Section 9.09.030).
- Any hospital or other facility that is licensed by the California Department of Public Health, or by the California Department of Mental Hygiene, not including a family care, foster home or group home that serves six or fewer persons or assisted living facility.
- Any home or other facility for home care that is licensed by the California Department of Social Welfare, or by the Riverside County Department of Public Welfare, not including a home or facility that serves six or fewer children or aged persons, nor a large family day care home that services seven to twelve children.

5.1.4.5 Detention Basin

According to the originally approved SP 205, Phase I included development of the twelve (12) acre recreation area/flood control basin. The current specific plan shall not include the development of the detention basin.

The primary purpose of this site is for a flood control basin which will be maintained by the Riverside County Flood Control and Water Conservation District, unless such responsibility is offered by the City. The City owned detention basin will normally be dry and will serve to retain excess storm flow once the flow has exceeded the capacity of the existing outlet channel under Highway 60 at the southeast corner of the site. There is a sub-drain down the center of the basin so that small drainage flows can be maintained below the surface of the area.

5.1.5 Subdivision Map Act

Lots created within the "MVF" Specific Plan area shall comply with the Subdivision Map Act and be in conformance with the Specific Plan.

5.1.6 Water Quality Management Plan

All development within the "MVF" shall be subject to applicable laws of the State of California regarding water quality.

5.1.7 Trash and Recyclable Materials

All development within the "MVF" shall provide enclosures (or compactors) for collection of trash and recyclable materials subject to water quality standards and best management practices (BMP).

Screening and buffering within individual projects will be necessary in some locations to provide separation between different land uses and to conceal unattractive views.

Design criteria for landscape screening methods are as follows:

- Dense shrubs and vines shall be used in combination with architecturally compatible walls to screen trash enclosures and service areas. Planting

areas should be provided on three sides of the enclosure walls with a minimum width of three (3') feet.

- Trash enclosure shall be located a minimum of thirty-five (35') feet from adjacent residential structures.
- Landscape screening shall be opaque up to a minimum height of six (6') feet at maturity.
- Loading areas shall be recessed and screened wherever possible to minimize visibility of service vehicles from nearby properties or streets.
- Landscaping or a durable noncombustible enclosure shall be used to conceal transformers, mechanical ducts, and site equipment.
- Trash enclosures shall be designed in general compliance with City Public Works standards, and shall be located in areas which are not prominent to building or site orientations.
- The design of attached structures shall incorporate the same architectural detailing and coloration as the main building they are accessory to.
- Split-face concrete block (natural grey or matching color of building elevation) shall be allowed at free-standing trash enclosures.

5.1.8 Waste Hauling

Construction and other waste disposal shall be hauled to a City-approved facility.

5.1.9 Water Quality Site Design

5.1.9.1 General Standards

Refer to the National Pollution Discharge Elimination System (NPDES) Permit Board Order R8-2010-0033 for complete and current information on water quality management standards. Current requirements can be obtained by visiting the State Water Resource Control Board website at www.swrcb.ca.gov.

5.1.9.2 Water Quality Management Plan

Most developments are required to implement a Water Quality Management Plan (WQMP) in accordance with the NPDES Permit Board Order R8-2010-0033. The WQMP for the Santa Ana Region of Riverside County was approved by the Santa Ana Region Water Quality Control Board on October 22, 2012. Projects identified as a 'Priority Development project' are required to prepare a Project-Specific WQMP.

The MS4 Permit mandates a Low Impact Development (LID) approach to storm water treatment and management of runoff discharges. The project site should be designed to minimize imperviousness, detain runoff, and infiltrate, reuse or evapotranspirate runoff where feasible. LID Best Management Practices (BMPs) should be used to infiltrate, evapotranspirate, harvest and use, or treat runoff from impervious surfaces, in accordance with the Design Handbook for Low Impact Development Practices. The project should also ensure that runoff does not create a hydrologic condition of concern. The Regional Water Quality Control Board continuously updates impairments as studies are completed. The most current version of impairment data should be reviewed prior to preparation of the Preliminary and Final Project-Specific WQMP.

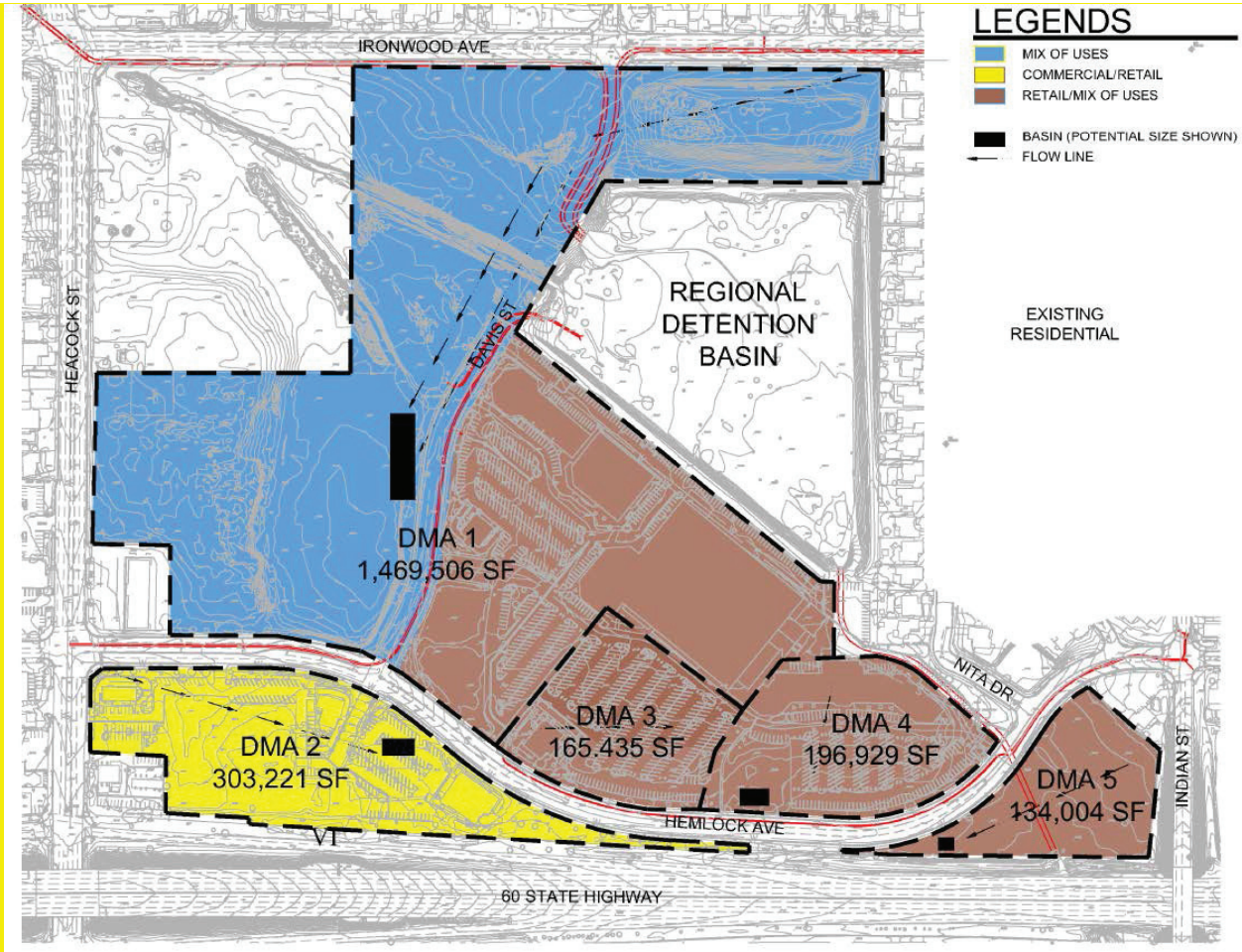


Figure 5-4 Water Quality Management Exhibit

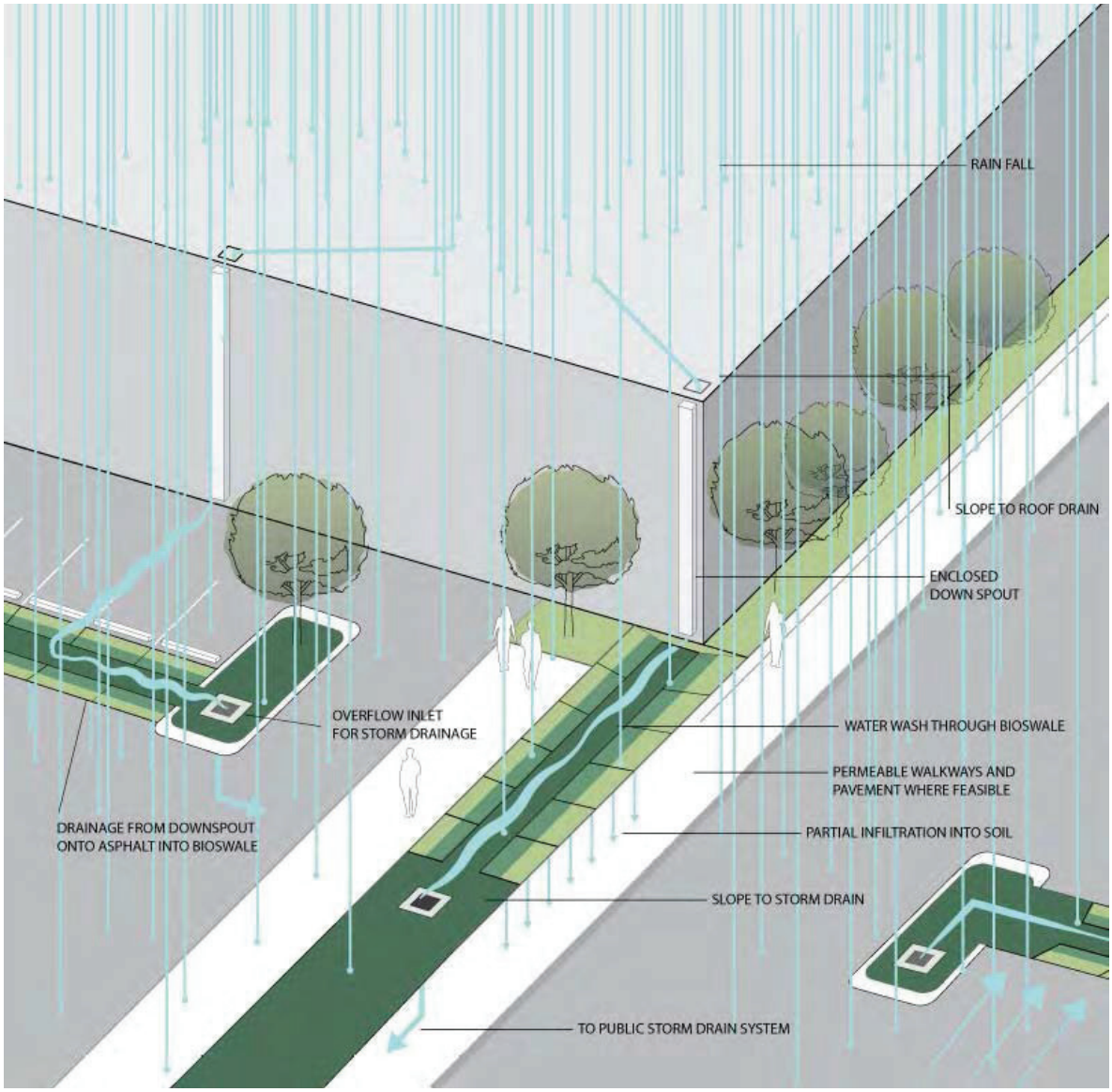


Figure 5-5 Water Quality Management Diagram

5.1.9.3 Site Design BMPs

Site Design BMPs are intended to create a hydrologically functional project design that attempts to mimic the natural hydrologic regime. In accordance with the Riverside County WQMP, project proponents shall implement Site Design concepts that achieve each of the following:

- Minimize Urban Runoff
- Minimize Impervious Footprint
- Conserve Natural Areas
- Minimize Directly Connected Impervious Areas (DCIAs)

Methods of accomplishing the Site Design concepts include:

- Maximize the permeable area.
- Incorporate landscape buffer areas between sidewalks and streets.
- Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.
- Use of natural drainage systems.
- Where soil and conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.
- Construct ponding areas or detention facilities to increase opportunities for infiltration consistent with vector control objectives.
- Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.
- Sites must be designed to contain and infiltrate roof runoff, or direct roof runoff to vegetative swales or buffer areas, where feasible.
- Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.
- Increase the use of vegetated drainage swales in lieu of underground piping or imperviously lined swales.
- Parking areas may be paved with a permeable surface, or designed to drain into landscaping prior to discharging to the MS4.
- Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.

Figure 5-6 Example of Water Quality Feature

5.1.9.4 Source Control BMPs

Source Control BMPs are also required to be implemented for each project as part of the Final WQMP. Source Control BMPs are those measures which can be taken to eliminate the presence of pollutants through prevention. Such measures can be both non-structural and structural.

Potential non-structural Source Control BMPs include:

- Education for property owners, operators, tenants, occupants, or employees.
- Activity restrictions.
- Irrigation system and landscape maintenance.
- Common area litter control.

- Street sweeping private streets and parking lots.
- Drainage facility inspection and maintenance.

Potential structural Source Control BMPs include:

- Stenciling and signage
- Landscape and irrigation system design
- Protect slopes and channels
- Properly design fueling areas, trash storage areas, loading docks, and outdoor material storage areas

5.1.9.5 Treatment Control BMPs

The Treatment Control BMP strategy for the project is to select Low Impact Development (LID) BMPs that promote infiltration and evapotranspiration, including infiltration basins, bio detention facilities, and extended detention basins. Generally infiltration BMPs have advantages over other types of BMPs, including reduction of the volume and rate of runoff, as well as full treatment of all potential pollutants potentially contained in the storm water runoff. It is recognized however that infiltration may not be feasible on sites with low infiltration rates, or located on compacted engineered fill. If the BMP is considered in a fill condition, and the infiltration surface of the BMP cannot extend down into native soils, or if the BMP is considered in a cut condition, and there is no practicable way to verify infiltration rates at the final BMP elevation, infiltration BMPs will not be used. Prior to final design, infiltration tests shall be performed within the boundaries of the proposed infiltration BMP and at the bottom elevation (infiltration surface) of the proposed infiltration BMP to confirm the suitability of infiltration. In situations where infiltration BMPs are not appropriate, bio detention and/or bio treatment BMPs (including extended detention basins, bio swales, and constructed wetlands) that provide opportunity for evapotranspiration and incidental infiltration will be considered. Harvest and use BMPs will also be considered as a Treatment Control BMP to store runoff for later non-potable uses. Ponds may be used to collect storm water runoff for harvest and use.

5.1.9.6 Infiltration Basin

An infiltration basin is a flat earthen basin designed to capture the design capture volume. The storm water infiltrates through the bottom of the basin into the underlying soil over a 72 hour drawdown period. Flows exceeding the design capture volume must discharge to a downstream conveyance system. Infiltration basins are highly effective in removing all targeted pollutants from storm water runoff. The use of infiltration basins may be restricted by concerns over groundwater contamination, soil permeability, and clogging at the site. Where this BMP is being used, the soil beneath the basin must be thoroughly evaluated in a geotechnical report since the underlying soils are critical to the basin's long term performance. To protect the basin from erosion, the sides and bottom of the basin must be vegetated, preferably with native or low water use plant species.

In addition, these basins may not be appropriate for the following site conditions:

- Locations where spills may occur
- Sites with very low soil infiltration rates
- Sites with high groundwater tables or excessively high infiltration rates, where pollutants can affect groundwater quality
- Sites with unstabilized soil or construction activity upstream
- On steeply sloping terrain

5.1.9.7 Biodetention Facility

Biodetention facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant update of pollutants and runoff. This keeps the BMP from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a biodetention facility is unlined, which also provides an opportunity for infiltration to the extent that the underlying onsite soil can accommodate it. When the infiltration rate of the underlying soil is exceeded, fully bio treated flows are discharged via underdrains. Biodetention facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly bio treated) discharge to the storm drain system.

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, biodetention facilities can be used in smaller landscape spaces on the site, such as:

- Parking islands
- Medians
- Site entrances

Figure 5-7 Example of Biodetention Facility

Landscape areas on the site can often be designed as bio detention facilities. This can be accomplished by:

- Depressing landscape areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces into the bio detention facility, rather than away from the landscaping
- Sizing and designing the depressed landscape area as a biodetention facility as described in the Riverside County Low Impact Development BMP Design Handbook.

Figure 5-8 Example of Water Quality Feature

5.1.9.8 Extended Detention Basin

The extended detention basin is designed to detain the design volume of storm water and maximize opportunities for volume losses through infiltration, evaporation, evapotranspiration, and surface wetting. Additional pollutant removal is provided through sedimentation, in which pollutants can attach to sediment accumulated in the basin through the process of settling. Storm water enters the basin through a forebay where any trash, debris, and sediment accumulate for easy removal. Flows from the forebay enter the top stage of the basin which is vegetated with native grasses and interspersed with gravel-filled trenches which together enhance evapotranspiration and infiltration. Water that does not get infiltrated or evapotranspired is conveyed to the bottom stage of the basin. At the bottom stage of the basin, low or incidental dry weather flows will be treated through a media filter and collected in a sub drain structure. Any additional flows will be detained in the basin for an extended period by incorporating an outlet structure that is more restrictive than a traditional detention basin outlet. The restrictive outlet extends the drawdown

time of the basin which further allows particles and associated pollutants to settle out before exiting the basin, while maximizing opportunities for additional incidental value losses.

5.2 Site Planning Guidelines

5.2.1 Overview

The "MVF" Specific Plan has an overall, coordinated design character that emphasizes a unified neighborhood quality image and a clean contemporary design image. This image is expressed in site planning, architecture, landscaping, and lighting. Architectural design is to be compatible in character, massing and materials throughout The "MVF," while allowing for individual identity and creativity in each project. Landscaping, building design, lighting, and utilities are to be closely coordinated along roadways. Criteria for occupancy, building heights, site planning, architecture, landscaping, and lighting are given in further detail in the following sections.

5.2.2 Design Objectives

The objective of the guidelines is to promote the planned image of a quality Mix of Uses development serving the "MVF" residents, users, and visitors in the area. Each site will be developed in a manner that emphasizes a pleasant and contemporary environment, and produces an effect that is consistent and compatible with the adjacent sites and development throughout the "MVF."

Development standards for individual projects pertaining to permitted uses, setbacks, building heights and parking requirements are addressed in Chapter 4. It is necessary to provide the appropriate buffers separating between different project building uses within the same planning area. The buffers shall be visually appealing and create segregation between the uses that still blend in the overall "MVF" image.

The following guidelines pertain to site design and are organized according to the permitted land use within the "MVF" plan.

Commercial

- Building masses and setbacks should vary along streetscapes to prevent monotony.
- Buildings and landscaping should be situated as to allow good visibility of signage.
- Circulation design should allow for easy ingress and egress from primary streets. All minimum distances between curb cuts shall comply with City of Moreno Valley street standards.
- Parking areas should be readily visible upon entering and within close proximity of building entries. Parking design requirements shall comply with Title 9 Planning and Zoning standards Chapter 9.11.
- The pedestrian experience shall be enhanced by landscaped walkways, crosswalks and accent paving. Adequate lighting, bike racks and trash receptacles shall also be provided.
- Pedestrian walkways within all commercial projects should be wider than standard with a minimum width of (6') six feet.

- The inclusion of seating in public spaces consisting of benches, chairs or planter edges is encouraged.

Office

- Spatial relationships between buildings should be considered in order to create entry plazas and to successfully integrate outdoor spaces into the project site.
- Building clusters are encouraged to create a campus setting, allowing for larger expanses of landscaped open space.
- Views and solar orientation should be considered for the building's orientation on the site while considering the environmental impacts and surrounding space.
- The scale of buildings should be compatible with nearby residential neighborhoods.
- Visitor parking shall be readily visible upon entering and within close proximity to building entries.
- Employee parking should be located in the rear of the buildings, wherever possible.

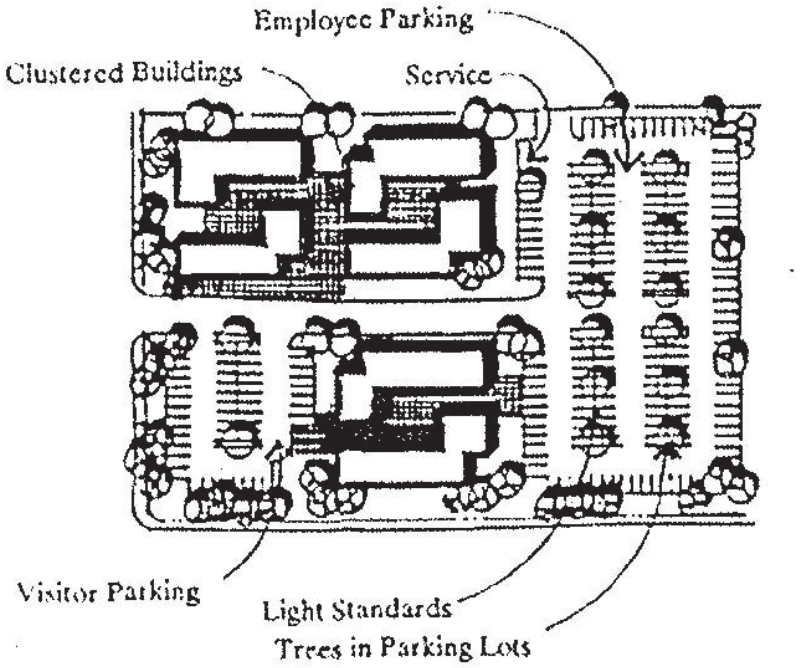


Figure 5-9 Office Design Standards

Business Park

- A variety of building sizes and setbacks should be provided in order to avoid long monotonous building facades and to create diversity.
- Building setbacks should be provided proportionate to the scale of the structure and in consideration of existing development adjacent to it. Larger structures may require more setback area for a balance of scale.
- Access to the Business Park zones shall be controlled and visually pleasing.

- Business Park service areas shall not be visible to the public and shall be located on the sides and/or rear of buildings. Screening of outdoor storage, work areas, and equipment shall be incorporated.
- Where Business Park uses are adjacent to non-Basin uses, appropriate buffering techniques such as setbacks, screening, and landscaping need to be provided to mitigate any negative effects of operations.
- The maximum allowable levels shall be one story and a partial mezzanine. The mezzanine area shall not exceed one-third of the first floor area.

Retail

- The entrances to the Retail areas shall be welcoming and clearly identified.
- It is recommended to have the Retail areas clustered in a plaza with a shared visitor car parking area.
- Building location on the site shall allow convenient vehicular access to visitor's parking, on-site circulation, and viewing from the surrounding street.
- Retail loading and unloading areas shall not be visible to the public and shall be located on the sides and/or rear of buildings.
- The maximum allowable levels shall meet the California Building Code requirements and the Specific Plan requirements stated in this document.
- Pedestrian Site access from surrounding uses shall be considered. Landscape and signage shall be used to enhance the pedestrian experience along the route to the retail areas.
- The inclusion of landscape furniture in public spaces consisting of benches, chairs, planters, and soft landscape are encouraged.

5.2.3 Sustainable Design

Building in an ecological and resource-efficient manner has many advantages for the environment as well as for building users. Sustainable design reduces pollution and conserves natural resources. The architects and engineers that make contributions to the "MVF" must understand this and strive to lessen the impact their designs have on the environment. The following sustainability goals have been set for buildings at the MVF:

- Design buildings to accommodate renewable energy systems where feasible.
- Create building forms and landscape that protect residents, users, visitors, patrons, and employees from unpleasant climate conditions.
- Use water resources responsibly with a constant effort, to minimize the use of potable water.
- Incorporate life cycle planning and decision making.

The design of each building at the "MVF" will pursue these goals, by incorporating design features such as, but not limited to, the following:

Water conservation:

- Low flow faucets and fixtures.
- Rain water collection (where practical).
- Native landscape.
- Direct and capture low-use irrigation and rainfall runoff to landscape areas.

Energy conservation:

- Building orientation.
- Glazing, overhangs, and landscaping to capture and control natural daylight.
- High performance glazing.
- Use of atriums, skylights and internal courtyards to provide additional daylighting.

Natural resource conservation:

- Use of renewable materials where feasible
- The use of building materials with recycled content where feasible

5.2.4 Building Location

Buildings are to be located on each site in a manner that is efficient, appropriate to site conditions, supportive of the overall architectural composition, and compatible with nearby projects throughout the "MVF."

- Buildings shall be located to enhance project visibility and identity, while maintaining compatible relationships with adjacent projects and street views.
- Buildings shall be oriented so that loading and service areas are screened from view from streets and public areas.
- Buildings shall be arranged to provide convenient access to entrances and efficient on-site circulation for vehicles and pedestrians.
- Buildings shall be arranged to provide landscape outdoor plazas or entries.
- Customer parking shall be convenient to public building entries, as shown below.

5.2.5 Site Access

Vehicular access to retail areas will remain for the existing retail portion of the development. The new retail portion will be developed per the City of Moreno Valley development standards.

- Project access and circulation shall allow for both vehicles and pedestrians by separating autos and foot traffic, by creating pedestrian entrances to projects and by using enhanced paving treatments, bollards or pergolas to identify pedestrian pathways through parking areas and along buildings (Per Municipal Code 9.11.080).

- Projects shall minimize impacts on adjacent streets by consolidating access points. Access points should be consolidated to take advantage of planned or existing median breaks.

5.2.6 Vehicular Circulation

Onsite vehicular circulation should be clear and direct.

- Drive aisles should make a loop around the structures and avoid dead end parking. In the case of straight drive aisles, provide at least ten (10) feet of setback between the last parking stall and the property line (Per Municipal Code 9.11.080).
- Dead-end parking aisles which exceed eight standard parking stalls in length, and serving greater than sixteen (16) standard stalls for dual lanes, shall provide turnaround facilities (i.e., hammerhead, cul-de-sac, etc.) adequate to accommodate emergency vehicles.

5.2.7 Parking

Landscape development in parking areas shall be designed to provide safety and comfort to the drivers and pedestrians and enhance the visual quality of the City. The design shall reduce auto noise, lights and glare, and ambient temperature. The design shall also minimize visual disruption from the surrounding streets and adjacent developments, per Municipal Code Section 9.11.080.

- All spaces will be double striped and shall be nine (9') feet wide and eighteen (18') feet long;
- The maximum length of straight aisles shall not exceed three hundred (300) feet. Parking rows shall not be longer than one hundred eighty (180) feet.
- Parking lot design shall include openings in curbs to convey water runoff into landscape areas for water quality, retention and absorption. Pervious surfaces are recommended where feasible and required for parking areas provided in excess of city requirements.
- Landscape finger planters shall have a minimum interior dimension of five (5) feet by sixteen (16) feet, exclusive of curbs, step-outs and other hard surfaces. A finger planter with parking on one side has a minimum curb-face-to-curb-face dimension of seven (7) feet. An island with parking on both sides has a minimum curb-face-to-curb-face dimension of eight (8) feet.
- Diamond planters have a minimum of twenty-five (25) square foot interior area (exclusive of perimeter curbing) with minimum interior dimensions of five (5) feet by five (5) feet. The minimum exterior area (including perimeter curbing) is thirty-six (36) square feet.
- Where double rows of parking are provided, diamond or island planters are provided at an interval of one planter every three pairs of parking stalls. Minor adjustments are allowed in cases where this exact interval would be infeasible.
- A finger planter is provided at an interval of every twelve (12) parking stalls along any row of parking. Minor adjustments are allowed in cases where this exact interval would be infeasible.

- Planter Curbs and Step-Outs. Planters shall be separated from parking spaces by a six-inch wide concrete curb. Where a planter (finger or island) is located on the side of a parking space, a twelve (12) inch wide concrete step-out is required along the long dimension of the parking space. A step-out is required, in addition to a six-inch curb, resulting in a combined concrete surface measuring eighteen (18) inches in width.
- Trees shall be planted at the equivalent of one tree per thirty (30) linear feet of building dimension that is visible from the parking lot or public right-of-way. Trees may be massed for pleasing aesthetic effects.
- Parking lot trees shall be a minimum of fifteen (15) gallon size, twenty-five (25%) percent of the required trees shall be twenty-four (24") inch box or larger. One-half (1/2) of the twenty-four (24") inch box trees shall be placed in the street frontage or side yard setback.
- The selection of parking lot trees should emphasize the provision of summer shading of pavement and vehicles. Within a maximum of ten (10) years, parking lot trees shall shade a minimum of fifty (50) percent of parking space pavement during the summer months, between one and four in the afternoon. A maximum of fifty (50) percent of the parking lot trees may be deciduous. Avoid trees with excessive leaf litter, sap or fruit that could damage vehicles.
- Parking lot trees shall be planted at a cleared distance from light standards so the trees will not interfere with the lighting pattern of the light fixture. Light standards shall be shown on conceptual plans and subsequent planting plans.
- Parking lot trees shall be planted to align with the ends of parking lot stripes (between cars) and away from light standards, in order to create adequate shade canopies, and avoid damage to tree trunks.
- Landscaped areas in the parking lot shall be planted with shrub masses to discourage pedestrians from crossing landscaped areas to reach building entrances. All soil surfaces in the planting areas shall be covered with shrubs and/or groundcovers.
- Car overhang onto sidewalk permitted only when a minimum eight (8') foot sidewalk exists.
- Off-street parking shall be provided to accommodate all vehicles associated with the permitted use of each site. On-street parking is prohibited along Heacock Street, Ironwood Avenue and Hemlock Avenue.
- Designated spaces must be positioned in convenient locations for handicap, carpool, alternate fuel vehicles, motorcycles and bicycles as required by the State of California and the City of Moreno Valley.
- Parking areas for motorcycles and bicycles are to be designed for orderly, uncluttered parking. Bicycle parking areas are to be provided with racks and locking capabilities per Municipal Code.
- The view of parking areas from public streets shall be softened by means of grading and/or landscaping.
- Parking is prohibited in any required landscape areas.

- Parking lots shall comply with the accessible parking standards required by the City of Moreno Valley.

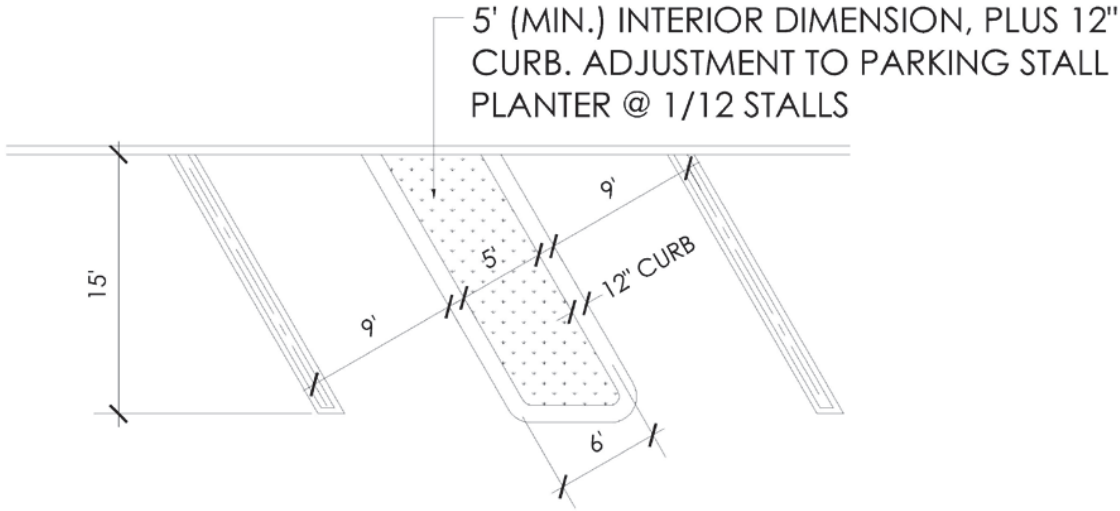


Figure 5-11 Parking Configurations at 60 Degree Compact Space with Planters

5.2.8 Pedestrian Circulation

Safe, clear pedestrian circulation must be provided between buildings, parking areas, and entries on all sites. Where a pedestrian walkway into the site from the public sidewalk is provided, it should be located at a driveway and in conformance with the street tree interval.

5.2.9 Truck Parking

All new and existing truck loading areas are or shall be screened from public view from adjacent streets per this Specific Plan.

5.2.10 Service Areas

Service, storage, maintenance, loading, refuse collection areas and similar facilities are to be located out of view of public roadways and buildings on adjacent sites, or screened by a fence, wall, landscaping, berming or a combination of screening components. Service areas may not extend into required building and landscape setback zones. Service areas should be located and designed so that service vehicles have clear and convenient access and do not disrupt vehicular and pedestrian circulation. No loading or unloading is permitted from public streets.

Trash/waste enclosure shall be located at a minimum of thirty-five (35) feet from any residential structures. Trash/waste enclosures shall be constructed to include a solid roof, provide a minimum three feet landscaped planter on three sides of the enclosure walls, and accommodate climbing vines and screening shrubs within the planter area. Design of a trash enclosure should use materials and colors aesthetically compatible with the project, per Municipal Code Title 9, Chapter 9.08.150 – Screening Requirements.

5.2.11 Grading and Drainage

All project grading shall conform to the Municipal Code. Site grading and drainage shall be designed so that surface drainage is collected and treated before leaving the site. Site grading shall be designed to be compatible with streetscape grades and to minimize the need for handrails or pedestrian ramps within the site. Concrete swales in parking lots should be located at the edge of parking spaces and/or curb. Swales are prohibited in the middle of drive aisles. Directing drainage to curb and gutters is preferred over concrete swales. Run-off from roofs, site, and impervious areas shall be directed to planter areas to minimize run-off.

5.2.12 Walls & Fences

Walls and fences must be designed as an integral part of the overall architectural or landscaping design concept. When the walls / fencing are provided within designated edge treatment areas, they shall follow the guidelines below:

- Along the Ironwood Avenue and Heacock Street boundary, 8' high solid fencing shall be used to restrict access and view to the residential areas and provide a sound buffer from traffic noise.
- The fencing shall be of a durable decorative material (concrete or CMU).
- Plot Plans shall include all site fencing details.
- Where the project immediately abuts the residential area at the east boundary of the project, the developer will build an eight (8') foot decorative block wall.

Materials

Walls are to be constructed of materials compatible with the overall design character of the buildings. Walls shall be cast-in-place concrete or CMU where they are located. Fencing walls abutting the residential developments shall be concrete or CMU. Interior fencing separating similar building types and uses may be wrought iron or tubular steel. Chain link fencing is permitted only where it is not visible from streets, sidewalks, public parking areas or public building entries, in the industrial, commercial, and retails uses.

Design features may include:

- Varied heights, wall plane offsets, and angles.
- Pilasters or distinctive elements.
- Trim, reveals.
- Minor changes of material and finishes where appropriate.
- Trellis/vine panels, landscape pockets.

Figure 5-13 Community Fencing Arrangement Example

Walls within Street-side Landscape Setback

Low-profile parking lot screen walls or garden walls are permitted in street-side landscape area, and shall not exceed three feet in height.

Height

Screen walls shall not exceed the height necessary to screen vehicles and loading areas. Pilasters and distinctive elements may exceed this maximum.
Walls or fences in the residential landscaping area visible from the street and not intended for screening purposes shall be limited to a height of 3' 0". Refuse enclosures shall have walls not less than 6'-0" high. Planting areas for vines, shrubs, and trees shall be provided at the rear and sides of all enclosures.

Gates Visible From Public Areas

Pedestrian and vehicular access gates visible from public areas (i.e., parking lots, streets, sidewalks, etc.) shall be constructed of a durable material, such as tubular steel and be aesthetically pleasing and consistent with the design of the development.

Prohibited Materials

Barbed wire, wire, integrated corrugated metal, electronically charged fences, and exposed plastic vinyl fences are prohibited.

5.3 On-site Architecture

Architectural design should express the character of a mixed use, commercial, and retail development center in a manner that is progressive and enduring. Individual creativity and identity are encouraged, but care must be taken to maintain design integrity and compatibility among all projects in order to establish a clear, unified image throughout the "MVF."

Design continuity can be accomplished through the sensitive massing of structures and limited use of materials and colors. This design strategy will provide a unifying thread throughout the various land uses while still allowing variety and individual expression to occur.

The Architectural design standards propose general guidelines that would enhance the integrity of the entire "MVF" development.

5.3.1 Architectural Standards

General building design guidelines for Mix of Uses, commercial, and retail uses are as follows:

- Distinctive architectural design shall be encouraged to create individual building identity. However, buildings must be compatible with adjacent development projects to achieve a sense of architectural continuity. Detailing may vary but all materials are to be durable, aesthetically pleasing and low maintenance.
- The building's scale should be a major determining factor in the architectural design and detailing. Long expanses of building walls may be ameliorated by employing a system of overlapping forms and heights.
- The architectural concept must be consistent throughout the individual project with consideration given to all sides. Distinctive hardscape and colorful landscaping should be used to identify and accentuate building entries.

5.3.1.1 Architectural Theme

The previous "MVF" theme was based upon examples of east coast markets and made many nautical architectural references. We find that this reference is not the most appropriate reference for this development. The intent of this specific plan is to develop the areas with more appropriate design features. Clean lines and a neighborhood friendly design are the focus of our concept. Our focus is on a pedestrian friendly development whether it is developed as commercial, retail, business park, medical or a hotel, it will provide the community with a connection on the human scale through detailing and finishing.

Figure 5-14 Architectural Character

Figure 5-15 Possible Retail Development Example

Figure 5-16 Possible Commercial Development Example

The designs are intended to be contemporary but allow for cultural specific design concepts to represent the diverse demographics of Moreno Valley, and loosely follow the modernist axiom "form follows function". Signage that complements the buildings will be used to establish identity from the State Highway, and entries for major tenants will be differentiated to heighten their importance relative to the in-line shops. The building forms and colors of the "MVF", while primarily designed for their visual impact from the State Highway, will also provide the architectural detail and articulation to capture the

pedestrians' interest. The use of trellises, canopies, and awnings are encouraged to mitigate tall building masses, and effect a more human scale.

A broader interpretation of the "MVF" style is anticipated for the outlying pad buildings. A varied and creative use of the design elements and materials illustrated in this manual will add to the festive appeal of the retail centers. It should also be recognized that pad tenants are often representing retail chains for which an established corporate image has already been developed. These tenants will adhere to the standards established for the overall development, yet retain their individual commercial identity.

The following guidelines apply to the architectural forms and materials in the "MVF" development:

Building Walls

- Tilt-up concrete, concrete block masonry, precast concrete panels and plaster are all appropriate substrates and finishes. Tilt-up concrete should be painted; concrete block should be sandblasted; split-face block should be plastered or painted; plaster should be uniformly textured with spray, sand a float finishes only.
- Concrete should be naturally colored grey or white concrete; plaster may be white, gray or light earth tones of primary hue.
- Use of glazed or unglazed ceramic tile, stone or metal panels are also permitted as facade and base treatments.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

Accents

- Horizontal or vertical banding of tile or painted reveals is encouraged to add interest.
- Storefronts should be colored; mullions used in grid patterns are encouraged.
- Clerestory windows and skylights are encouraged as design elements to be expressed externally and internally.
- Colored tile panels and stucco forms may be used as an alternate to steel framing.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.
- Cantera Stone in a variety of colors.
- Murals.

Roofs

- Gable, hip, pyramidal and parapet roofs are permitted with pitches ranging from 3:12 to 5:12. Mansard roofs are discouraged.

- Metal standing seam and flat concrete tile roofs are acceptable. Spanish tile, wood shakes and flat clay tile shall also be permitted.
- Metal roofs should be painted to match the theme of the development. Concrete tile roofs should be limited to neutral colors.
- Roof tops should be designed to be visually attractive when viewed from adjacent buildings or roadways. Roof mounted equipment shall be concealed from public view to the extent possible. If exposed, equipment shall be screened by roof structure or architecturally integrated screening.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

Canopies

- Exposed metal decking, plasters soffits and steel structures are permitted. Vinyl awnings and accent colors are encouraged; natural wood is encouraged.
- Columns may be plaster, sonotube concrete or concrete masonry.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

Arcades

- Metal standing seam roofs as well as open steeland wood trellises, expanded metal and wood trellises, or fabric awnings may be used to create visual counterpoints and added interest.
- Colonnades of plaster, block, concrete and/or steel framing may be used to mitigate long expanses of wall.
  Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

5.3.1.2 Signage

Retail commercial uses have specific signage requirements and designs which must be approved by the City of Moreno Valley. A detailed, comprehensive sign program shall be submitted for each proposed development application within the Specific Plan. The sign program shall describe sizes, colors, materials, and lettering styles for all project signs. Individual project signs shall be submitted to the master developer for review and approval. Three (3) copies of developer approved and signed plans shall be submitted to the City for review and approval.

The following sketches are provided to illustrate the proposed quality and design continuity in the "MVF" development, while permitting both individual creativity and commercial marketability for the tenant:

Figure 5-17 Retail / Commercial Example

5.3.1.3 Architectural Character

The Architectural character, especially for the retail elements, should portray a high quality image in a manner that is both progressive and timeless

Appropriate Characteristics for Retail elements:

- Style that enforces neighborhood retail market image.
- Spaces that encourage connection to foot traffic from the existing residential neighborhoods
- Opportunities for outdoor dining
- Clean, smooth, efficient lines which emphasize horizontality
- Distinctive, but compatible image

Figure 5-18 Example of Appropriate Characteristics for Retail

Inappropriate Characteristics for Retail elements:

- Trendy styles
- Tricky, complicated, arbitrary forms
- Sharp contrast with surroundings
- Dull unarticulated and flat elevations with sharply contrasting non-harmonious color schemes.

Figure 5-19 Example of Inappropriate Characteristics for Retail

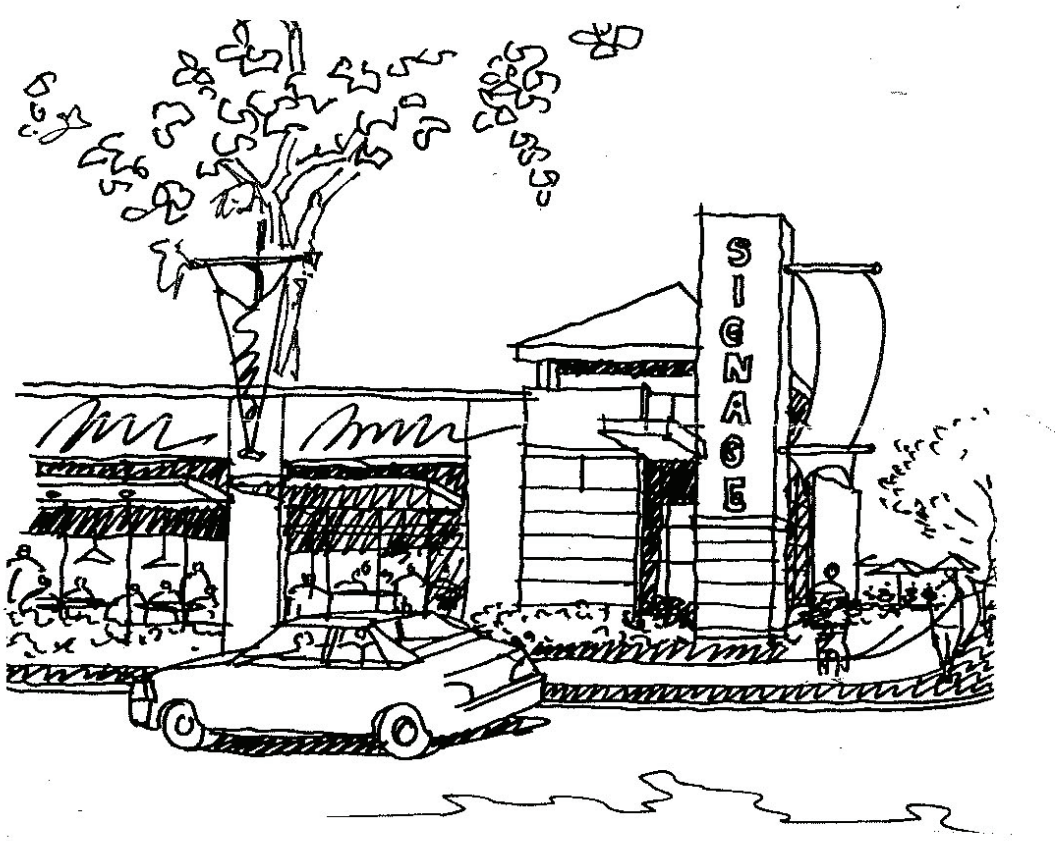


Figure 5-20 Example of Appropriate Characteristics for Retail

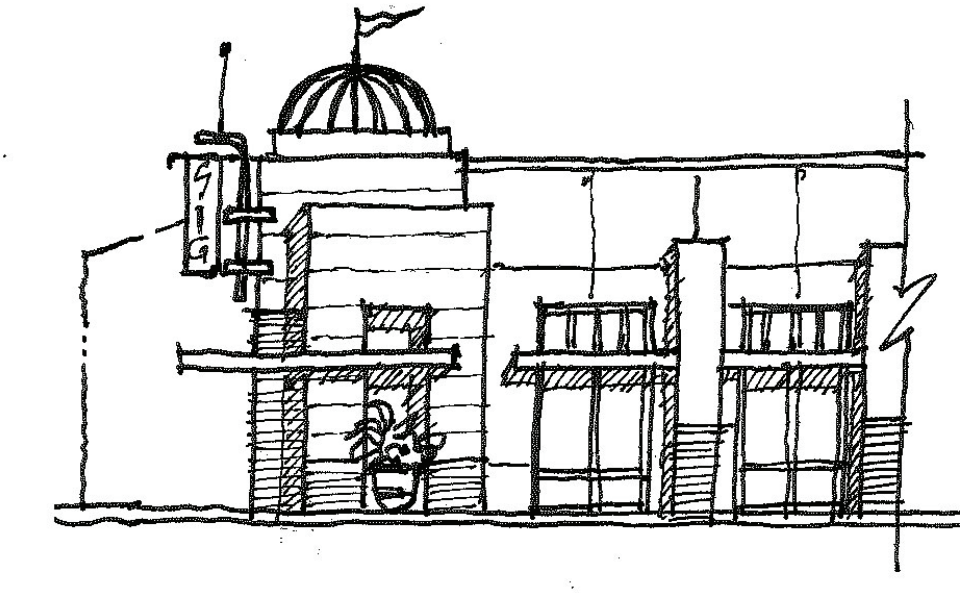


Figure 5-21 Example of Appropriate Characteristics for Retail

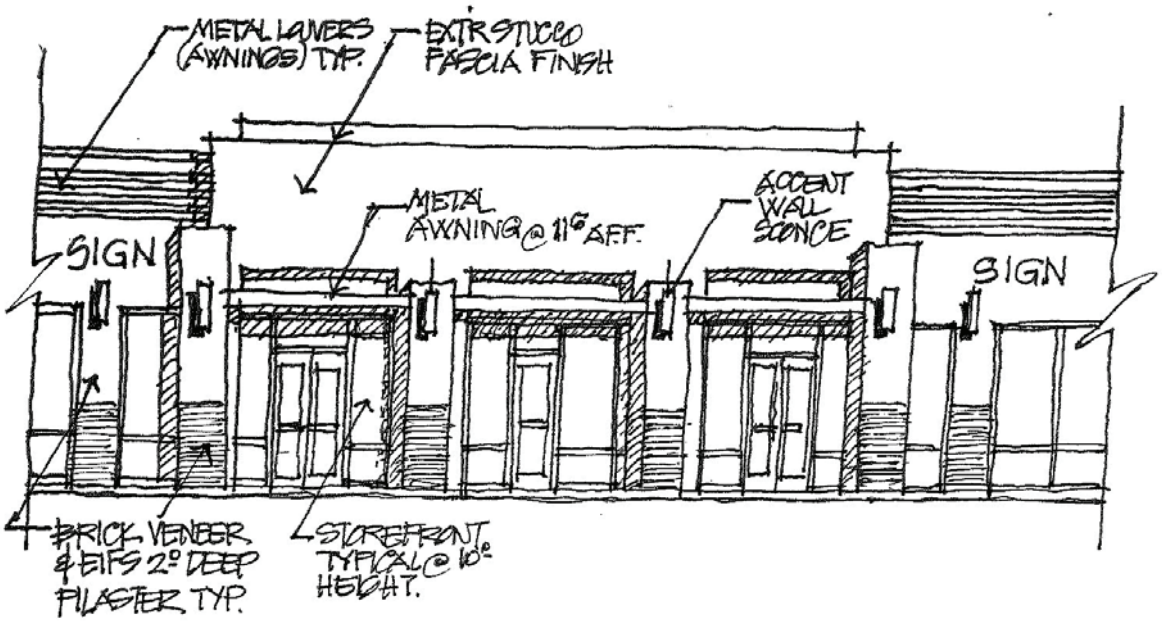


Figure 5-22 Example of Design Detailing for Retail

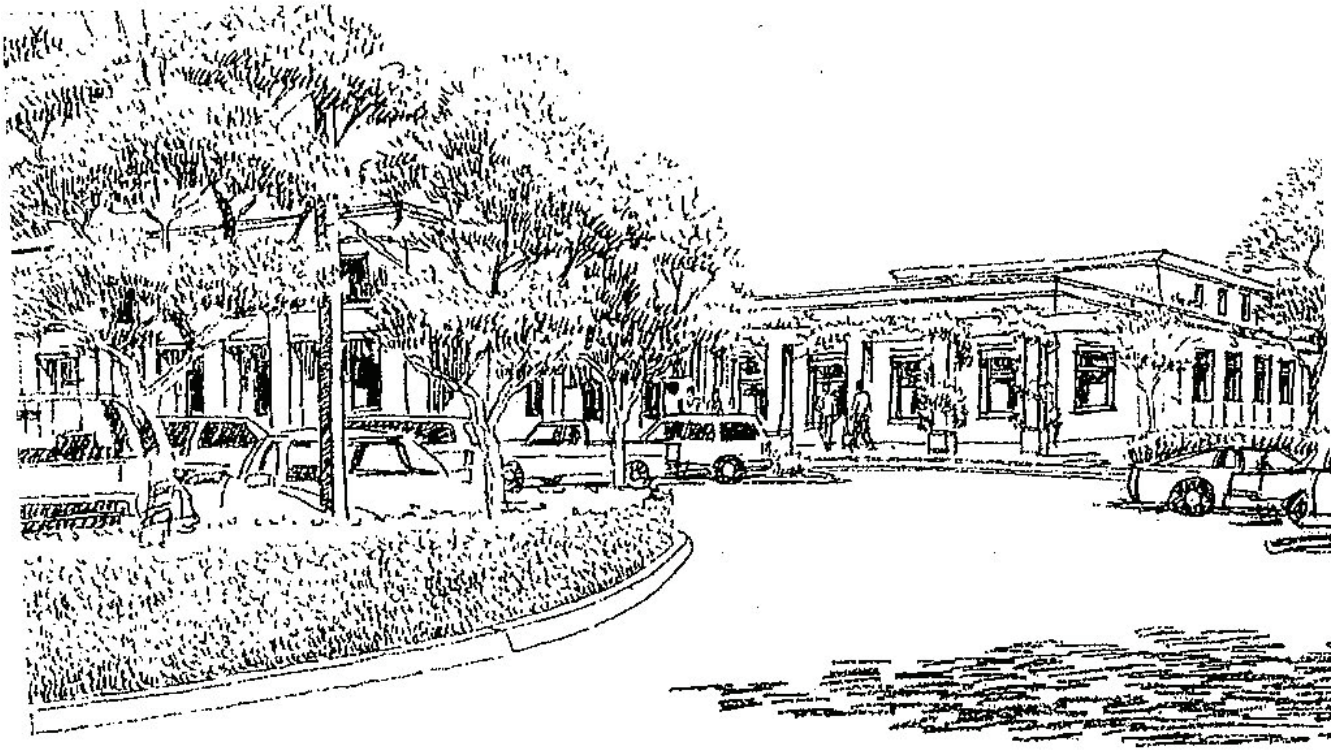


Figure 5-23 Example of Design Aesthetic for Retail

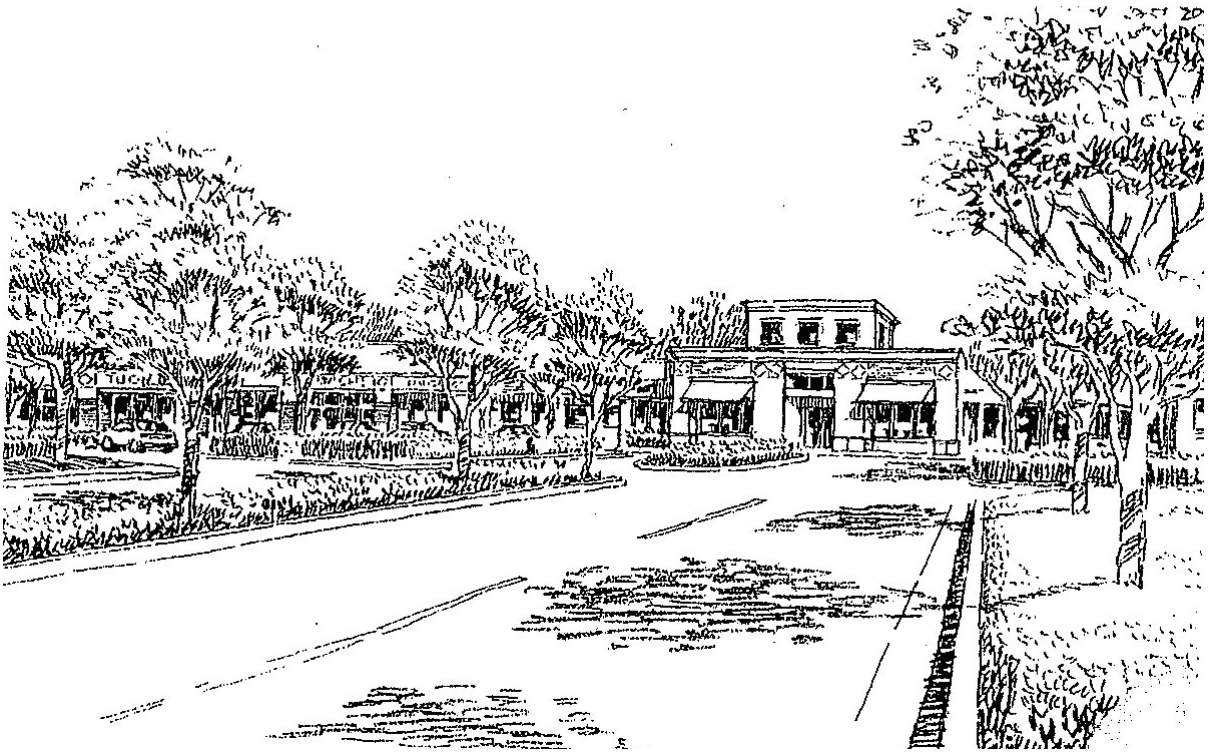


Figure 5-24 Example of Design Aesthetic for Retail

5.3.1.4 Exterior Building Materials

Exterior finishes shall be durable, attractive, consistent, and complementary in color and style:

Walls

- STUCCO: Spray machine finish color to match specifications provided by owner specified design agent.
- MASONRY: Split-face concrete masonry units in natural grey or a tone of beige color.
- METAL: Decorative and shear wall metal panels are permitted. Metal panel and structural specifications shall match the Owner's specified design agent.

Roofs

- Concrete, built up, membrane, composition shingle or flat clay tile roof materials should match specifications provided by the Owner's specified design agent.

Accents

- PAINT: To match specifications provided by the Owner's specified design agent.
- DECORATIVE PATTERN TILES: To match specifications provided by the Owner's specified design agent.
- VENEERS: Brick and Stone veneers to match specifications provided by the Owner's specified design agent.

Paving

- FIELD: Natural concrete in broom, sandblasted or exaggerate finish, and brick pavers.
- ACCENT: Stamped concrete in 6x6 or 12x12 grid patterns color to match specifications provided by owner specified design agent.

*Substitutions and additions to the above materials and colors may be permitted with review by owner specified design agent and the City of Moreno Valley.

5.3.1.5 Design Details

Detailing should be clean, clear and straightforward. Details should reinforce overall design unity, interest and scale.

Appropriate Treatment

- Coordinated mullions and details
- Expression and alignment of structural connections
- Finishes commensurate with building materials
- Coordinated entry spaces and landscaping
- Use of Cantera Stone / Hard Foam / Stucco Cornices and Water Scuppers

Inappropriate Treatment

- Insufficient or excessive detailing
- Inadequate interface between materials
- No indication of scale
- Lack of interest

5.3.1.6 Ground-Mounted Equipment

All exterior ground-mounted equipment-including, but not limited to, mechanical equipment, electrical equipment, emergency generators, boilers, storage tanks, risers, electrical conduit, gas lines, cellular telephone facilities, and satellite dishes must be screened from on-site and off-site view, per Municipal Code, Chapter 9.08 - General Development Standards. Wall-mounted equipment is not allowed.

Appropriate Treatment:

- Ground equipment hidden by screen walls or landscaping
- Screen walls of same or similar material as building walls
- Vines, shrubs, trees on rear and sides of enclosure

Figure 5-25 Example of Appropriate Ground Mounted Equipment Screening

Inappropriate Treatment:

- Screen material contrasting with adjacent surfaces
- Wood or chain link fencing
- No planting areas for vines, shrubs, and trees, at the rear or sides of walled enclosures

Figure 5-26 Example of Inappropriate Ground Mounted Equipment Screening

5.3.1.7 Roof-Mounted Equipment

All roof-mounted equipment including, but not limited to, mechanical equipment, electrical equipment, storage tanks, cellular telephone facilities, satellite dishes, skylights, vents, exhaust fans, smoke hatches, and ducts must be below the top of the parapet or equipment screen. Roof access shall be through roof hatches, not exterior ladders. Roof hatches shall be located so that guardrails at parapets are not required.

Appropriate Treatment

- Rooftop screens should be provided to screen the equipment and align with the Architectural theme.
- All roof mounted mechanical equipment shall be screened from the ground elevation view to a reasonable sight distance. Above ground utility service areas and enclosures shall be screened from view with landscaping and decorative barriers or baffle treatments.

Inappropriate Treatment

- Rooftop equipment extending above parapet or screen
- One-sided rooftop screens that do not hide the equipment from view from secondary streets or from adjacent sites
- Rooftop screens too close to parapet
- Rooftop screens not related to building geometry
- Wood rooftop screens

5.3.1.8 Ancillary Structures

On a case by case basis, additional buildings may be required to house functions for the proper operation of the facility. The design guidelines found herein apply to all structures regardless of the time of construction, location on site, or use they contain.

5.3.1.9 Building Appurtenances

On a case by case basis, the proper functioning of a facility may require a piece of equipment, ductwork, shaft, conveyance mechanism, etc. to be physically added to the side of the main building. These appurtenances must comply with the guidelines stated herein to allow for aesthetic continuity.

Figure 5-27 Example of Building Appurtenance

5.4 On-site Landscaping

5.4.1 Objectives

Landscaping is an important element contributing to the identity and unity of the "MVF." As such, all landscaping for the project shall:

- Promote a pleasant, distinctive, environment,
- Augment internal cohesion and continuity within the "MVF";
- Enhance the structured urban design concept of the "MVF," and;
- Promote water conservation.

The landscaping design concept is focused toward:

- Providing a clean, contemporary visual appearance,
- Coordinating the landscaping treatment along State Highway and surface streets to emphasize the circulation system,
- Coordinating streetscapes within the "MVF" to unify its general appearance, and
- Coordinating on-site landscaping design continuity among individual development sites within the "MVF."

The following guidelines present parameters for general landscape design, water conservation, streetscapes, and on-site landscaping.

General landscape criteria for the "MVF" are listed in Section 5.4.3. Project developers must adhere to those criteria as well as the guidelines for individual

parcel development. Each individual project site within the "MVF" development has been divided into two distinct landscape zones:

- The Transition Zone while includes the property between the landscape setback and buildings or parking lots within individual developments.
- The Interior Zone which includes all other landscape areas located on individual parcels.

Landscape guidelines for the two zones differ and it is advisable for project developers to be aware of the requirements before submitting a landscape plan for review by the City of Moreno Valley. Landscape requirements for the Transition Zone have been established to insure a sense of continuity between individual parcels and the general development areas. All areas within this zone must "Incorporate a minimum of sixty percent (60%) of the same trees in the general development area adjacent to the parcel. Guidelines for the Interior Zone allow for the individual project's identity to be reinforced through the use of a variety of plant materials. However, in order to strengthen The "MVF" landscape theme, plant materials within this zone shall be selected from the "Project Plant List" in Section 5.4.4. A simplified palette of plant materials, including evergreen and deciduous trees, should be used in order to maintain the desired landscape theme for each individual lot.

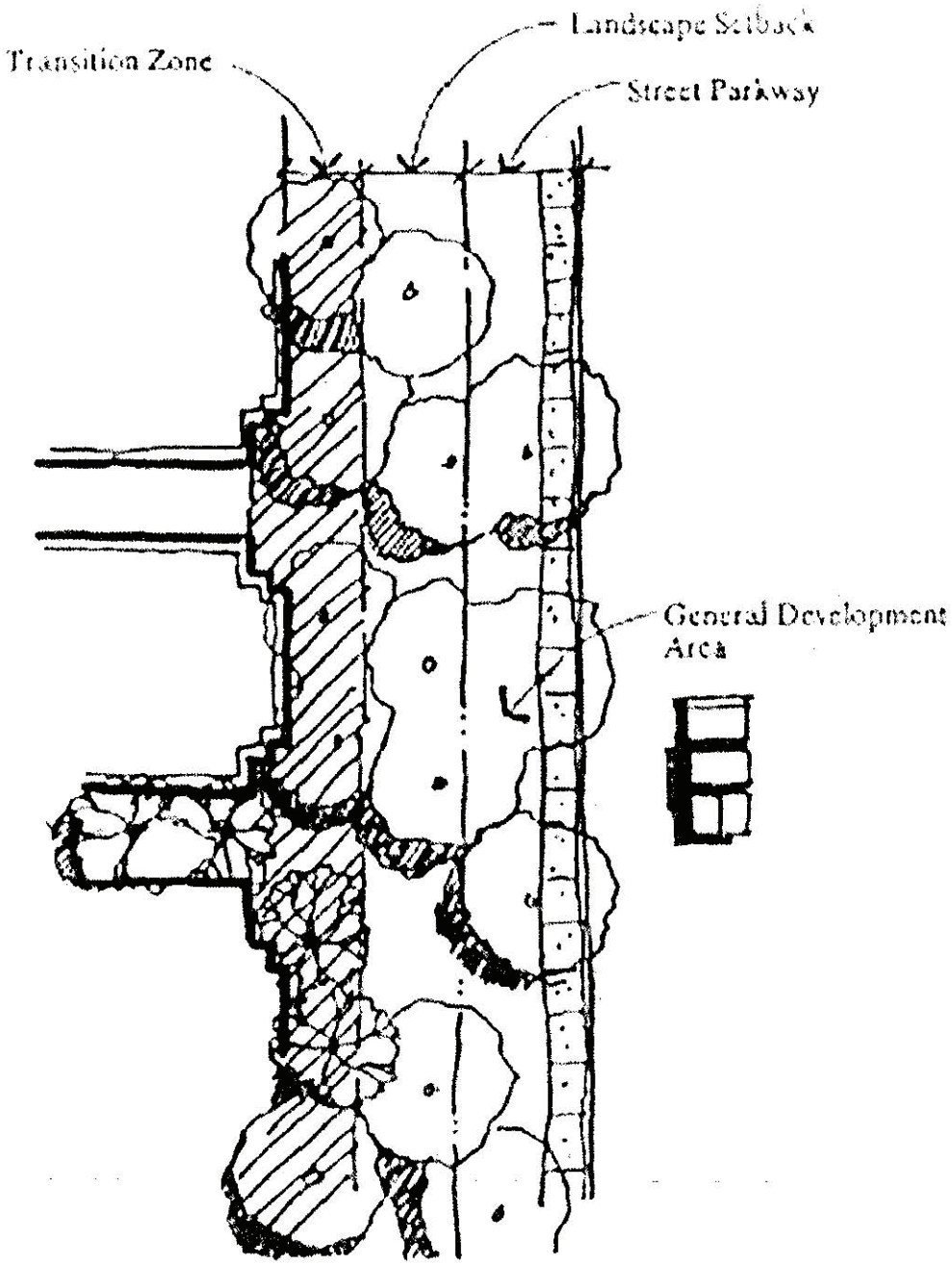


Figure 5-33 Onsite Landscaping Standards

5.4.2 Water Conservation Measures

The "MVF" employs an aggressive approach to water conservation. Every element of the landscape program has been evaluated to determine how to achieve the project's landscape goals while maintaining maximum water efficiency. From the formulation of the overall landscape concept, through each level of the design process, to the day-to-day maintenance practices of the installed materials, conservation of limited water resources is a primary focus. At maturity, the landscaping at the "MVF" project will provide a strong, clean,

simple design element, demonstrating the "MVF" commitment to the creation of a sustainable neighborhood environment.

The landscape program will incorporate the following design elements and practices to minimize the use of limited water resources:

Project Design:

- Design project so that pads, streets and other paved areas drain to landscape areas, medians and parkways.
- Maximize water harvesting, detention and treatment techniques throughout the project.
- Direct rooftop and parking area runoff to bio-swales, basins or landscaped areas

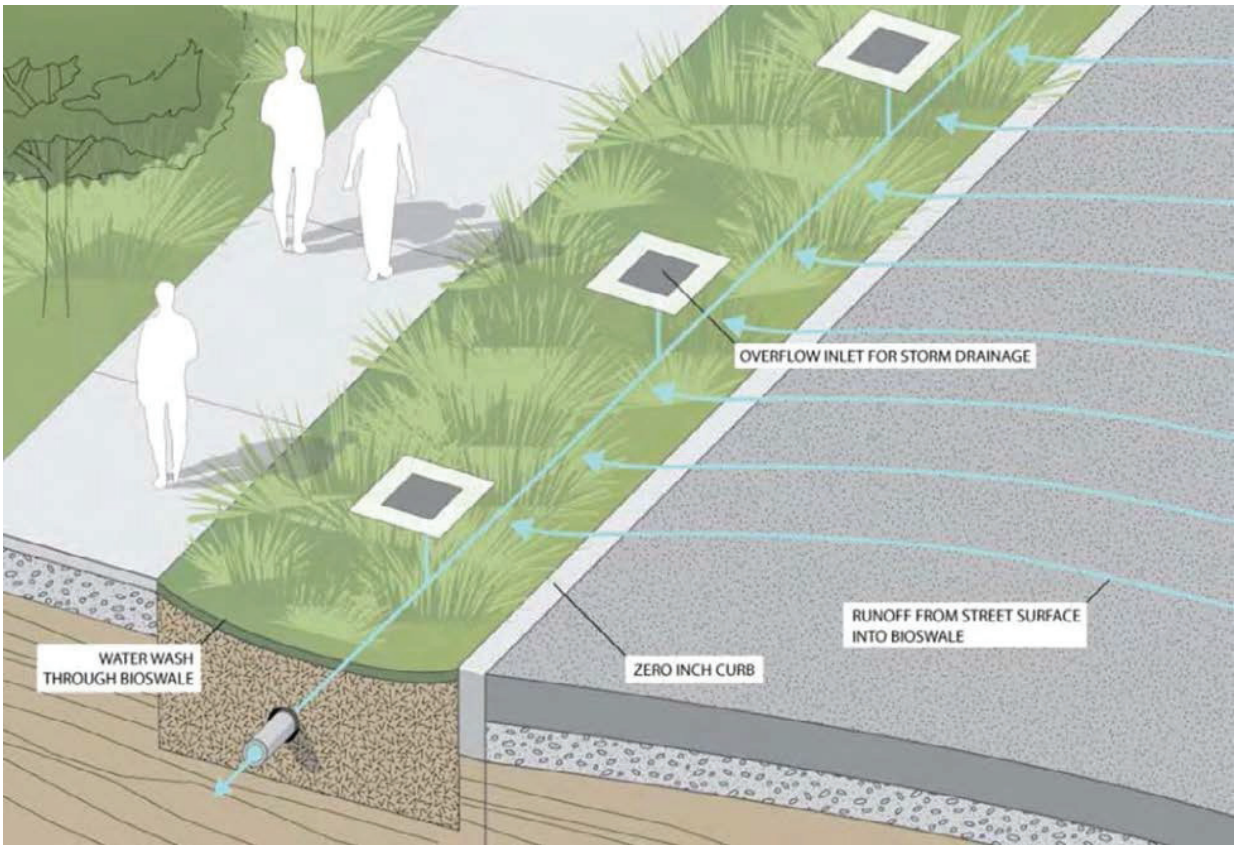


Figure 5-34 Off-site Water Management Plan

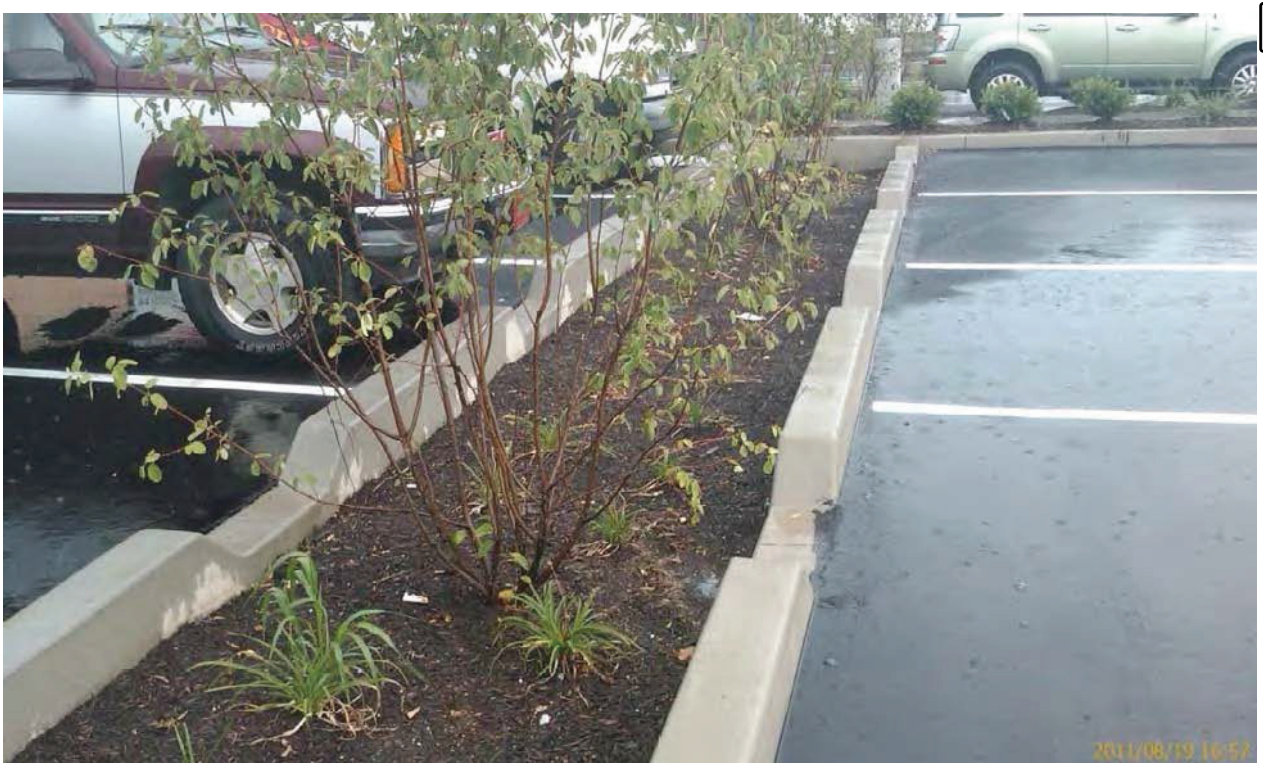


Figure 5-35 Example of Bio-swale

5.4.3 Landscape Criteria

Onsite landscaping is to be coordinated in a manner that enhances overall continuity of development in the "MVF," while providing for the individual identity and needs of each project within. The design must address the following criteria.

- Landscaping should be used to reinforce site planning principles, such as using trees to define parking lots and drive aisles.
- Plant materials for on-site landscaping are to be selected from the Plant Selection List, Section 5.4.4.
- Flexibility in the choice of plant materials is limited along street frontages and site perimeters to enhance landscaping coordination along common frontages, but increases toward the site interior to accommodate individual design.
- Landscaping in parking areas shall comply with the standards contained in the Municipal Code.
- Planting areas for vines, shrubs, and trees is required at the rear and sides of walled enclosures, including trash enclosures.
- Comprehensive planting, including trees, is required along all screen walls, buildings and site perimeters.
- All projects which include designated truck loading areas shall screen such areas from view from adjacent public streets and from onsite visitor parking and building entry areas. Such screening shall be accomplished with solid block walls and opaque metal gates.
- Landscaping within truck loading areas, not visible from public view, shall be designed to be sustainable without artificial irrigation, relying on rainfall

and runoff from adjacent impervious surfaces (i.e. truck yards and building roofs); landscaping is not required for gated truck courts.

- The landscape design shall also incorporate sustainable techniques to capture and direct rainfall runoff to these landscape areas. These areas may include slopes, water quality basins and drainage facilities. Rock or organic mulch shall be placed between plantings to provide coverage and erosion protection.
- Landscaping in visitor parking areas and any other areas visible from public view shall have a higher level of landscape treatment and shall utilize an automatic irrigation system to maintain the desired level of landscape appearance. The landscape design shall incorporate sustainable design techniques to capture and direct rainfall runoff to landscape areas, reducing the need for supplemental irrigation.

5.4.4 Landscape Planting

All trees to be 15 gallon, minimum, unless otherwise noted.

Evergreen Trees

• Pinus Halepensis	Aleppo Pine
• Acacia Baileyana	Bailey Acacia
• Geijera parviflora	Australian Willow
• Pinus canariensis	Canary Island Pine
• Schinus molle	California Pepper Tree
• Tristania conferta	Brisbane Box
• Schinus molle	California Pepper
• Quercus ilex	Holly Oak
• Rhus lancea	African Sumac
• Pinus eldarica	Mondell Pine
• Rhaphiolepis 'Majestic Beauty'	Indian Hawthorn
• Washingtonia robusta	Mexican Fan Palm
• Chilopsis linearis	Desert Willow
• Magnolia grandiflora	Southern Magnolia

Deciduous Trees

• Bauhinia variegata	Purple Orchid Tree
• Eucalyptus nicholii	Red Ironbark
• Koelreuteria paniculata	Golden Rain Tree
• Liquidambar styaciflua	American Sweetgum
• Cinamomum camphora	Camphor Tree
• Jacaranda mimosifolia	Jacaranda
• Albizia julibrissin	Mimosa
• Lagerstroemia indica	Crape Myrtle
• Platanus racemosa	California Sycamore
• Platanus acerifolia	London Plane Tree
• Cercidium 'Desert Museum'	Palo Verde
• Gleditsia triacanthos	Honey Locust
• Cercis occidentalis	Western Redbud

Shrubs

• Escallonia fradesi	NCN
• Heuchera spp.	Coral Bells
• Lantana spp.	Lantana
• Ligustrum japonicum 'Texanum'	Texas Privet
• Dietes iridioides	Fortnight Lily
• Nandina domestica-dwarf cultivars	Dwarf Heavenly Bamboo
• Raphiolepis indica 'Clara'	Indian Hawthorn
• Leucophyllum texanum	Texas Ranger
• Salvia greggii	Autumn Sage
• Rosmarinus 'Tuscan Blue'	Rosemary
• Dodonaea viscosa	Hopseed Bush
• Callistemon 'Little John'	Bottle Brush
• Muhlenbergia rigens	Deer Grass
• Muhlenbergia capillaris	Pink Muhly

- Westringia fruticosa — Coast Rosemary
- Bougainvillea spp — Bougainvillea
- Aloe spp.
- Encelia farinosa — Brittlebush

Ground Covers

- Leymus condensatus 'Canyon Prince' — Lyme Grass
- Myoporum parvifolium — NCN
- Trachelospermum jasminoides — Star Jasmine
- Baccharis pilularis 'Twin Peaks' — Dwarf Coyote Brush
- Senecio mandraliscae — NCN
- Rosmarinus officinalis 'Prostratus' — Prostrate Rosemary
- Bougainvillea spp. — Bougainvillea

5.4.5 Minimum Landscape Areas

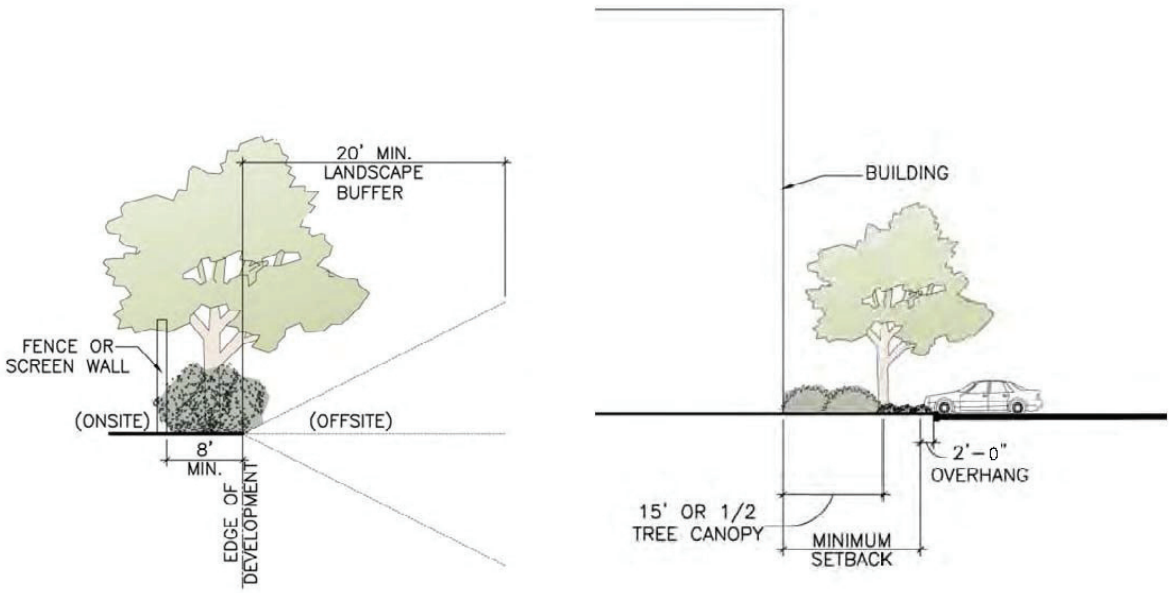
If parking or access drives are located between any building and a public street frontage, a 15-foot minimum landscaping area is required between the parking or drive aisle and the building. On other sides of the building, a 10-foot minimum landscaping area is required between the parking or drive aisle and the building, except in loading areas.

Figure 5-36 Minimum Landscape Areas

1. A minimum landscape zone of 15 feet is required along building perimeters facing a roadway frontage.
2. A minimum landscape zone of 10 feet is required along all other building perimeters except loading areas.
3. A minimum landscape zone of 5 feet is required along all internal property lines.
4. A minimum flat landscape zone of 8 feet is required next to screen walls facing the street (Figure 5-44).

Note: If perpendicular parking spaces are located adjacent to the minimum landscape zone, then a 2'-0" minimum parking overhang is required in addition to the above measurements (17' 0", 12'-0" and 7'-0" respectively).

Trees along screen walls, buildings and site perimeters should be planted at 15 feet or half (1/2) the tree canopy spread from the face of building.



Left: Landscape Setbacks on Slopes
Right: Landscape Setbacks from Face of Building.
Figure 5-37 Landscape Setbacks

5.4.6 Furnishings

5.4.7 Site Furnishings

Site furnishings such as benches, tables, trash receptacles, planters, tree grates, kiosks, drinking fountains, and other pedestrian amenities should be integral elements of the building and landscape design, and placed at building entrances, open spaces and other pedestrian areas to create a pedestrian friendly environment. Site furnishings should not block pedestrian access or visibility to plazas, open space areas and/or building entrances and should be made of durable, weather–resistant materials.

5.5 On-site Lighting

5.5.1 Objectives

Exterior lighting is to be provided to enhance the safety and security of motorists, pedestrians and cyclists.

Lighting is intended to create a nighttime character that contributes to the identity and unity of the "MVF" as a quality business and retail location.

To reinforce identity and unity, all exterior lighting is to be consistent in height, spacing, color and type of fixture throughout the building site.

5.5.2 General On-site Lighting Parameters

A consistency in design elements should be reflected in all project components, including lighting. Individual project developers may select their own light fixtures but are encouraged to use those recommended in the following guidelines:

- Onsite lighting includes lighting for parking areas, vehicular and pedestrian circulation, building exteriors, service areas, landscaping, security and special effects.
- All exterior on-site lighting must be shielded and confined within site boundaries. No direct rays or glare are permitted to shine onto public streets or adjacent lots.
- Lighting fixtures are to be of clean, appropriate design.
- Lighting must meet all requirements of the City of Moreno Valley.
- Adjustable outdoor lighting fixture mounts are prohibited. All fixtures shall be permanently installed to maintain shielding requirements (except landscape and ornamental lighting), per Municipal Code, Chapter 9.08 General Development Standards.
- Lights mounted on the roof and to the roof parapet are not permitted.
- Wall-mounted light fixtures used to illuminate vehicular parking lots are not permitted, per Municipal Code, Chapter 9.08 General Development Standards.
- Wall-mounted utility lights that cause off-site glare are not permitted. "Shoebox" lights are preferred.
- Billboard lighting pointed upward is prohibited, per Municipal Code, Chapter 9.08 General Development Standards.
- All site, landscape or building exterior lighting should be of a configuration, style and finish color that complements the architectural theme and materials established by the building architecture.
- Parking lot light fixtures and screening shall comply with Moreno Valley Municipal Code Title 9 Planning & Zoning, Chapter 9.08 General Development Standards.
- Small scale walkway or building entry lighting is encouraged for safety and aesthetic purposes. Sandblasted concrete bollards or a fixture compatible with the selected parking lot fixture may be used where deemed appropriate.

- High intensity lighting should not be substituted for site or landscape lighting or general building exterior illumination, but should be limited to rear service areas or other similar locations.
- Lighting should be designed to avoid light spillover into adjacent properties. The use of shielded light fixtures will be necessary on parcels that adjoin residential neighborhoods.
- Pole bases may be round or square. Pole bases in planting areas may be no higher than 6 inches above grade.
- Both luminaires and poles are to be white with a clear bulb, per Municipal Code, Chapter 9.08 General Development Standards.
- All luminaires shall be metal halide or L.E.D.

5.5.3 Driveways and Parking Area Lighting

- Pole height at Driveways 25' Maximum
- Pole height at Parking Area 20' Maximum

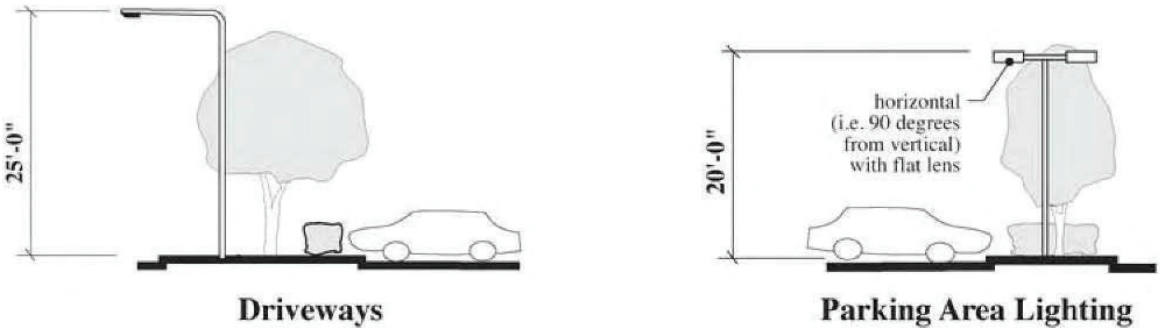


Figure 5-38 Parking Area Lighting

5.5.4 Pedestrian Circulation Lighting

- Pedestrian walkways and building entries will be illuminated to provide lighting for pedestrians and to clearly identify a secure route between parking areas and points of entry to the building.
- Walkway lighting must have cut-off fixtures mounted at a uniform height no more than eight (8) feet above the walkway.
- Building entries may be lit with soffit, bollard, step or comparable lighting.

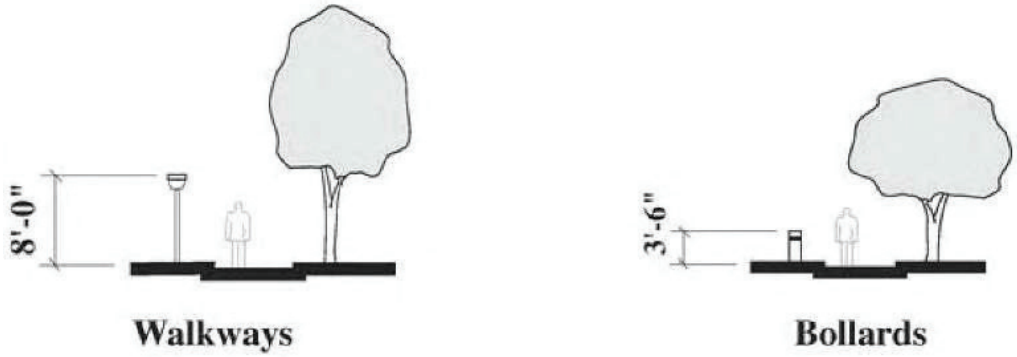


Figure 5-39 Pedestrian Area Lighting

- Step or bollard lighting shall be used to clearly illuminate level changes and handrails for stairs and ramps.
- Bollards may be used to supplement and enhance other pedestrian area lighting. Bollard height shall not exceed forty-two (42) inches.
- Courtyards, arcades and seating areas shall be illuminated to promote pedestrian use and safety. A variety of lighting may be used to create interest and special effects in coordination with the character and function of the area.
- Pedestrian lighting shall be subdued warm-white Mercury, LED, or incandescent lamps.

5.5.5 Architectural Lighting

- Architectural lighting effects are encouraged to promote nighttime identity and character.
- All exterior architectural lighting shall utilize indirect or hidden lighting sources. Acceptable lighting includes wall washing and overhead down lighting.
- Building entry areas should be lit so as to provide a safe and inviting environment.

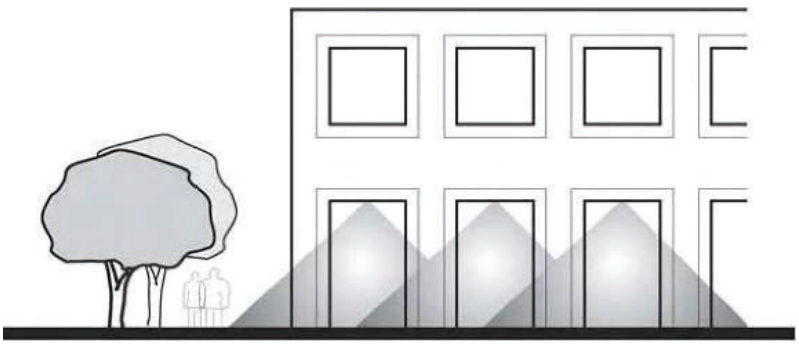


Figure 5-40 Illumination from building

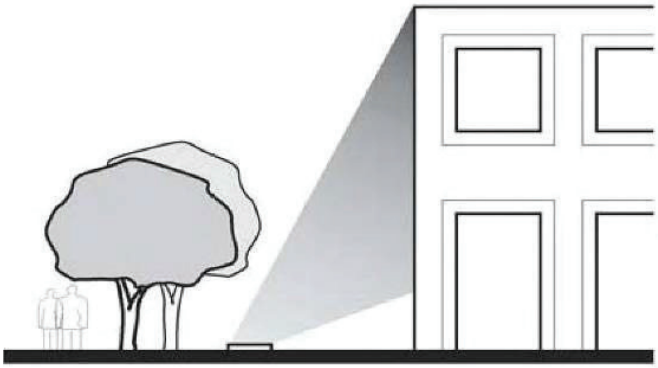


Figure 5-41 Illumination onto building

5.5.6 Service Area Lighting

Service area and security lighting must be visible only within the limits of the service area.

- Wall-mounted, security-type, service area lighting fixtures may be used only in screened service areas and only if direct light is kept within these areas. In all other areas, wall-mounted service lighting must consist of cutoff type fixtures.
- Service area and security lighting may not be substituted for pedestrian, architectural or parking area lighting.
- Freestanding fixtures shall be painted the same as parking area fixtures. Any wall-mounted fixtures should be compatible with the wall.

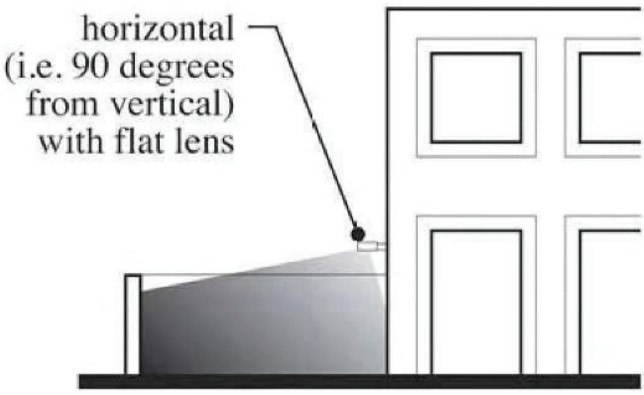


Figure 5-42 Service Area Lighting

5.5.7 Accent Lighting

Unique lighting may be used to feature architectural elements, landscaping, entries and pedestrian areas, provided it is compatible with all other lighting.
Accent lighting used in landscaping and pedestrian areas shall employ light sources such as Metal Halide, Quartz or L.E.D in order to accurately render plants, vegetation, and skin colors.

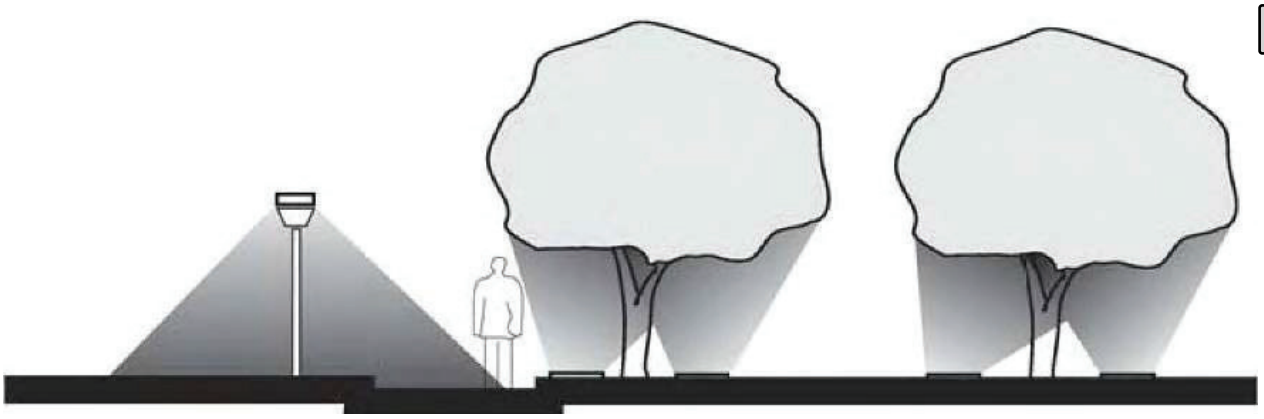


Figure 5-43 Pedestrian Path Lighting

Figure 5-44 Pedestrian Seating Area Lighting

5.6 On-site Utilities

5.6.1 Utility Connections and Meters

All utility connections and meters shall be coordinated with the development of the site and should not be exposed, except where required by the utility. Utility connections should be integrated into the building or screened by landscape.

5.6.2 Pad-Mounted Transformers and Meter Box Locations

Pad-mounted transformers and/or meter box locations shall be screened from view from surrounding properties and public rights-of-way. Utilities shall be located underground, wherever possible.

5.6.3 All Equipment shall be Internal to Buildings

All equipment shall be internal to buildings to the greatest extent possible. When unfeasible, all such equipment shall be screened and not prominently visible from public rights-of-way.

5.6.4 Utilities (including backflow preventers, detector check assemblies, transformers, etc.)

All utilities are to be installed underground. Easements for underground utilities that preclude the planting of trees may not be located where the design guidelines require the planting of trees. Any necessary above ground equipment such as detector check assemblies, backflow preventers, transformers, etc., shall be screened from view from public areas by landscaping.

Domestic water service shall be extended through development sites in an easement to EMWD. The water line and easement shall be placed in easily accessible locations, such as drive aisles. Fire service and domestic water services and meters shall tie into this line. This line may become part of a loop system and the property owner may need to tie into the public mainline to provide a loop water system to provide adequate water volumes to fire hydrants.

6.1 SUSTAINABILITY

It is the intent for this development to be a model of sustainability. While this goal is measured in many different ways and the elements of sustainability are constantly evolving, it remains the intent of the "MVF" to be on the forefront of environmentally sensitive development. The following are some ways individual projects can incorporate elements of sustainability:

- Promote public transportation as an alternate form of transportation.
- Encourage carpooling and provide charging stations for electric cars.
- Promote the riding of bicycles, through the provision of bike racks / storage.
- Implement the most current storm water management programs, including on-site water capture methodologies.
- Reduce the 'heat-island' effect by incorporating lighter paving materials where possible and light roofing materials on all structures.
- Employ adequate shielding features to ensure zero light spill offsite.
- Incorporate drought tolerant plant materials throughout.
- Minimize water use in restrooms, showers and changing rooms.
- Recommend that developers apply beyond code-required commissioning in order to ensure all mechanical and electrical equipment are operating efficiently and are not wasting energy.
- Incorporate on-site renewable energy.
- Employ a recycling program.
- Divert construction waste from landfills, per Municipal Code, Chapter 8.80 - Recycling and Diversion of Construction and Demolition Waste.
- Incorporate recycled materials where feasible.
- Ensure high indoor air quality standards.
- Incorporate low-emitting adhesives, paints, coatings, and flooring systems.
- Increase the amount of day-light into the interior spaces.
- Increase the amount of interior space with exterior views.
- Incorporate the best available technologies or best management practices where feasible.
- Utilize onsite electric power sources as much as possible to minimize the use of portable, mobile power generators.
- Apply water conservation measures, as discussed in Section 5.4.2 - Water Conservation Measures.

7.1 SIGNAGE

Refer to **Appendix 1 – Signage Package** reflecting the general design approach and objective for reference. All signage in this Specific Plan shall conform to an approved Sign Program on file with the City of Moreno Valley.

7.2 Entry Monument Signage

One type of monument sign will be incorporated into all of the entry treatments. The design criteria for this sign are as follows:

- The maximum height of the front wall panel will be maximum 7 feet, with each end panel sloping to a minimum height of 4 feet. The length of the entire wall will be maximum 30 feet.
- The front panel will display the project's name and logo. Horizontal reveals will be featured as accents.
- Sign lettering will be a contrasting color which complements the natural tones of the stone and signage elsewhere in the development.
- The project's logo will be a raised form on the finished surface.

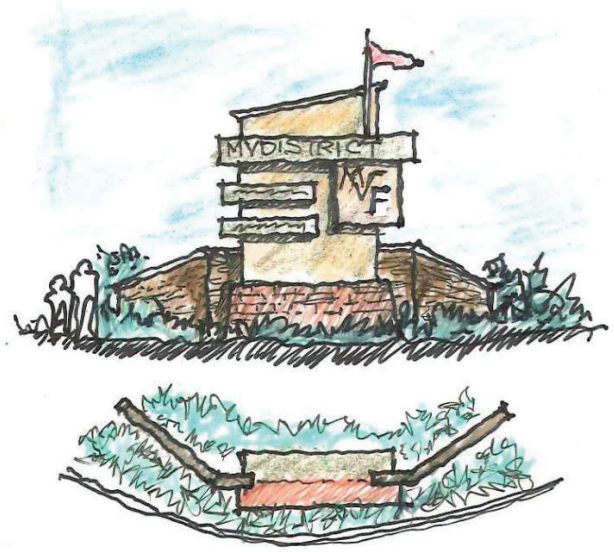


Figure 7-1 Entry Monument Signage

7.3 Temporary Marketing Signage

Temporary marketing signage will utilize durable, yet inexpensive materials and construction techniques.

The signs will be built according to the following guidelines:

- Temporary signs shall not be located in public rights-of-way, in streetside landscape areas or in required parking spaces and shall, in all ways, comply with appropriate provisions of the city's sign ordinance, per Municipal Code, Chapter 9.12 – Sign Regulations.
- The temporary marketing sign(s) will be 8 inches deep with a maximum height of 16 feet 6 inches and a maximum width of 9 feet.
- Signs will be constructed of wood with plywood sign faces, set on a wooden base. The entire sign will be painted white.

- All temporary signs, including "coming soon" signs shall be regulated by the city's sign ordinance.

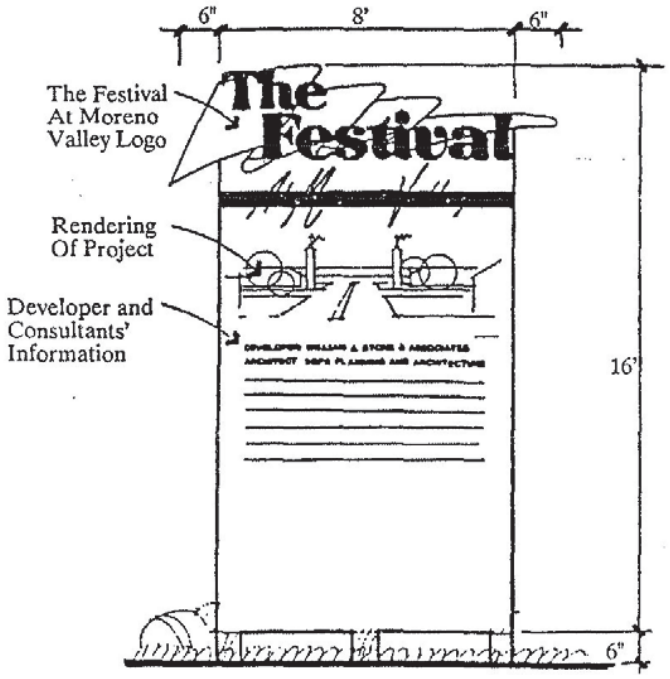


Figure 7-2 Temporary Signage

7.4 Regulatory Signage

All regulatory signage (traffic control, public safety, etc.) shall comply with Municipal Code standards, Chapter 9.12.

7.5 State Highway Signage

There will be two (2) State Highway Monument Signs identifying the "MVF" and visible from both eastbound and westbound traffic on the 60 State Highway. The signs should be located within six hundred sixty (660) feet from a State Highway right-of-way and will not exceed forty-five (45) feet in height and one hundred fifty (150) feet in sign area, per Municipal Code, Chapter 9.12 – Sign Regulations. The design criteria for these signs shall be set forth in an exhibit to this document or along with an application for permits from the City in the future.

8.1 PROJECT PHASING

8.2 Infrastructure Phasing

Each project within the "MVF" will be supported by the requisite infrastructure as needed, subject to federal, state and local codes.

Each plot plan will include proposals for specific infrastructure improvements needed to support each proposed building.

These improvements shall be consistent with the overall infrastructure plans serving the "MVF."

9.1 PROPERTY MAINTENANCE

9.2 On-site Improvements

On-site improvements shall be maintained by the property owner or tenant, pursuant to private contractual terms.

9.3 Common Area Improvements

Major slopes, landscape areas, community entries, community signage, etc., shall be maintained by an owner assigned design review agent or through a Business Improvement District (BID).

9.4 Streets

Public streets (curb-to-curb), public sidewalks shall be maintained by the City of Moreno Valley.

10.1 IMPLEMENTATION

10.2 Purpose and Intent

This section contains the procedures for the processing of discretionary development applications to implement the terms of the "MVF" Specific Plan. The City will review all development within the project to ensure compliance with the provisions of the Specific Plan.

10.3 Approvals required

All development within the "MVF" is subject to the approval of a Plot Plan or a Conditional Use Permit, in conformance with these procedures. Modifications to the development standards contained in the Specific Plan may be requested by any property owner and may be approved by the City through the variance processes described in Section 11.3.3 herein.

10.4 Development Review Process

10.4.1 Subdivisions

All proposed subdivisions within the "MVF" shall be processed in accordance with the provisions of the State of California Subdivision Map Act and the Municipal Code.

10.4.2 Plot Plans

- Unless a Conditional Use Permit is required, a development proposal within the "MVF" shall be subject to the approval of a Plot Plan as described herein. Property and building maintenance activities such as painting, site or building repairs, parking lot resurfacing/restriping, and landscape maintenance and repair, etc. are exempt from these regulations.
- The Plot Plan process is intended to ensure that all development proposals comply with all applicable standards and guidelines contained in this Specific Plan, and are not detrimental to public health, safety or welfare.
- Plot Plan applications shall be submitted to the City in conformance with the procedures contained in the Municipal Code.
- A Plot Plan shall be approved within 90 days if all of the following findings are made:
  - The proposed project is consistent with the goals, objectives and policies of the General Plan,
  - The proposed project complies with this Specific Plan and other applicable regulations, and
  - The proposed project will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity;
  - The project conforms with any applicable provisions of any city redevelopment plan;
  - The location, design and operation of the proposed project will be compatible with existing and planned land uses in the vicinity.
  - Public Notice of plot plan public hearing and the proposed environmental determination shall be provided. Noticing shall be in

compliance with the Municipal Code, Chapter 9.02 – Permits and Approvals.

10.4.3 Variances

Alternatives to development standards and regulations contained herein may be approved through the following variance procedures. Variance applications may be processed along with Plot Plan applications, or as separate applications.

10.3.3.1 Administrative Variances

- The purpose of an administrative variance is to provide an administrative procedure for adjustments to certain regulations in this Specific Plan in order to prevent hardships that might result from a strict or literal interpretation and enforcement of those regulations.
- The standards and procedures for the submittal, review and approval of an Administrative Variance shall be as contained in Section 9.02.090 of the Municipal Code.

10.3.3.2 Other Variances

- All other variance applications shall be processed in accordance with Section 9.02.100 of the Municipal Code.

10.3.4 Appeals

- Any interested party may appeal any administrative decision to the Planning Commission subject to the provisions of Section 9.02.240 of the Municipal Code.
- Any interested party may appeal any decision of the Planning Commission to the City Council subject to the provisions of Section 9.02.240 of the Municipal Code.
- The decision of the City Council is final.

10.4 Other Uses

All uses established within the "MVF" shall be consistent with the General Plan and this Specific Plan. The Community Development Director shall be responsible for all consistency determinations pursuant to Section 9.01 of the Municipal Code.

10.5 Additional Items

Items not addressed in the Specific Plan shall be subject to the regulations of the Municipal Code.

10.6 Specific Plan Amendments

Any proposal to amend this Specific Plan shall be processed in the same manner as the original approval subject to the provisions of Chapter 9.13 of the Municipal Code.

Overhead power lines 12kV/115 kV: Power lines that distribute or transmit electrical power into and through the "MVF" project. All 12 kV distribution lines will be installed underground, while 115 kV transmission lines must remain aboveground due to the heat generated by electrical energy flows in the lines.

Accessory Structure: A separate building, the use of which is incidental to that of the main building on the same lot or premises, and which is used exclusively by the occupant of the main building.

Ancillary Structures: See accessory structure.

Bio-detention Facilities: Soil and plant-based filtration devices that remove pollutants through a variety of physical, biological, and chemical treatment processes. These facilities normally consist of a grass buffer strip, sand bed, ponding area, organic layer of mulch layer, planting soil, and plants.

Class II bikeways: A striped lane located along the right shoulder of a roadway designated for use by bicyclists.

CNG/LNG: Abbreviation for Compressed Natural Gas (CNG) and Liquefied Natura Gas (LNG).

Collector Roads: A street which is intended to serve intensive residential land use, multiple-family dwellings, or to convey traffic through a subdivision to roads of equal capacity or greater. It may also serve as a cul-de-sac in industrial or commercial use areas but shall not exceed six hundred sixty (660) feet in length when so used. Minimum right-of-way width shall be sixty-six (66) feet, per Municipal Code, Chapter 9.15.

Cut-off fixtures: A lighting fixture designed to eliminate light rays from escaping above a horizontal plane.

Detention basins: A drainage feature that has been designed to allow large flows of water to enter but limits the outflow by having a small opening at the lowest point of the outlet structure.

Facades: An exterior side of a building, usually, but not always, the front.

Fenestration: The design of openings in a building or wall, generally including windows, doors, louvers, vents, openings, skylights, storefronts, etc.

Floor area ratio: A measure of the intensity of development of a particular site. The ratio is calculated by dividing the building area by the parcel area, using the same unit of measure (acres, square feet, etc.)

Heavy truck: A truck weighing 26,001 and 33,000 pounds unloaded.

Impervious paved surface: Artificial surfaces such as pavement (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone. Also includes building rooftops and other structures that prevent water from penetrating into the ground surface.

Infiltration Basin: A shallow impoundment that is designed to infiltrate storm water. Infiltration basins use the natural filtering ability of the soil to remove pollutants in storm water runoff.

Jobs/housing balance: The ratio between the number of housing units and the number of full-time jobs in an identified geographic area. The ratio is calculated by dividing the number of full-time jobs by the number of housing units.

Luminaire: A light fixture generally affixed to a pole used in exterior areas to illuminate streets, driveways, walkways, and parking areas.

Medium trucks: A Truck weighing 19,500 and 26,000 pounds or more unloaded.

Multi-Use Trails: A planned city-wide system of trails that accommodate pedestrian, equestrian and bicycle users. See the Parks, Recreation and Open Space Element of the City's General Plan.

Native landscape: The use of plant materials found to grow naturally in an area that are adapted to a particular environment and are able to live on natural rainfall, thereby reducing the need for mechanical irrigation.

Off-project: Refers to areas outside of the "MVF." Generally applies to infrastructure improvements needed to implement the "MVF" project that will extend beyond the "MVF" boundary.

Off-site: Refers to those portions of the property that are not within building sites, including common areas, open space, public areas, streetscapes, etc.

On-site: Refers to individual building sites within the "MVF."

Specific Plan: Refers to the "MVF" Specific Plan which covers 2,610 acres of land in eastern Moreno Valley, and provides the land use regulations for the development of a master planned development.

Subdivision Map Act: The body of law (Government Code Section 66410-66499.58) that regulates the subdivision of land in California.

Truck Routes/Truck Route Ordinance: Streets that have been officially designated by the City for use by vehicles with a gross vehicle weight of three tons or more. See Chapter 12.36 of the Municipal Code.

MVF: The project name for the development to be established under the "MVF" Specific Plan.

Sergio has several comments on signage. Need to get back to the signage company.

FESTIVAL PLAZA

SIGN SIGNAGE TABLE AND CONTENTS

24138 HEMLOCK AVE. MORENO VALLEY CA.

SIGNAGE TYPE	PAGE DESCRIPTION	QUANTITY OF SIGNS
SIGNAGE PAGE INDEX	DESCRIPTION OF SIGNAGE CONTENTS	
SIGNAGE LOCATION	SITE LOCATION PLAN/SIGN LOCATIONS	
SIGN TYPE A	FREEWAY PYLON	2
SIGN TYPE B	STREET PYLON	1
SIGN TYPE C	ENTRY MONUMENT	5
SIGN TYPE D	TENANT MONUMENT	5

PROJECT TITLE
FESTIVAL PLAZA
24138 HEMLOCK AVE.
MORENO VALLEY, CA.
ZIP

JOB NUMBER 50244
SALES CLAUDE ELLENA
DRAWN BY G. RICHARDSON DATE 11/1/17
SCALE AS NOTED
FOLDER S:\ENCORE\FESTIVAL PLAZA\50244\50244
FILE 50244.cdr
DESIGN# 001

REVISIONS

DATE	BY	DATE	BY
ORIGINAL	GR		

APPROVAL

This proof drawing is for customer review and approval before fabrication begins. Encore Image will not be responsible for problems or discrepancies that could have been reasonably prevented by the proper review of this document.

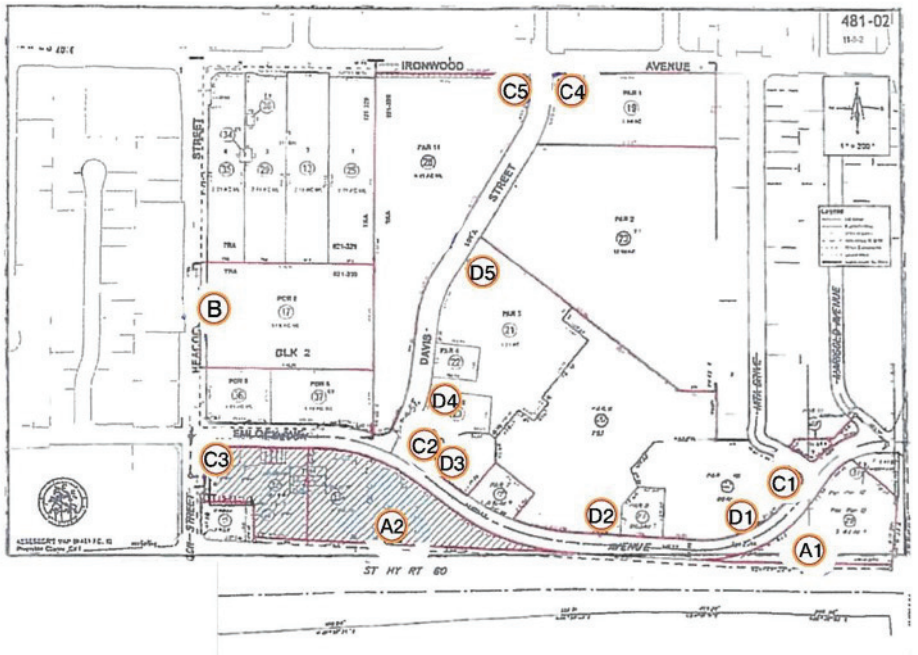
- The customer shall provide accessibility to remote transformers and/or ballasts for installation, final inspection and service.
- Dedicated sign circuits with a ground wire to be provided within 6' of the display(s) by the customer.
- Sketch may vary from specified colors. Photos are for visual reference only, size and placement of signs may vary.

SIGNATURE DATE

PRINTED NAME TITLE

All electrical signs shall comply with National Electrical Code (Article 600) and manufactured according to Underwriters Laboratories U.L. 48 standard and appropriately labeled.

Encore IMAGE
303 West Main Street
P.O. Box 9297
Ontario, California 91762
800-791-1187
Fax 909-988-6376
STATE LICENSE #947727
www.encoreimage.com



SIGN	SCOPE OF WORK / DESCRIPTION
A	MANUFACTURE AND INSTALL (1) SET OF INTERNALLY ILLUMINATED CHANNEL LETTERS

PROJECT TITLE

FESTIVAL PLAZA
24136 HEMLOCK AVE.
MORENO VALLEY, CA.
ZIP

JOB NUMBER 50244

SALES: CLAUDE ELLENA
DRAWN BY: G.RICHARDSON DATE: 11/1/17
SCALE: AS NOTED
FOLDER: S/SKETCHES/FESTIVAL PLAZA/50244/50244
FILE: 50244-CDR
DESIGN #: 002

REVISIONS

DATE	BY	DATE	BY
ORIGINAL	GK		

APPROVAL

This proof drawing is for customer review and approval before fabrication begins. Encore Image will not be responsible for problems or discrepancies that could have been reasonably prevented by the proper review of this document.

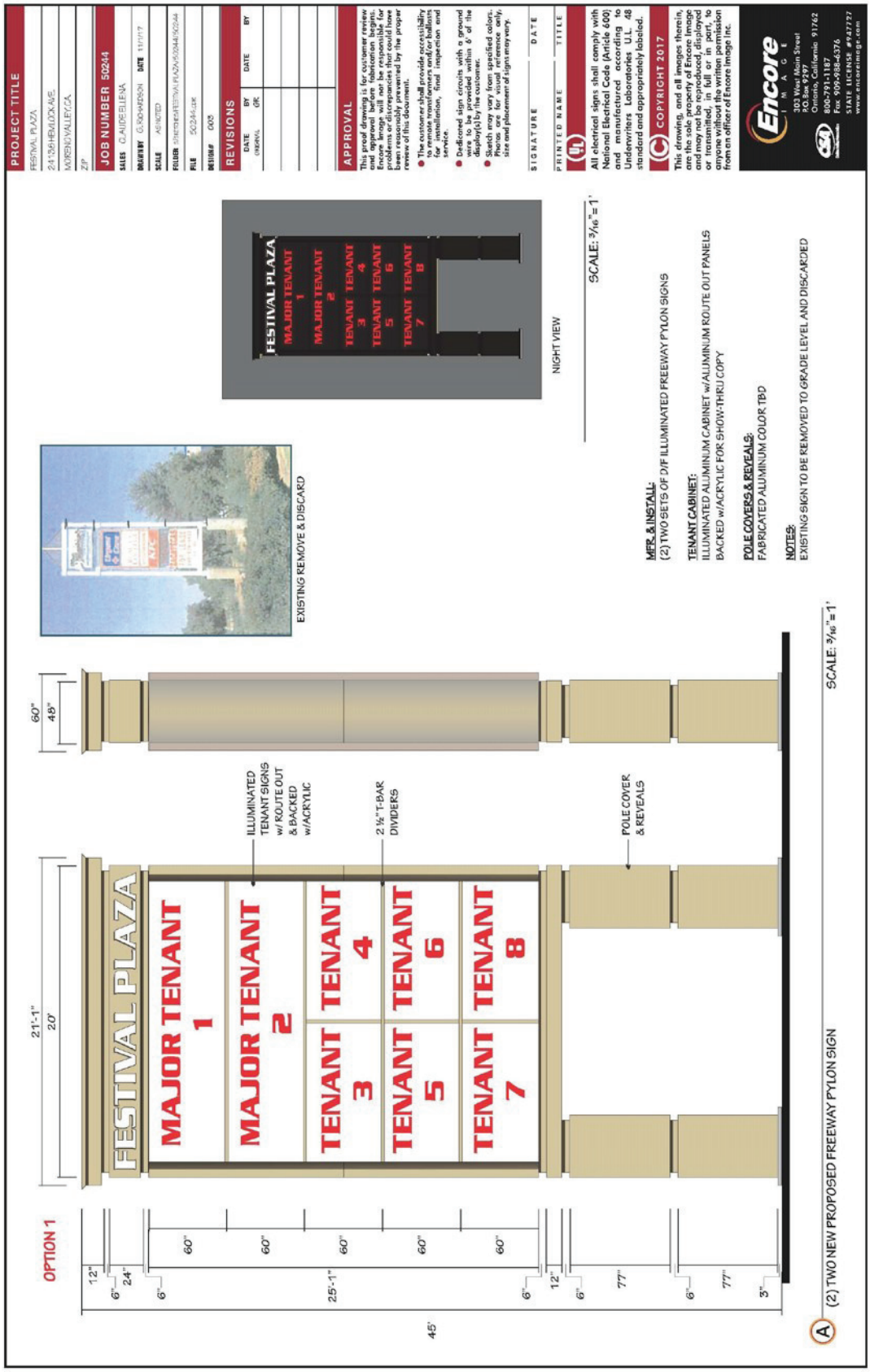
- The customer shall provide accessibility to remote transformers and/or ballasts for installation, final inspection and service.
- Dedicated sign circuits with a ground wire to be provided within 6' of the display(s) by the customer.
- Sketch may vary from specified colors. Photos are for visual reference only, size and placement of signs may vary.

SIGNATURE DATE

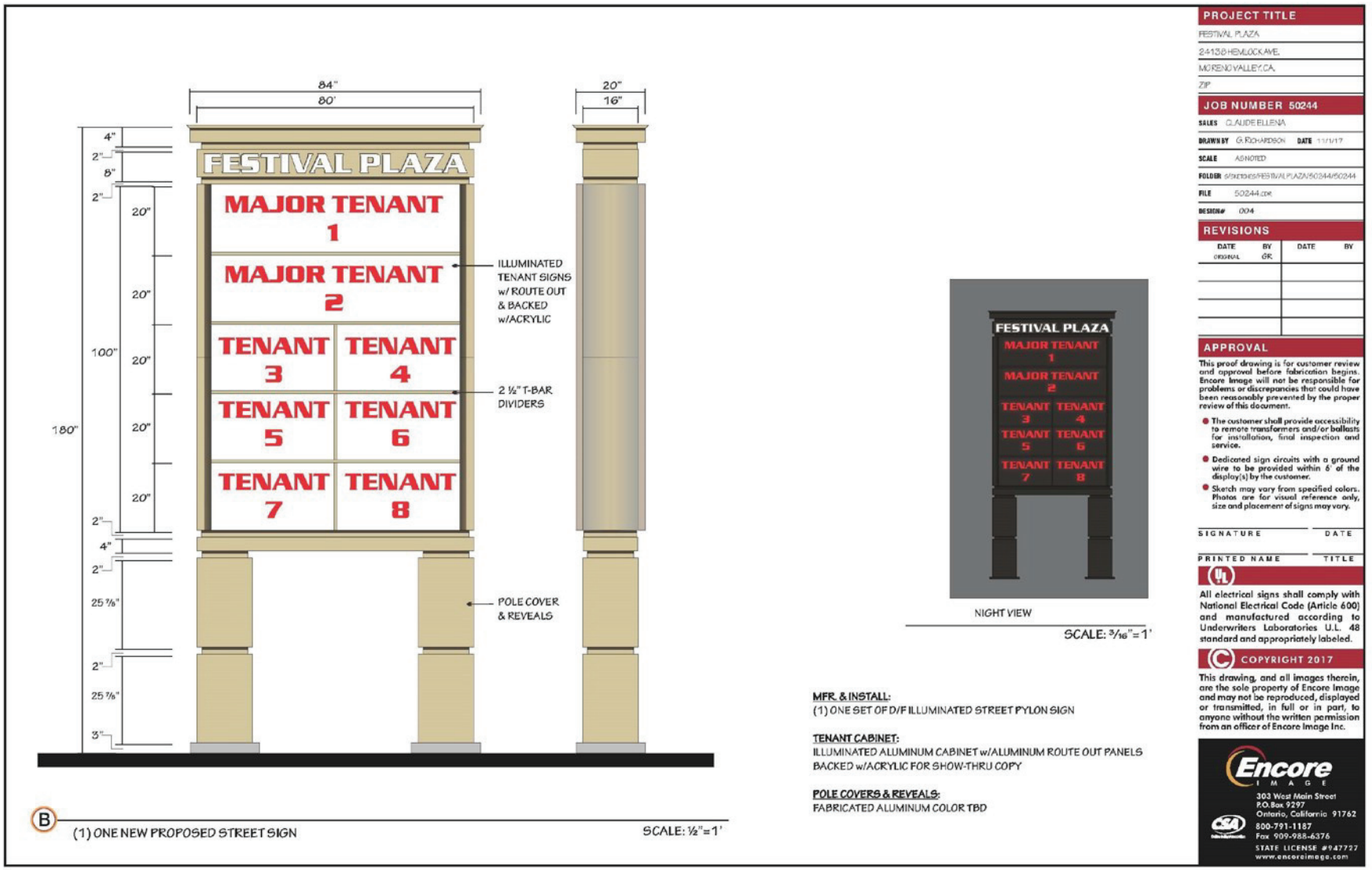
PRINTED NAME TITLE

All electrical signs shall comply with National Electrical Code (Article 600) and manufactured according to Underwriters Laboratories U.L. 48 standard and appropriately labeled.

Encore IMAGE
303 West Main Street
P.O.Box 9297
Ontario, California 91762
800-791-1187
Fax 909-988-6376
STATE LICENSE #947727
www.encoreimage.com



Attachment: Specific Plan Amendment (SP 205) [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205 Amendment)


84"
80'
20"
16"
4"
2"
8"
2"
20"
20"
20"
20"
100"
180"
2"
4"
2"
25 7/8"
2"
25 7/8"
3"
FESTIVAL PLAZA
MAJOR TENANT 1
MAJOR TENANT 2
TENANT 3
TENANT 4
TENANT 5
TENANT 6
TENANT 7
TENANT 8
ILLUMINATED TENANT SIGNS w/ ROUTE OUT & BACKED w/ACRYLIC
2 ½" T-BAR DIVIDERS
POLE COVER & REVEALS
B
(1) ONE NEW PROPOSED STREET SIGN
SCALE: ½"=1'
FESTIVAL PLAZA
MAJOR TENANT 1
MAJOR TENANT 2
TENANT 3
TENANT 4
TENANT 5
TENANT 6
TENANT 7
TENANT 8
NIGHT VIEW
SCALE: 3/16"=1'
MFR. & INSTALL:
(1) ONE SET OF D/F ILLUMINATED STREET PYLON SIGN
TENANT CABINET:
ILLUMINATED ALUMINUM CABINET w/ALUMINUM ROUTE OUT PANELS BACKED w/ACRYLIC FOR SHOW-THRU COPY
POLE COVERS & REVEALS:
FABRICATED ALUMINUM COLOR TBD
PROJECT TITLE
FESTIVAL PLAZA
24138 HEMLOCK AVE.
MORENO VALLEY, CA.
ZIP
JOB NUMBER 50244
SALES CLAUDE ELLENA
DRAWN BY G.RICHARDSON DATE 11/1/17
SCALE AS NOTED
FOLDER G:\AUTOCAD\FESTIVAL PLAZA\50244\50244
FILE 50244.DR
DESIGN# 004
REVISIONS
DATE BY DATE BY
ORIGINAL GR
APPROVAL
This proof drawing is for customer review and approval before fabrication begins. Encore Image will not be responsible for problems or discrepancies that could have been reasonably prevented by the proper review of this document.
The customer shall provide accessibility to remote transformers and/or ballasts for installation, final inspection and service.
Dedicated sign circuits with a ground wire to be provided within 6' of the display(s) by the customer.
Sketch may vary from specified colors. Photos are for visual reference only, size and placement of signs may vary.
SIGNATURE DATE
PRINTED NAME TITLE
All electrical signs shall comply with National Electrical Code (Article 600) and manufactured according to Underwriters Laboratories U.L. 48 standard and appropriately labeled.
COPYRIGHT 2017
This drawing, and all images therein, are the sole property of Encore Image and may not be reproduced, displayed or transmitted, in full or in part, to anyone without the written permission from an officer of Encore Image Inc.
Encore IMAGE
303 West Main Street
P.O.Box 9297
Ontario, California 91762
800-791-1187
Fax 909-988-6376
STATE LICENSE #947737
www.encoreimage.com


OPTION 1
190"
180"
34"
24"
8 ½"
3"
30"
77"
3"
30"
3"
FESTIVAL PLAZA
(5) FIVE NEW PROPOSED ENTRY MONUMENT SIGN
SCALE: 1/2"= 1'-0"
MFR. & INSTALL:
(5) FIVE SETS OF D/F ILLUMINATED ENTRY MONUMENT SIGNS
CABINET:
ILLUMINATED ALUMINUM CABINET w/ALUMINUM ROUTE OUT PANELS
BACKED w/ACRYLIC FOR SHOW-THRU COPY
POLE COVERS & REVEALS:
FABRICATED ALUMINUM COLOR TBD
FESTIVAL PLAZA
NIGHT VIEW
SCALE: NTS
PROJECT TITLE
FESTIVAL PLAZA
24138 HEMLOCK AVE.
MORENO VALLEY, CA.
ZIP
JOB NUMBER 50244
SALES CLAUDE ELLENA
DRAWN BY G. RICHARDSON DATE 11/13/17
SCALE AS NOTED
FOLDER SKETCHES/FESTIVAL PLAZA/50244/50244
FILE 50244.cdr
DESIGN# 005
REVISIONS
DATE BY DATE BY
ORIGINAL GR.
APPROVAL
This proof drawing is for customer review and approval before fabrication begins. Encore Image will not be responsible for problems or discrepancies that could have been reasonably prevented by the proper review of this document.
The customer shall provide accessibility to remote transformers and/or ballasts for installation, final inspection and service.
Dedicated sign circuits with a ground wire to be provided within 6' of the display(s) by the customer.
Sketch may vary from specified colors. Photos are for visual reference only, size and placement of signs may vary.
SIGNATURE DATE
PRINTED NAME TITLE
All electrical signs shall comply with National Electrical Code (Article 600) and manufactured according to Underwriters Laboratories U.L. 48 standard and appropriately labeled.
COPYRIGHT 2017
This drawing, and all images therein, are the sole property of Encore Image and may not be reproduced, displayed or transmitted, in full or in part, to anyone without the written permission from an officer of Encore Image Inc.
Encore IMAGE
303 West Main Street
P.O. Box 9297
Ontario, California 91762
800-791-1187
Fax 909-988-6376
STATE LICENSE #947727
www.encoreimage.com

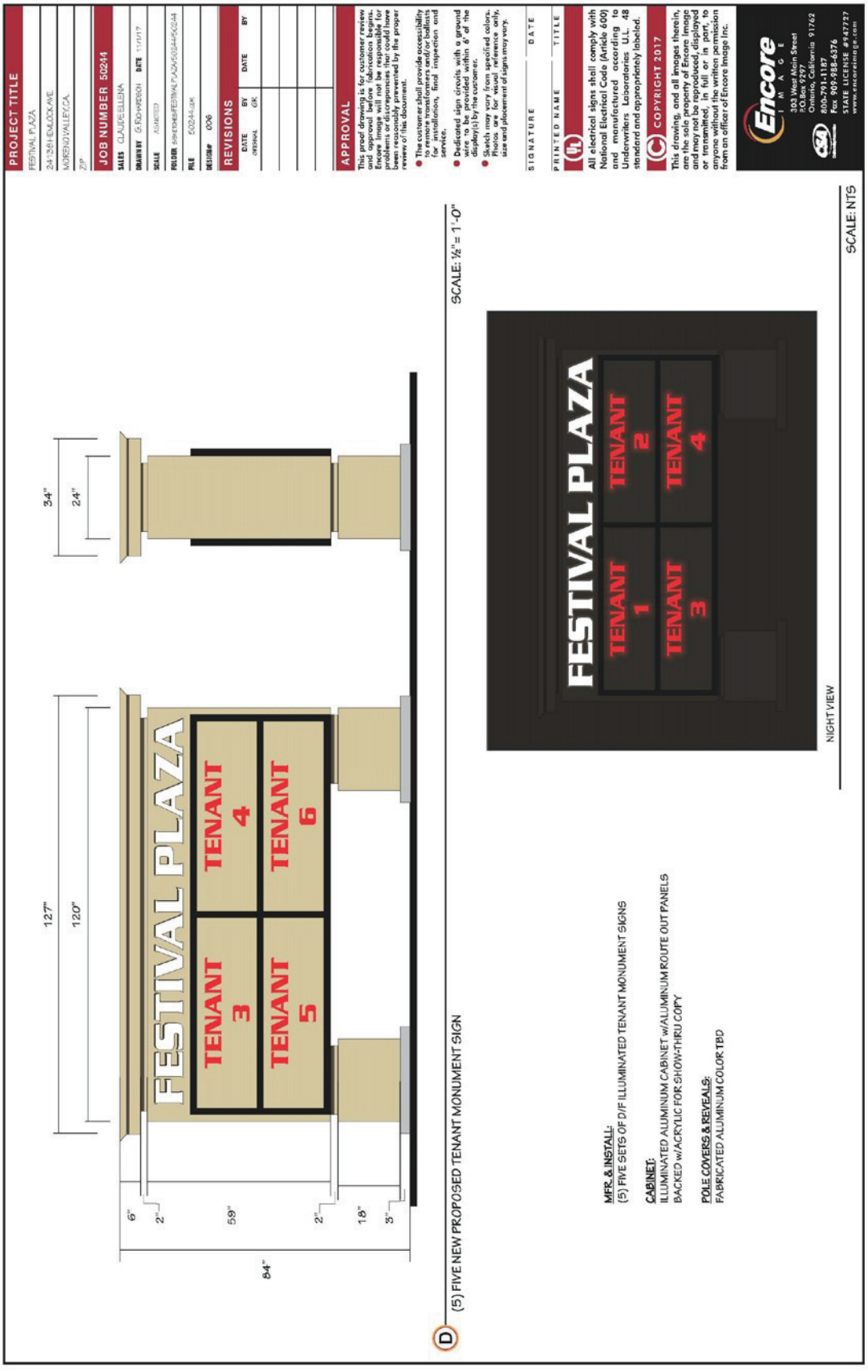


Figure 12-1 Proposed Signage Package

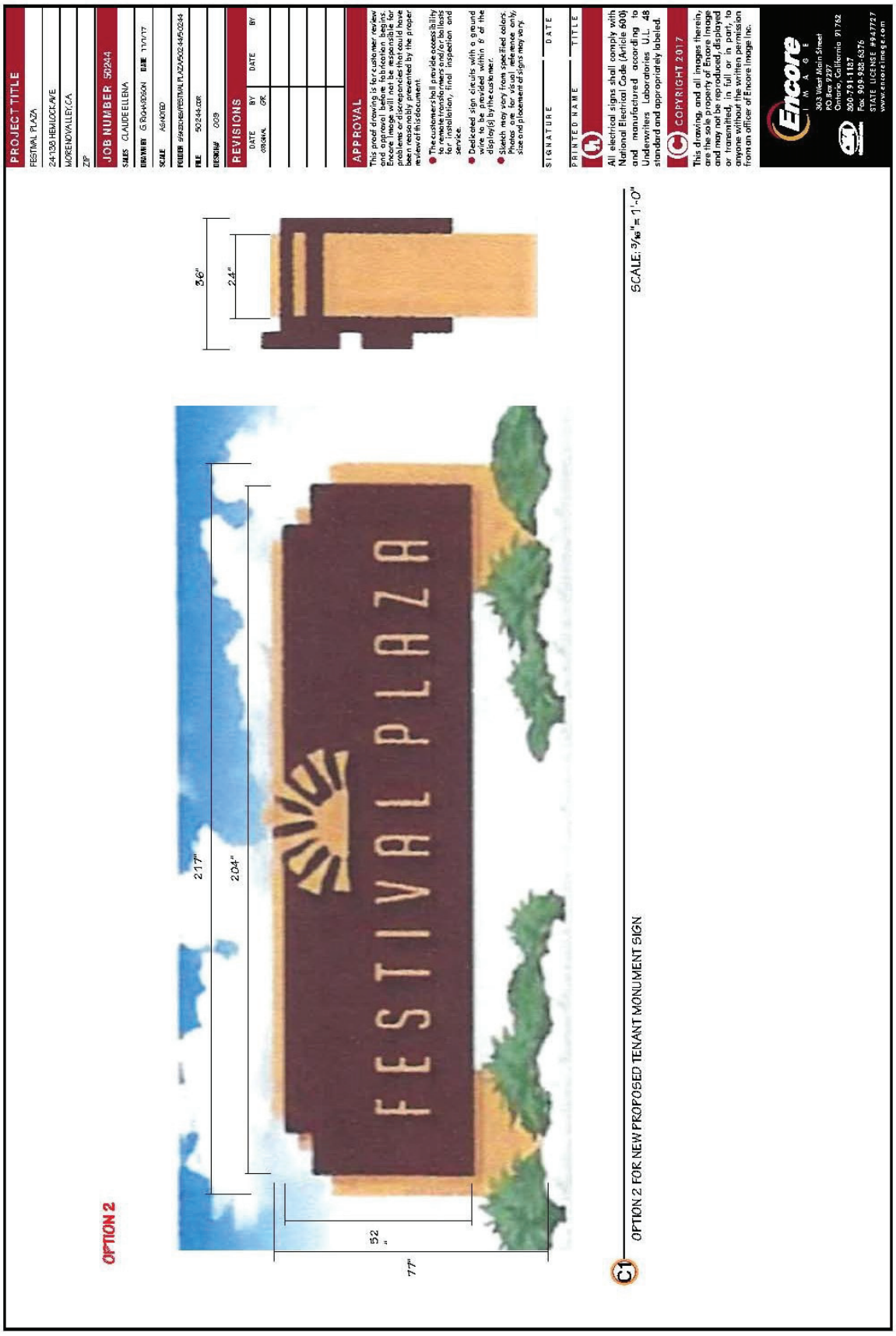


Figure 12-2 Monument Sign Example

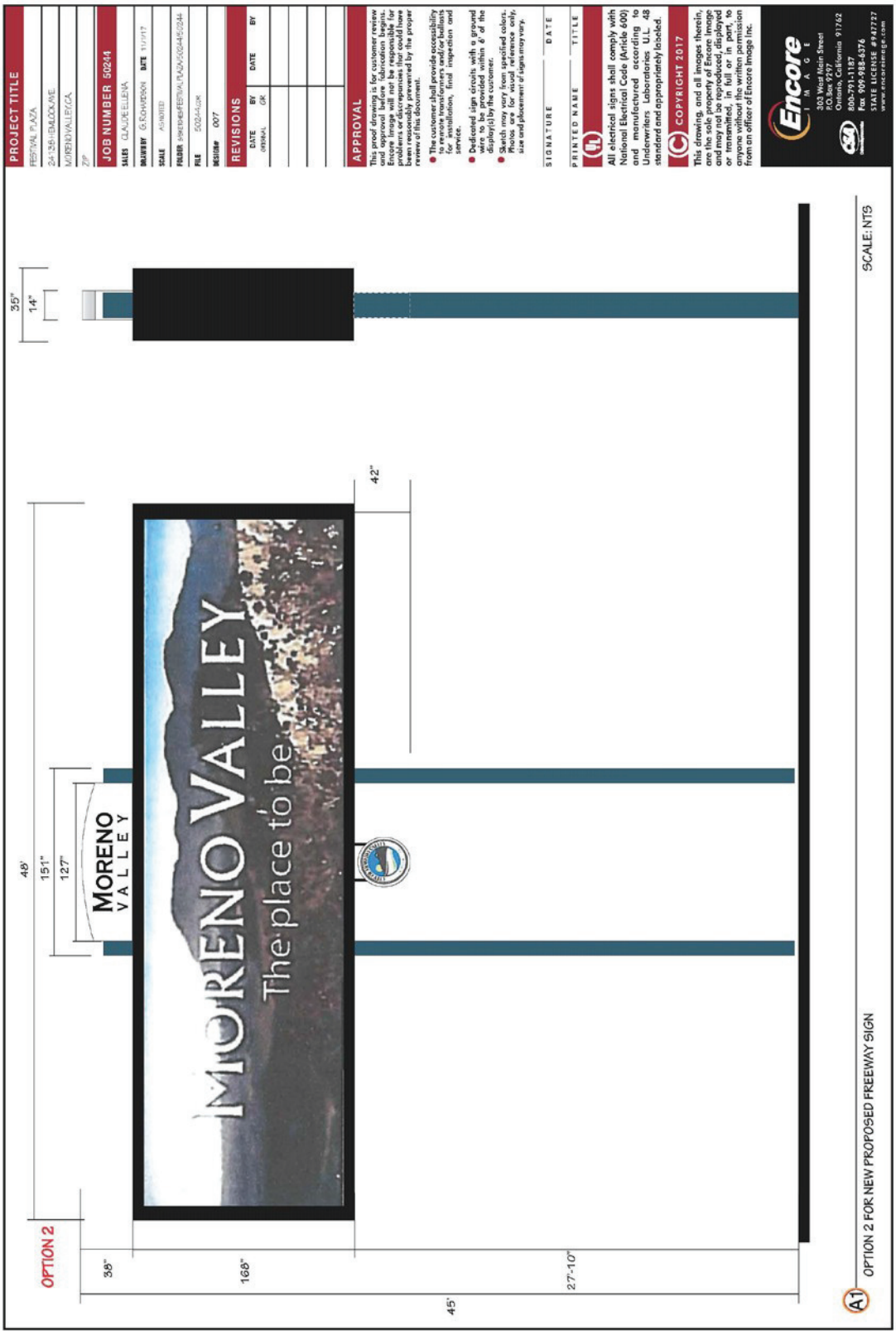


Figure 12-3 Billboard Sign Example

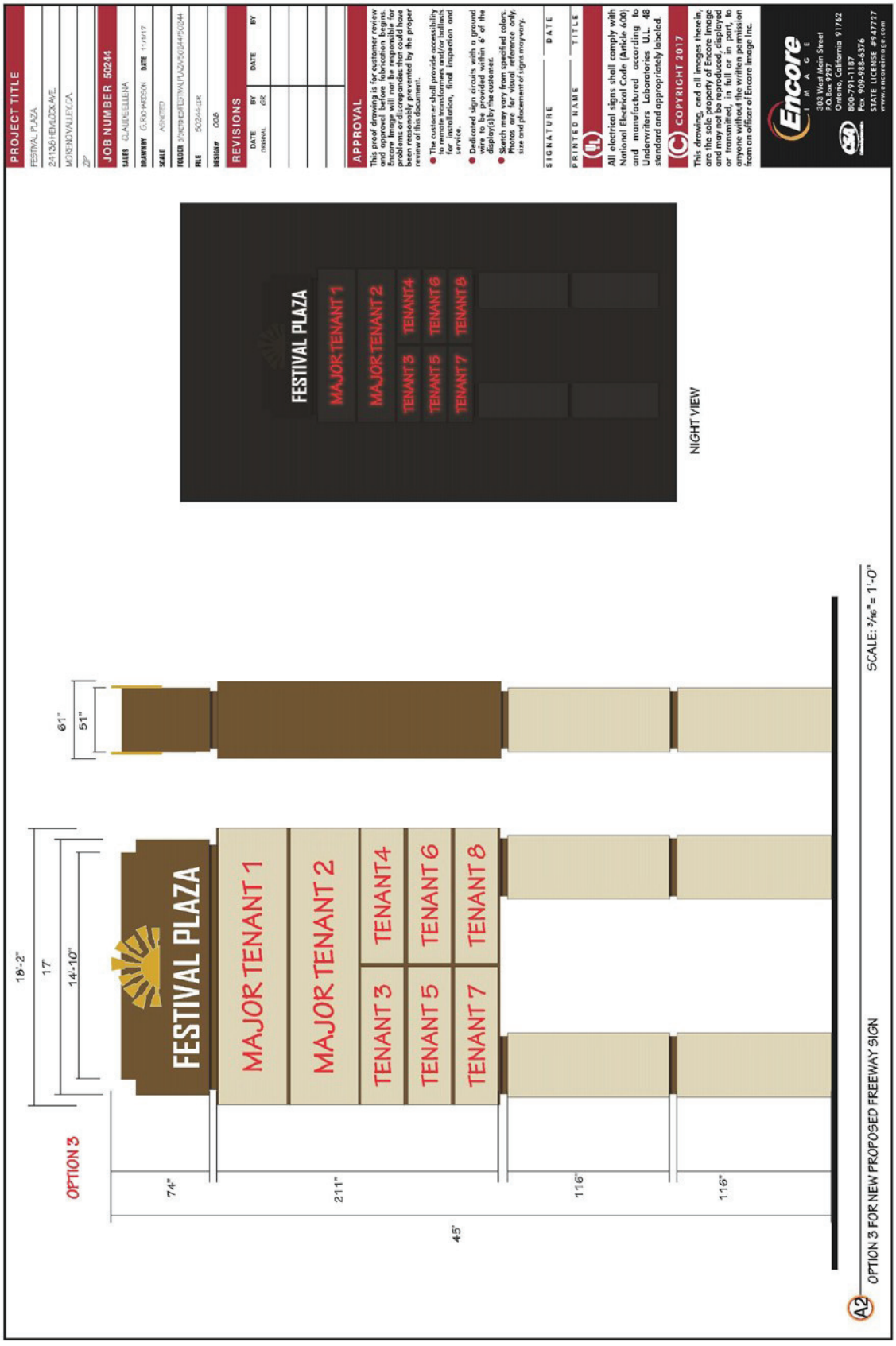
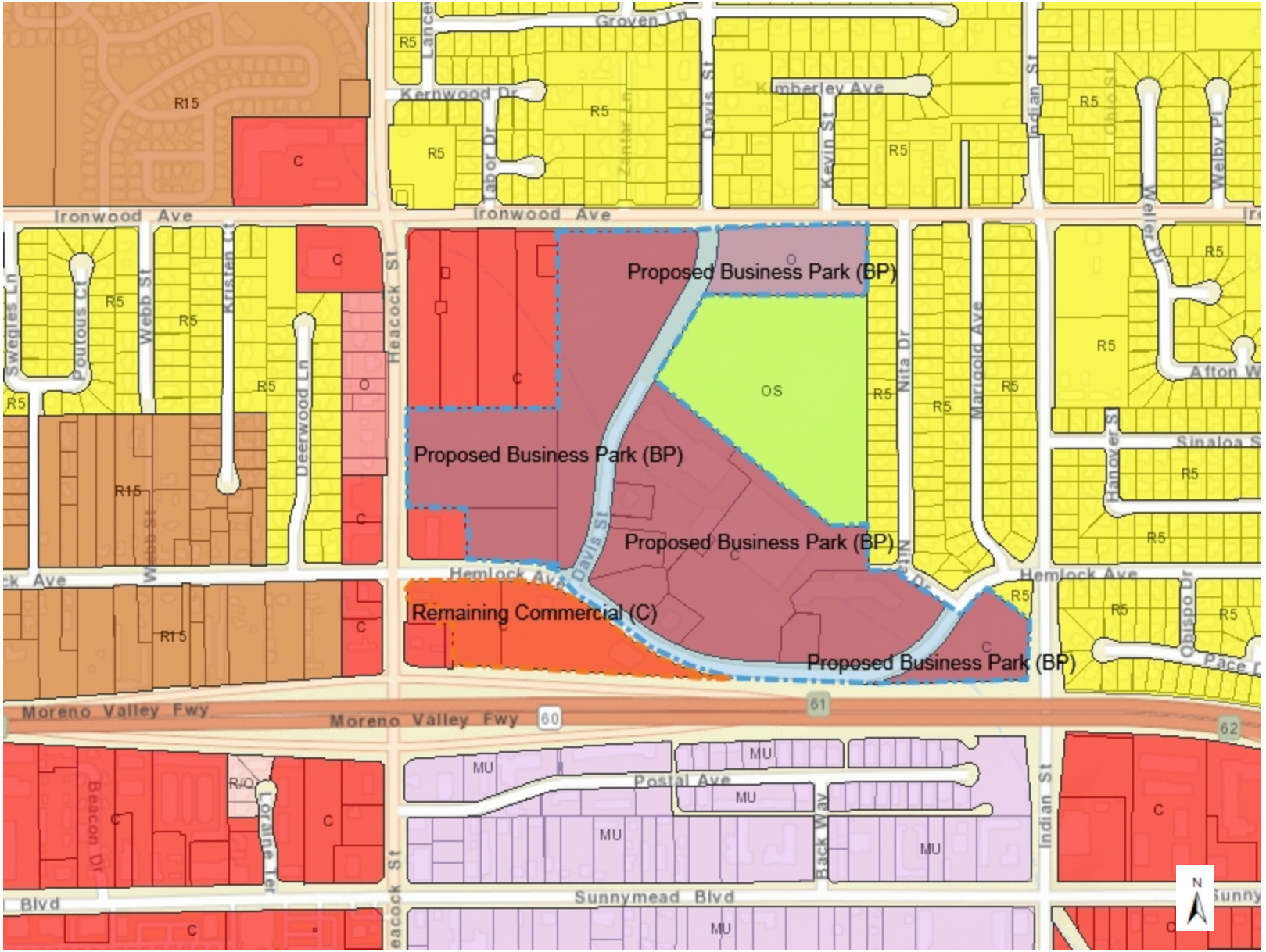
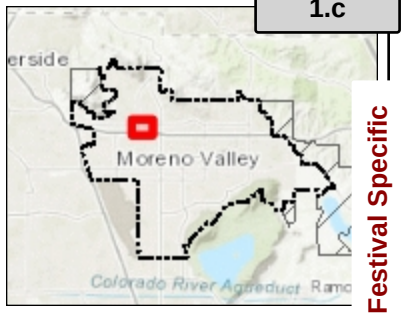


Figure 12-4 Freeway Sign Example

General Plan Amendment
PEN16-0013





Legend

Land Use

- Residential: Max. 1 du/ac
- Mixed Use
- Residential: Max. 2 du/ac
- Rural Residential: Max 2.5 du/ac
- Residential: Max. 3 du/ac
- Residential: Max. 5 du/ac
- Residential: Max. 5 or 15 du/ac
- Residential: Max. 10 du/ac
- Residential: Max.15 du/ac
- Residential: Max. 20 du/ac
- Residential: Max. 30 du/ac
- Hillside Residential
- Planned Residential
- Residential/Office
- Office
- Commercial
- Business Park/Light Industrial
- Open Space
- Public Facilities
- Floodplain

Parcels

Notes

Existing Land Use is Commercial (C) and Office (O), Proposed is Business Park (BP) and Commercial (C).

1,232.1 0 616.05 1,232.1 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Print Date: 3/9/2018

DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

Attachment: Proposed General Plan Amendment Map [Revision 1] (3014 : Moreno Valley Festival Specific

Notice of PUBLIC HEARING

This may affect your property. Please read.

Notice is hereby given that a Public Hearing will be held by the Planning Commission of the City of Moreno Valley on the following item(s):

CASE: PEN16-0013 General Plan Amendment
PEN16-0014 Change of Zone
PEN16-0015 Specific Plan Amendment

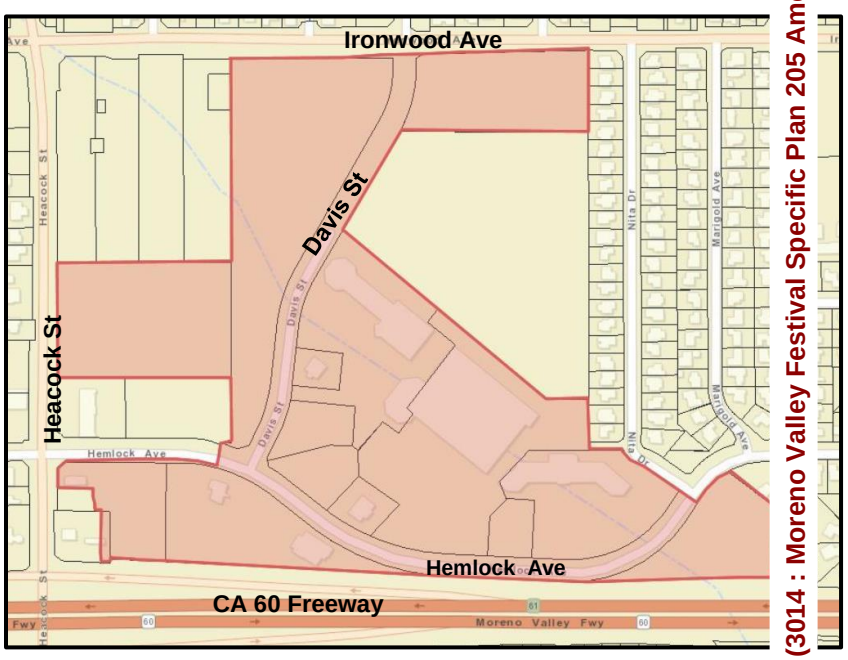
APPLICANT: LCG MVF, LLC
OWNER: Joseph E. Miller, Moreno Valley Festival, LTD

REPRESENTATIVE: LCG MVF, LLC
LOCATION: Easterly of Heacock Street between Ironwood Avenue and State Highway 60
A.P. Nos.: 481-020-017, 018, 019, 021, 022, 023, 028 and 481-090-009, 032, 033, 018, 020-023 & 029

PROPOSAL: A Specific Plan amendment to modify the existing Festival Specific Plan 205 (SP205) proposing a wider range of land uses and development opportunities. Proposed land uses include commercial, retail, business park, office and medical. The proposal will connect Davis Street from Ironwood Avenue south to Hemlock Avenue. A General Plan Amendment and Change of Zone is required for consistency between the City's General Plan and Zoning Atlas.

ENVIRONMENTAL DETERMINATION: Mitigated Negative Declaration

COUNCIL DISTRICT: 1



LOCATION N ↑

PLANNING COMMISSION HEARING

City Council Chamber, City Hall
14177 Frederick Street
Moreno Valley, Calif. 92553

DATE AND TIME: March 22, 2018 at 7 PM

CONTACT PLANNER: Chris Ormsby
PHONE: (951) 413-3229

Any person interested in any listed proposal can contact the Community Development Department, Planning Division, at 14177 Frederick St., Moreno Valley, California, during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday and Fridays from 7:30 a.m. to 4:30 p.m.), or may telephone (951) 413-3206 for further information. The associated documents will be available for public inspection at the above address.

In the case of Public Hearing items, any person may also appear and be heard in support of or opposition to the project or recommendation of adoption of the Environmental Determination at the time of the Hearing.

The Planning Commission, at the Hearing or during deliberations, could approve changes or alternatives to the proposal.

If you challenge any of these items in court, you may be limited to raising only those items you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the Planning Commission at, or prior to, the Public Hearing.

Upon request and in compliance with the Americans with Disabilities Act of 1990, any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to Guy Pegan, ADA Coordinator, at 951.413.3120 at least 48 hours before the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

PLANNING COMMISSION RESOLUTION NO. 2018-13

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, CERTIFYING THE MITIGATED NEGATIVE DECLARATION AND APPROVING THE MITIGATION MONITORING AND REPORTING PROGRAM FOR THE FESTIVAL SPECIFIC PLAN AMENDMENT (PEN16-0015), GENERAL PLAN AMENDMENT (PEN16-0013) AND CHANGE OF ZONE (PEN16-0015)

WHEREAS, the applicant, LCG MVF, LLC, for the Festival Specific Plan Amendment ("Project"), which include an Expanded Environmental Review (PEN16-0016), Specific Plan Amendment (PEN16-0015), General Plan Amendment (PEN16-0013) and Change of Zone (PEN16-0014). The Specific Plan Amendment and related applications shall not be approved unless the Final Mitigated Negative Declaration (PEN16-0154) is certified and approved; and

WHEREAS, the applications for the Project have been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, an Initial Study, supporting technical studies, and Mitigated Negative Declaration for the Project were prepared, consistent with the California Environmental Quality Act (CEQA); and

WHEREAS, the City, in conducting its own independent analysis of the Final Mitigated Negative Declaration, determined that a Mitigated Negative Declaration is an appropriate environmental determination for the Project as there is substantial evidence that demonstrates the Project with mitigation would not result in any significant environmental impacts; and

WHEREAS, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared in accordance with CEQA Guidelines, and is designed to ensure compliance with the identified mitigation measures outlined in the Final Mitigated Negative Declaration through Project implementation; and

WHEREAS, a 30-day public review period of the Initial Study and Mitigated Negative Declaration commenced on February 19, 2018 and concluded on March 21, 2018. The public notice for the Mitigated Negative Declaration was mailed to interested parties, public agencies as well as published in the local newspaper on February 18, 2018; and

WHEREAS, the City of Moreno Valley, Community Development Department, located at 14177 Frederick Street, Moreno Valley, California 92552 is the custodian of documents and other materials that constitute the record of proceedings upon which the decision to adopt the Mitigated Negative Declaration is based; and

WHEREAS, the Planning Commission of the City of Moreno Valley considered the Project, including all environmental documentation, at a public hearing held on March 22, 2018; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, the Planning Commission considered the Initial Study prepared for the Project for the purpose of compliance with the California Environmental Quality Act (CEQA), and based on the Initial Study including all supporting technical evidence, it was determined that the project impacts are expected to be less than significant with mitigation, and approval of a Mitigated Negative Declaration is an appropriate environmental determination for the Project.

NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

A. This Planning Commission specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this Planning Commission during the above-referenced meeting on July 20, 2017, including written and oral staff reports, and the record from the public hearing, this Planning Commission finds as follows:

1. Independent Judgment and Analysis – An Initial Study/Mitigated Negative Declaration dated February 15, 2018 was prepared by the environmental consultant, Blodgett Baylosis Environmental Planning. City staff reviewed the Mitigated Negative Declaration/Initial Study and related technical studies prepared for the project. The documents were properly circulated for public review in accordance with the California Environmental Quality Act Guidelines. The Mitigated Negative Declaration/Initial Study has been completed along with the Mitigation Monitoring and Reporting Program (MMRP) to ensure compliance with all mitigation through project implementation. All environmental documents that comprise the Mitigated Negative Declaration, including all technical studies were independently reviewed by the City. On the basis of the whole record, there is no substantial evidence that the Project as designed, conditioned, and mitigated, will have a significant effect on the environment. The Mitigated Negative Declaration prepared and completed, in accordance with the CEQA Guidelines, reflects the independent judgment and analysis of the City.

THEREFORE THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY APPROVE Resolution No. 2017-13, and:

1. **CERTIFY** that the Mitigated Negative Declaration prepared for General Plan Amendment (PEN16-0153), Change of Zone (PEN16-0154), and Specific Plan Amendment (PEN16-0155) on file with the Community Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the Planning Commission reviewed and considered the information contained in the Mitigated Negative Declaration and the document reflects the City's independent judgment and analysis; attached hereto as Exhibit A and

2. **ADOPT** the Mitigation Monitoring and Reporting Program prepared for Conditional Use Permit PEN16-0153, attached hereto as Exhibit B.

APPROVED AND ADOPTED this 22th day of March, 2018.

AYES:
NOES:
ABSTAIN:

_____
Jeffrey Barnes
Chair, Planning Commission

ATTEST:

_____
Albert Armijo, Interim Planning Manager
Secretary to the Planning Commission

APPROVED AS TO FORM:

_____
City Attorney

Exhibit A and Exhibit B

INITIAL STUDY
AND
MITIGATED NEGATIVE DECLARATION

MORENO VALLEY FESTIVAL SPECIFIC PLAN AMENDMENT
MORENO VALLEY, CALIFORNIA

LEAD AGENCY:

CITY OF MORENO VALLEY
COMMUNITY DEVELOPMENT DEPARTMENT
14177 FREDERICK STREET
P. O. BOX 88005
MORENO VALLEY, CALIFORNIA 92552

REPORT PREPARED BY:

BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
2211 HACIENDA BOULEVARD, SUITE 107
HACIENDA HEIGHTS, CALIFORNIA 91745

FEBRUARY 15, 2018

MORV 003

THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK.

MITIGATED NEGATIVE DECLARATION

PROJECT NAME: Moreno Valley Festival Specific Plan Amendment.

ADDRESS: The Moreno Valley Festival Specific Plan Amendment applies to a geographic area (referred to hereinafter as the "Planning Area"), that consists of approximately 63.78 acres. This Planning Area is bounded by Heacock Street to the west, Ironwood Avenue to the north, the Moreno Valley Freeway (SR-60) to the south, and Nita Drive one block to the east of the Planning Area.

CITY & COUNTY: Moreno Valley, Riverside County.

APPLICANT: LCG MVF, LLC, 670 Ledo Way, Los Angeles, California 90049.

PROJECT: The proposed project involves the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan Amendment (also referred to hereinafter as the "Plan Amendment"). The adopted Specific Plan that is subject to the Amendment, the Moreno Valley Festival Specific Plan/EIR (SP-205), was approved and certified by the City Council of Moreno Valley on October 27 1987. The purpose of this amendment is to modify the existing permitted uses to allow for a retail, retail/mix of uses, and mix of uses that shall include commercial, retail, business park, office, medical, and related uses). The plan will also facilitate the extension of Davis Street in a northerly direction. This street will ultimately reconnect with the segment of Davis Street that extends north of Ironwood Avenue.

During the original planning process for the "Moreno Valley Festival" (SP 205), consideration was given to all public utility and infrastructure needs associated with the proposed project. The majority of the infrastructure has been installed per the approved specific plan. All future public utility and infrastructure shall be installed according to Title 9 (Planning and Zoning) of the City of Moreno Valley Municipal Code and the requirements of the Specific Plan Amendment. Implementation of roadways and infrastructure to service the project site will occur according to development needs.

The "Moreno Valley Festival" Specific Plan has been adopted pursuant to Government Code Section 65450 which grants authority to cities to adopt specific plans for purposes of implementing the goals and policies of their General Plans. The Government Code sets forth the minimum requirements and review procedures for specific plans including the provision of a land use plan, infrastructure and public services plan, criteria and standards for development, and implementation measures.

FINDINGS: The City of Moreno Valley determined that a *Mitigated Negative Declaration* is the appropriate California Environmental Quality Act (CEQA) document for the proposed project. The following findings may be made based on the analysis included in the attached initial study:

- The proposed project *will not* have the potential to degrade the quality of the environment.
- The proposed project *will not* have the potential to achieve short-term goals to the disadvantage of long-term environmental goals.
- The proposed project *will not* have impacts that are individually limited, but cumulatively considerable, when considering planned or proposed development in the city.
- The proposed project *will not* have environmental effects that will adversely affect humans, either directly or indirectly.

_____ _____

Signature
City of Moreno Valley Planning and Development Department

Date

TABLE OF CONTENTS

THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK.

SECTION 1 INTRODUCTION

1.1 PURPOSE OF INITIAL STUDY

The proposed project involves the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan Amendment (also referred to hereinafter as "the Plan Amendment"). The Specific Plan Amendment that is the focus of this Initial Study and Mitigated Negative Declaration (IS/MND) is an amendment to the adopted *Moreno Valley Festival Specific Plan/EIR (SP-205)*. The original Specific Plan was adopted and the Environmental Impact Report (EIR) was certified by the City Council of Moreno Valley on October 27, 1987. The purpose of this Amendment is to modify the Adopted Specific Plan as a means to promote a wider range of land uses and development to address current development trends. The expanded range of allowable uses will include a Mix of Uses Development (MU), Commercial/Retail Development (CR), Retail Mix of Uses (RMU) and Open Space (OS) designation. The plan amendment will also facilitate the extension of Davis Street in a northerly direction to ultimately re-connect with the segment of Davis Street that extends north of Ironwood Avenue. The overall placement, design, and phasing of future development will be responsive to the employment and community service needs while mitigating the potential impacts on sensitive development that will be located both within and in close proximity to the Planning Area.

During the preparation of the adopted Moreno Valley Festival Specific Plan (SP 205), consideration was given to all public utility and infrastructure needed to serve the future development contemplated as part of the adopted Specific Plan's implementation. The majority of the needed infrastructure has been installed pursuant to the requirements of the adopted Plan. All *future* public utility and infrastructure shall be installed according to Title 9 (Land Use and Planning) 0f the City of Moreno Valley Municipal Code and the requirements of this Plan Amendment. The installation of new infrastructure will be phased as part of the area-wide master planned facilities. The implementation of roadways and infrastructure to service the Planning Area will occur according to development needs.

The adopted Moreno Valley Festival Specific Plan was prepared pursuant to Government Code Section 65450, which grants authority to cities to adopt specific plans for purposes of implementing the goals and policies of their general plans. The Government Code sets forth the minimum requirements and review procedures for specific plans including the provision of a land use plan, infrastructure and public services plan, criteria and standards for development, and implementation measures. This Specific Plan Amendment complies with the City of Moreno Valley's Municipal Code (Chapter 9.13) governing amendments of the specific plans content and procedures for their adoption and enforcement.[1]

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan Amendment is considered to be a project under the California Environmental Quality Act (CEQA).[2] The City of Moreno Valley is the designated *Lead Agency* for the proposed "project" and the City will be responsible for the project's environmental review. Section 21067 of CEQA defines a lead agency as the public agency that has

[1] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

[2] California, State of. *Title 14. California Code of Regulations. Chapter 3. Guidelines for the Implementation of the California Environmental Quality Act.* as Amended 1998 (CEQA Guidelines). § 15060 (b).

the principal responsibility for carrying out or approving a project that may have a significant effect on the environment.[3] The project Applicant is LCG MVF, LLC, 670 Ledo Way, Los Angeles, California 90049.

As part of the proposed project's environmental review, the City of Moreno Valley authorized the preparation of this Initial Study.[4] The primary purpose of CEQA is to ensure that decision-makers and the public understand the environmental implications of a specific action or project. The purpose of this Initial Study is to ascertain whether the proposed project will have the potential for significant adverse impacts on the environment. Pursuant to the CEQA Guidelines, additional purposes of this Initial Study include the following:

- To provide the City of Moreno Valley with information to use as the basis for deciding whether to prepare an environmental impact report (EIR), mitigated negative declaration, or negative declaration for the Plan Amendment;
- To facilitate the project's environmental assessment early in the preparation of this Plan Amendment;
- To eliminate unnecessary EIRs; and,
- To determine the nature and extent of any impacts associated the Plan Amendment.

Although this Initial Study was prepared with consultant support, the analysis, conclusions, and findings made as part of its preparation, fully represent the independent judgment and position of the City of Moreno Valley, in its capacity as the lead agency. The City also determined, as part of this Initial Study's preparation, that a Mitigated Negative Declaration is the appropriate environmental document for the project's environmental review pursuant to CEQA. This Initial Study and the *Notice of Intent to Adopt a Negative Declaration* will be forwarded to responsible agencies, trustee agencies, and the public for review and comment. A 30-day public review period will be provided to allow these entities and other interested parties to comment on the proposed project and the findings of this initial study.[5] Questions and/or comments should be submitted to the following contact person:

Chris Ormsby, Senior Planner
City of Moreno Valley Community Development Department
14177 Frederick Street
Moreno Valley, California 92553

[3] California, State of. *California Public Resources Code. Division 13, Chapter 2.5. Definitions.* as Amended 2001. § 21067.

[4] Ibid. (CEQA Guidelines) § 15050.

[5] California, State of. *California Public Resources Code. Division 13, Chapter 2.5. Definitions.* as Amended 200. *Chapter 2.6, Section 2109(b).* 2000.

1.2 INITIAL STUDY'S ORGANIZATION

The following annotated outline summarizes the scope and content of this Initial Study:

- *Section 1 Introduction*, provides the procedural context surrounding this Initial Study's preparation and insight into its composition.
- *Section 2 Project Description*, provides an overview of the existing environment as it relates to the Planning Area and describes the proposed project's physical and operational characteristics.
- *Section 3 Environmental Analysis* includes an analysis of potential impacts associated with the proposed project's construction and the subsequent occupancy.
- *Section 4 Findings* indicates the conclusions of the environmental analysis and the mandatory findings of significance.
- *Section 5 References* identifies the sources used in the preparation of this Initial Study.

1.3 INITIAL STUDY CHECKLIST

The environmental analysis provided in Section 3 of this Initial Study indicates that the adoption and subsequent Moreno Valley Festival Specific Plan will not result in any significant adverse unmitigable impacts on the environment. For this reason, the City of Moreno Valley determined that a Mitigated Negative Declaration is the appropriate CEQA document for the proposed project. The findings of this Initial Study are summarized in Table 1-1 provided below and on the following pages.

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Section 3.1 Aesthetic Impacts. *Would the project:*				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?			X	
Section 3.2 Agriculture & Forestry Resources Impacts. *Would the project:*				
a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for or cause rezoning of, forest land (as defined in Public Resources Code §4526), or zoned timberland production (as defined by Government Code §51104(g))?				X
d) Would the project result in the loss of forest land or the conversion of forest land to a non-forest use?				X
e) Involve other changes in the existing environment that, due to their location or nature, may result in conversion of farmland to non-agricultural use?				X
Section 3.3 Air Quality Impacts. *Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?				X
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?				X
Section 3.4 Biological Resources Impacts. *Would the project have a substantial adverse effect:*				
a) Either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U. S. Fish and Wildlife Service?		X		
b) On any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
c) On federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) In interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory life corridors, or impede the use of native wildlife nursery sites?		X		
e) In conflicting with any local policies or ordinances, protecting biological resources, such as a tree preservation policy or ordinance?				X

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f) By conflicting with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
Section 3.5 Cultural & Tribal Resources Impacts. *Would the project:*				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 of the CEQA Guidelines?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the CEQA Guidelines?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d) Disturb any human remains, including those interred outside of dedicated cemeteries?			X	
Section 3.6 Geology & Soils Impacts. *Would the project result in or expose people to potential impacts involving:*				
a) The exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault (as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault), ground –shaking, liquefaction, or landslides?			X	
b) Substantial soil erosion or the loss of topsoil?			X	
c) Location on a geologic unit or a soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Location on expansive soil, as defined in California Building Code (2001), creating substantial risks to life or property?			X	
e) Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
Section 3.7 Greenhouse Gas Emissions Impacts. *Would the project*				
a) Result in the generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Increase the potential for conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gasses?		X		
Section 3.8 Hazards & Hazardous Materials Impacts. *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment or result in reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site, which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5, and as a result, would it create a significant hazard to the public or the environment?				X
e) Be located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the Planning Area?				X
f) Within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the Planning Area?				X
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury, or death involving wild lands fire, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands?				X
Section 3.9 Hydrology & Water Quality Impacts. *Would the project:*				
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge in such a way that would cause a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in flooding on-or off-site?				X
e) Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Substantially degrade water quality?				X

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of flooding because of dam or levee failure?			X	
j) Result in inundation by seiche, tsunami, or mudflow?				X
Section 3.10 Land Use & Planning Impacts. *Would the project:*				
a) Physically divide an established community, or otherwise result in an incompatible land use?				X
b) Conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation or natural community conservation plan?				X
Section 3.11 Mineral Resources Impacts. *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X
Section 3.12 Noise Impacts. *Would the project result in:*				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Exposure of people to or generation of excessive ground-borne noise levels?			X	
c) Substantial permanent increase in ambient noise levels in the project vicinity above noise levels existing without the project?			X	
d) Substantial temporary or periodic increases in ambient noise levels in the project vicinity above levels existing without the project?		X		
e) For a project located with an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Planning Area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the Planning Area to excessive noise levels?				X

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Section 3.13 Population & Housing Impacts. *Would the project:*				
a) Induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X	
Section 3.14 Public Services Impacts. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives in any of the following areas:*				
a) Fire department services?			X	
b) Law enforcement services?			X	
c) School services?			X	
d) Other governmental services?			X	
Section 3.15 Recreation Impacts. *Would the project:*				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Affect existing recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?			X	
Section 3.16 Transportation & Circulation Impacts. *Would the project:*				
a) Cause a conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit)?		X		
b) Exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways?			X	
c) A change in air traffic patterns, including either an increase in traffic levels or a change in the location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)			X	
e) Result in inadequate emergency access?				X
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Section 3.17 Tribal Cultural Resources. *Would the project cause a substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).			X	
b) A resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.			X	
Section 3.18 Utilities Impacts. *Would the project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?			X	
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e) Result in a determination by the wastewater provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X
Mandatory Findings of Significance. *The approval and subsequent implementation of the proposed project:*				
a) Will not have the potential to degrade the quality of the environment, with the implementation of the recommended standard conditions and mitigation measures included herein.				X
b) Will not have the potential to achieve short-term goals to the disadvantage of long-term environmental goals, with the implementation of the recommended standard conditions and mitigation measures referenced herein.				X
c) Will not have impacts that are individually limited, but cumulatively considerable, when considering planned or proposed development in the immediate vicinity, with the implementation of the recommended standard conditions and mitigation measures contained herein.				X

Table 1-1
Summary (Initial Study Checklist)

Environmental Issues Area Examined	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
d) Will not have environmental effects that will adversely affect humans, either directly or indirectly, with the implementation of the recommended standard conditions and mitigation measures contained herein.				X

SECTION 2 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The proposed project involves the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan Amendment.[6] The purpose of this Plan Amendment is to modify the Adopted Specific Plan as a means to promote a wider range of land uses and development to address current development trends. The expanded range of allowable uses will include a Mix of Uses Development (MU), Commercial/Retail Development (CR), Retail Mix of Uses (RMU) and Open Space (OS) designation. The Plan Amendment will also facilitate the extension of Davis Street in a northerly direction to ultimately re-connect with the segment of Davis Street that extends north of Ironwood Avenue. The overall placement, design, and phasing of future development will be responsive to the employment and community service needs while mitigating the potential impacts on sensitive development located within and in close proximity to the Planning Area.

2.2 PROJECT LOCATION

The geographic area that is subject to the Moreno Valley Festival Specific Plan is located within the corporate boundaries of the City of Moreno Valley in the northwestern portion of the City. The City of Moreno Valley is located approximately 54 miles east of downtown Los Angeles and 80 miles north of San Diego.[7] The City is bounded by unincorporated portions of Riverside County to the north and east; the City of Riverside and unincorporated Riverside County to the west; and the City of Perris to the south.[8] The location of Moreno Valley in a regional context is shown in Exhibit 2-1. A citywide map is provided in Exhibit 2-2. The Planning Area is bounded by Heacock Street to the west; Ironwood Avenue to the north; and the Moreno Valley Freeway (SR-60) to the south. The Planning Area is illustrated in Exhibit 2-3. For planning purposes, the Planning Area has been divided into eight sub-areas that include the following:

- *Planning Area 1* consists of 7.36 acres and is located in the northernmost portion of the larger Specific Plan area. This planning area occupies frontage along the south side of Ironwood Avenue and is located west of the proposed David Street extension. The Assessor Parcel Number that corresponds to this planning area is 481-020-024.[9]

- *Planning Area 2* consists of 3.84 acres and is located in the northeastern corner of the larger Specific Plan area. Planning Area 2 occupies frontage along the south side of Ironwood Avenue and is located east of the proposed David Street extension. The Assessor Parcel Number that corresponds to this planning area is 481-020-019.[10]

[6] The Plan Amendment that is the focus of this IS/MND is an amendment to the adopted *Moreno Valley Festival Specific Plan/EIR (SP-205)*.

[7] Google Earth. Website Accessed August 9, 2017.

[8] Quantum GIS and the Southern California Association of Governments.

[9] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

[10] Ibid.

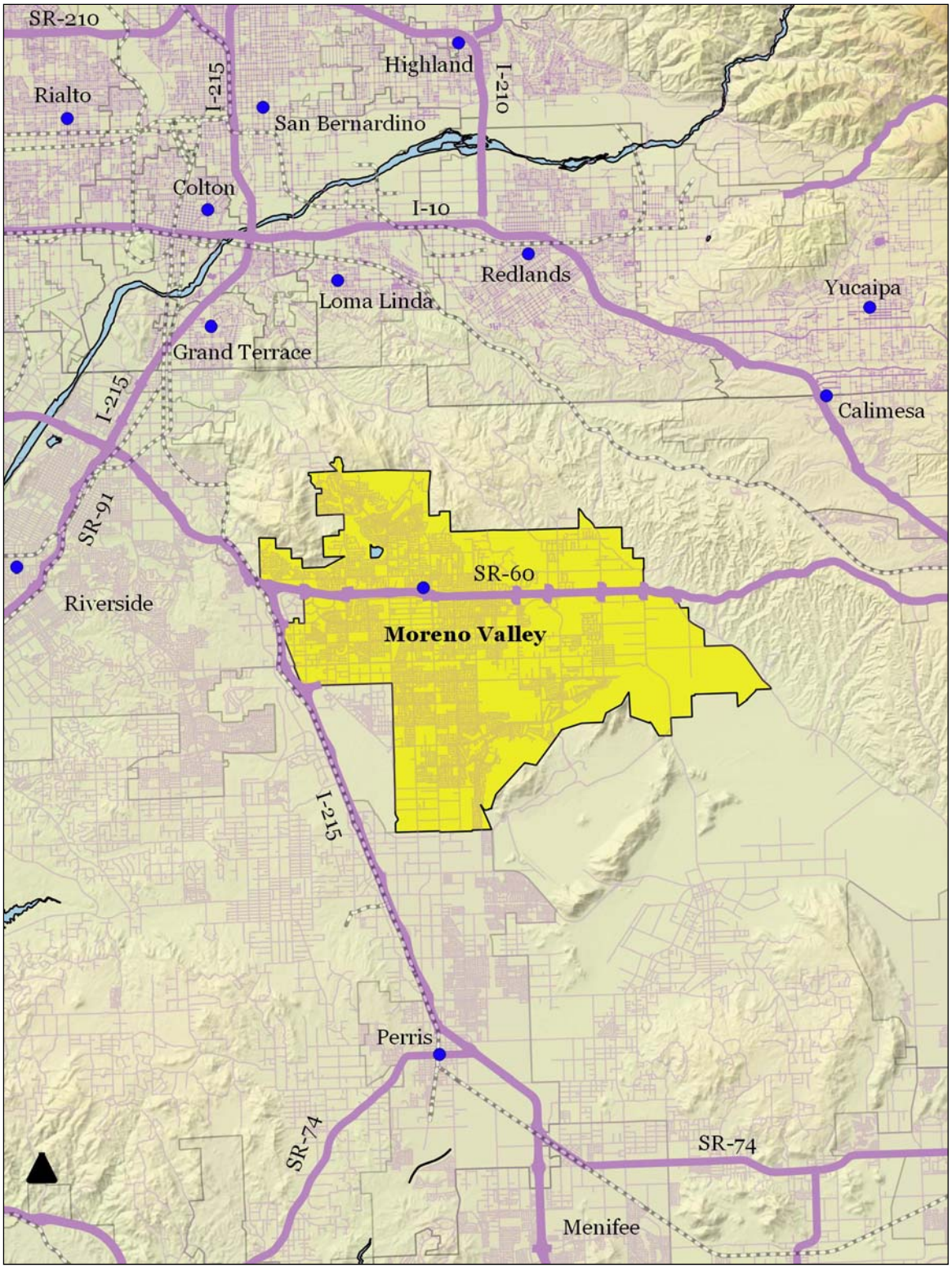


EXHIBIT 2-1
REGIONAL LOCATION
Source: Quantum GIS

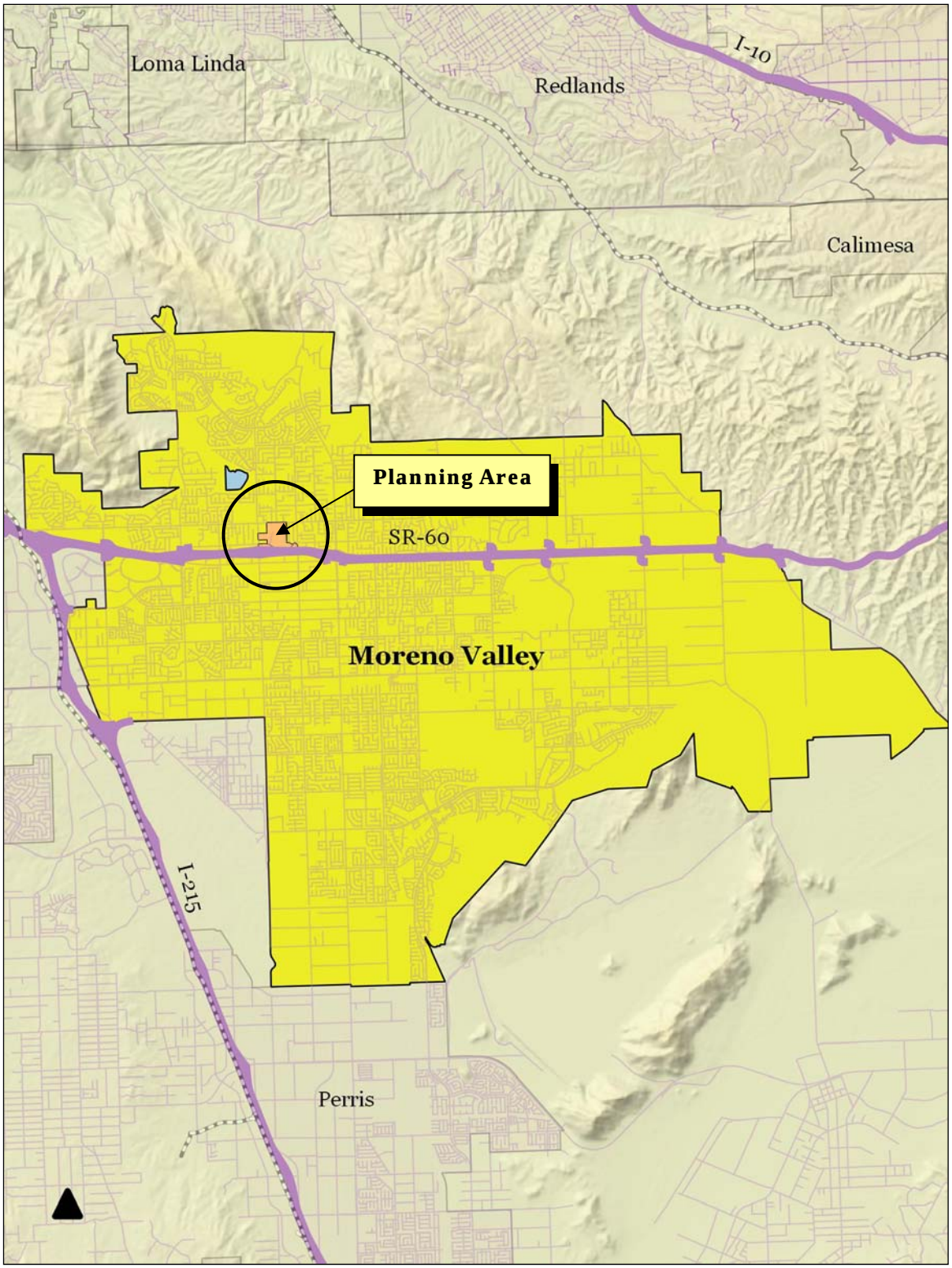


EXHIBIT 2-2
CITYWIDE MAP
Source: Quantum GIS

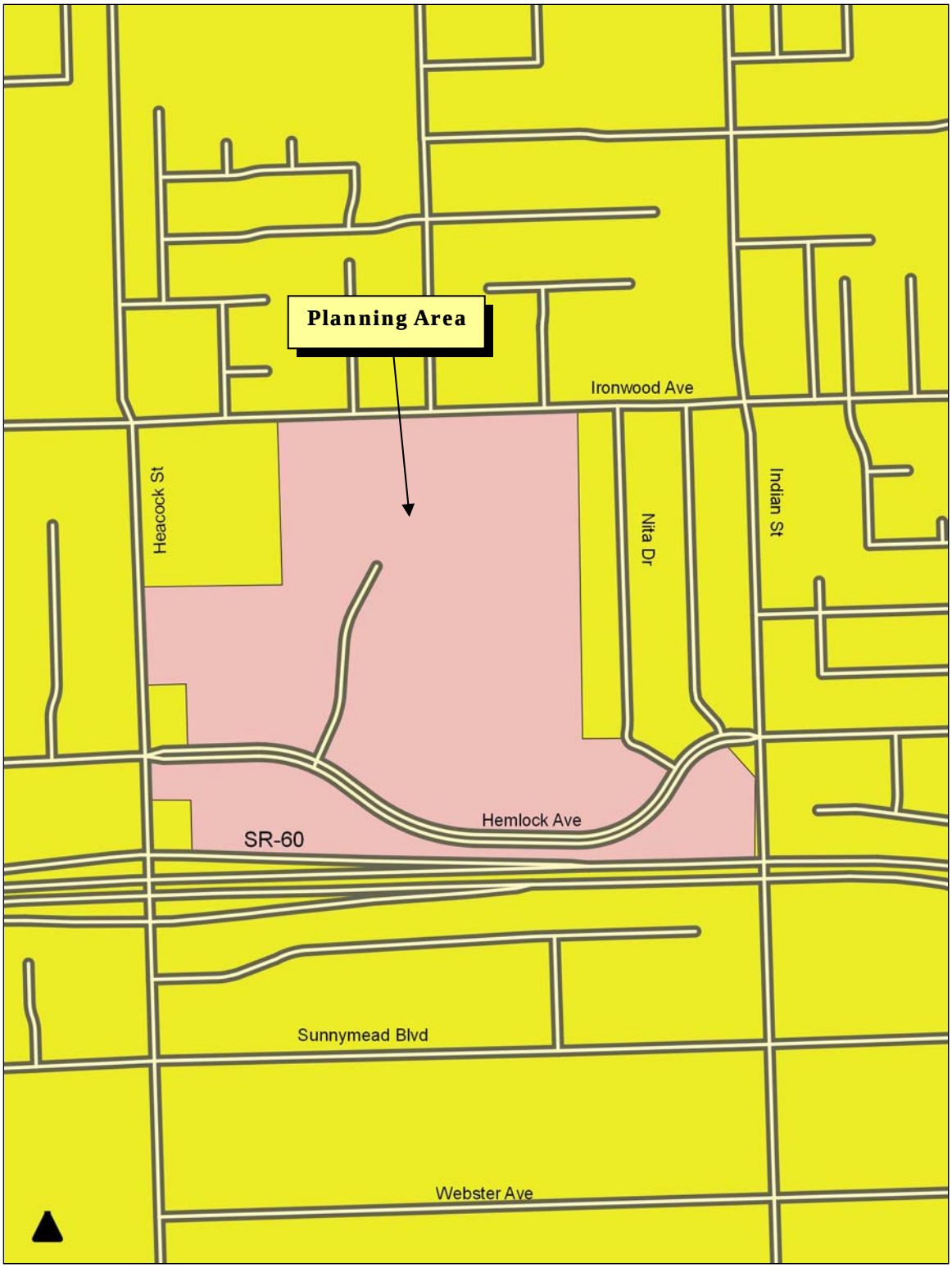


EXHIBIT 2-3
LOCAL MAP
Source: Quantum GIS

- *Planning Area 3* consists of 9.81 acres and is located in the western portion of the larger Specific Plan area. Planning Area 3 is bounded on the north by Planning Area 1 and four vacant parcels; on the west by Heacock Street; on the east by Davis Street; and on the south by Hemlock Avenue and a parcel currently owned by the Eastern Municipal Water District which is part of Planning Area 3. The Assessor Parcel Numbers that correspond to this planning area include 481-020-017, 481-020-028, and 481-020-037.[11]

- *Planning Area 4* consists of 13.92 acres and is located in the central portion of the larger Specific Plan area and is bounded on the north by Planning Area 5; on the west by Davis Street; on the east by single-family residential; and on the south by Hemlock Avenue and Planning Area 7. The Assessor Parcel Numbers that correspond to this planning area include 481-020-021, 481-020-022, 481-020-023, 481-090-018, and 481-090-020.[12]

- *Planning Area 5* consists of 12.90 acres and is located in the eastern portion of the larger Specific Plan area and is bounded on the north by Planning Area 2; on the west by the proposed Davis Street extension; on the east by single-family residential; and on the south by Planning Area 4. The Assessor Parcel Number that corresponds to this planning area is 481-020-020.[13]

- *Planning Area 6* consists of 6.08 acres and is located in the southwestern portion of the larger Specific Plan area and is bounded on the north by Hemlock Avenue; on the west by Heacock Street; on the east by undeveloped land; and on the south by the Moreno Valley Freeway. The Assessor Parcel Numbers that correspond to this planning area include 481-090-032 and 481-090-033.[14]

- *Planning Area 7* consists of 6.44 acres and is located in the eastern portion of the larger Specific Plan area and is bounded on the north by Planning Area 4; on the west by Planning Area 4 and Hemlock Avenue; on the east by Nita Drive and Hemlock Avenue; and on the south by Hemlock Avenue. The Assessor Parcel Numbers that correspond to this planning area include 481-090-019, 481-090-020, 481-090-021, and 481-090-022.

- *Planning Area 8* consists of 3.44 acres and is located in the southeastern most portion of the larger Specific Plan area. Planning Area 8 is bounded on the north by Hemlock Avenue; on the west by undeveloped land and Hemlock Avenue; on the east by Indian Street; and on the south by the Moreno Valley Freeway. The Assessor Parcel Number that corresponds to this planning area is 481-090-029.[15]

The 9.96 acre privately owned property located at the southeast corner of Ironwood Avenue and Heacock Street is part of the original adopted Specific Plan (SP 205). This property is not part of the proposed Specific Plan Amendment. The owner Applicant shall work in a collaborative manner with the owner of

[11] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

[12] Ibid.

[13] Ibid.

[14] Ibid.

[15] Ibid.

the 9.96-acre privately-owned site to ensure conformity and compatibility of access for a more efficient and uniform design, if the product type and uses create a mutually beneficial opportunity. In addition there are two parcels located within the Plan Amendment that are under separate public ownership. A smaller portion (1.84 acres) of Planning Area 3 is currently owned by the Eastern Municipal Water District (EMWD). Planning Area 5 in its entirety is owned by the City of Moreno Valley and is used for storm water retention. The Plan Amendment does not contemplate any change in the use of the Regional storm water retention basin. A map of the entire Moreno Valley Festival Specific Plan and the eight individual planning areas is provided in Exhibit 2-4.

2.3 ENVIRONMENTAL SETTING

Approximately 23.4 acres of the planning area is developed and occupied by the existing Festival Shopping Center buildings. The remainder consists of approximately 29 acres of undeveloped land and an approximate 12.9-acre stormwater detention basin. The existing Moreno Valley Festival Shopping Center occupies the frontage along the north side of Hemlock Avenue in the southern portion of the Planning Area. The open space areas are located in the northern and western portions of the Planning Area. Other smaller areas of open space are located in the southernmost portion of the Planning Area near the SR-60 Freeway. The existing land uses for the eight sub-areas that comprise the larger planning area are summarized in Table 2-1.

Table 2-1
Existing Land Uses and Development

Planning Area	Description of Land Use	Floor Area (in sq. ft.)
Planning Area 1 7.36 acres	Vacant Land	None
Planning Area 2 3.84 acres	Vacant Land	None
Planning Area 3 9.81 acres	Vacant Land	None.
Planning Area 4 13.92 acres	The Festival at Moreno Valley Shopping Center and ancillary parking, a restaurant (Yoshinoya), and vacant land.	Retail Center - 162,250 sq. ft. Fast-food Restaurant - 3,900 sq. ft.
Planning Area 5 12.90 acres	The City-owned Stormwater Retention Basin will remain.	No development will be permitted.
Planning Area 6 6.08 acres	Kentucky Fried Chicken, vacant auto use (former Jiffy Lube), a vacant fast-food restaurant (a former Arby's) and a vacant sit-down restaurant use (former Centanario).	Two Fast-food Restaurants - 5,400 sq. ft. Auto Service – 2,320 sq. ft. Sit Down Restaurant - 8,800 sq. ft.
Planning Area 7 6.44 acres	The Festival at Moreno Valley Shopping Center and ancillary parking, and vacant undeveloped open space. A portion of the existing retail building is being leased to a church.	Retail Center - 33,675 sq. ft.
Planning Area 8 3.44 acres	Vacant Land	None

Source: Riverside County Tax Assessor and Site Survey.

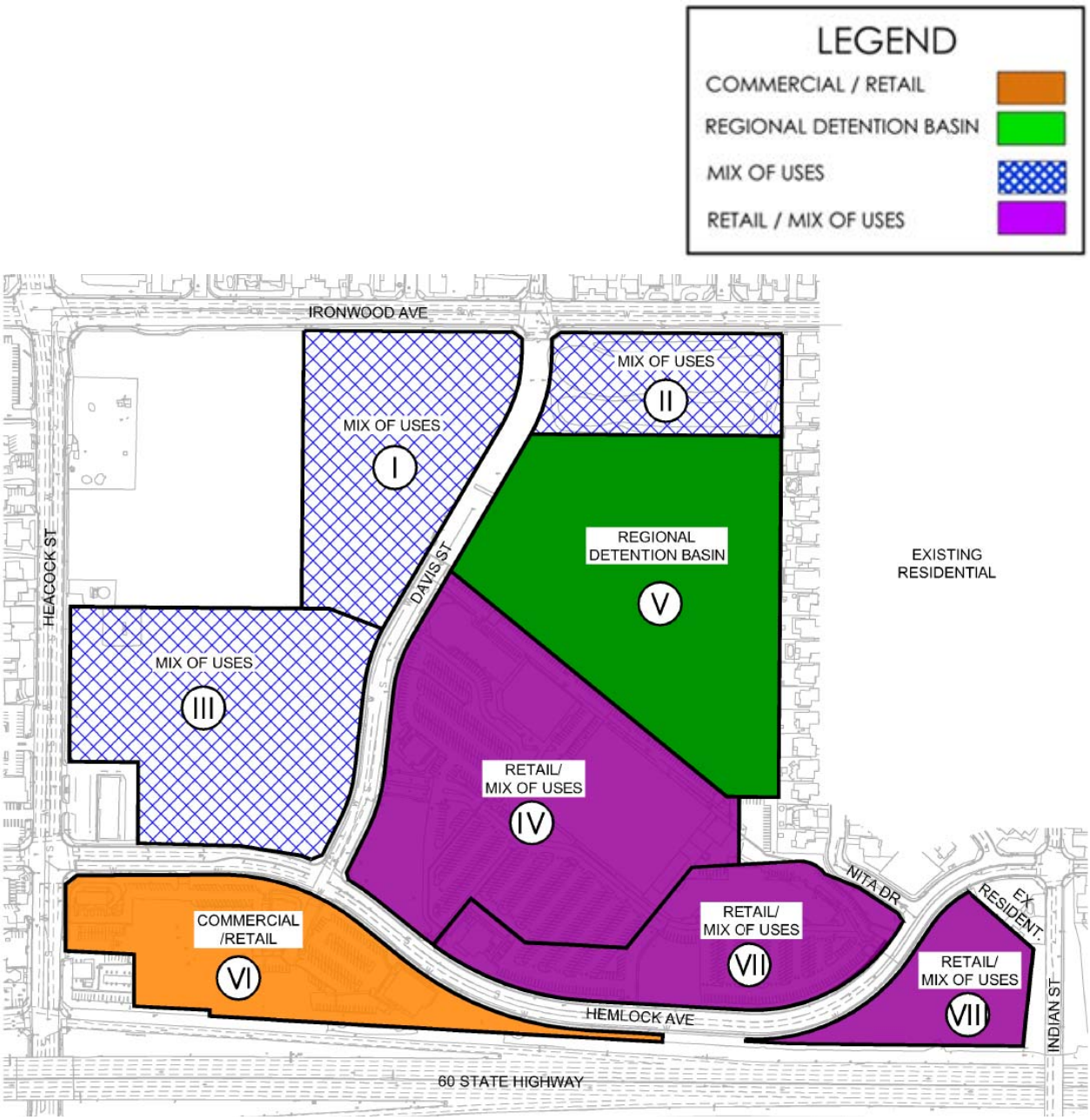


EXHIBIT 2-4
SPECIFIC PLAN AMENDMENT'S PLANNING AREAS
Source: National Engineering Consultants

EXHIBIT 2-5
AERIAL PHOTOGRAPH OF THE PLANNING AREA
Source: Google Earth

The Planning Area is located in the midst of an urbanized area and is surrounding on all sides by urban development. The land uses and development that surround the Planning Area are outlined below.

- *North of the Plan Amendment Area*. Ironwood Avenue extends along the north side of the Planning Area. Single-family residential units are located further north, along the north side of Ironwood Avenue opposite the Planning Area.[16]

- *South of the Plan Amendment Area*. The Moreno Valley Freeway (SR-60) extends along the south side of the Planning Area. Commercial and residential uses are located further south, along the south side of the aforementioned Freeway.[17]

- *East of the Plan Amendment Area*. Single-family residential units extend along the Planning Area's east side. A total of 22 units are located adjacent to the Planning Area. The units have frontage along Nita Drive. The majority of these existing homes are located adjacent to the storm water detention basin (Planning Area 5). Only five units are located next to Planning Area 2 that will undergo development.[18]

- *West of the Plan Amendment Area*. Heacock Street abuts the Planning Area to the west. Various uses, including a State Farm Insurance office, a Rite Aid, and single-family residential are located further west, along the west side of Heacock Street.[19]

Photographs of the Planning Area are provided in Exhibits 2-6 through 2-9.

2.4 PROJECT DESCRIPTION

Overview of the Specific Plan Amendment

The proposed project involves the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan Amendment. The Specific Plan Amendment that is the focus of this Initial Study and Mitigated Negative Declaration (IS/MND) is an amendment to the adopted *Moreno Valley Festival Specific Plan/EIR (SP-205)*. The original Specific Plan was adopted and the EIR was certified by the City of Moreno Valley City Council on October 27, 1987. The purpose of this Amendment is to modify the Adopted Specific Plan as a means to promote a wider range of land uses and development to address current development trends. The expanded range of allowable uses will include a Mix of Uses Development (MU), Commercial/Retail Development (CR), Retail Mix of Uses (RMU) and Open Space (OS) designation. The plan will also facilitate the extension of Davis Street in a northerly direction to ultimately re-connect with the segment of Davis Street that extends north of Ironwood Avenue.

[16] Blodgett Baylosis Environmental Planning. *Site survey*. Survey was conducted on August 9, 2017.

[17] Ibid.

[18] Ibid.

[19] Ibid.

View of the Planning Area facing west

View of the Festival at Moreno Valley shopping center facing east

EXHIBIT 2-6
PHOTOGRAPHS OF THE PLANNING AREA

Source: Blodgett Baylosis Environmental Planning

View of Davis Street looking north

View of the detention basin facing northeast

EXHIBIT 2-7
PHOTOGRAPHS OF THE PLANNING AREA

Source: Blodgett Baylosis Environmental Planning

View of Hemlock Street facing east

View of the existing Festival at Moreno Valley shopping center facing west

EXHIBIT 2-8
PHOTOGRAPHS OF THE PLANNING AREA

Source: Blodgett Baylosis Environmental Planning

View of the Planning Area and SR-60 Freeway facing south

View of the Planning Area and future Davis Street extension facing south

EXHIBIT 2-9
PHOTOGRAPHS OF THE PLANNING AREA

Source: Blodgett Baylosis Environmental Planning

The Plan Amendment's adoption, by itself, will not lead to any physical changes to the environment. However, the Plan Amendment's adoption will establish regulations that will govern the use of the land as well as establishing development standards and regulations. The purpose of the Specific Plan Amendment is to provide a comprehensive planning framework to guide future high quality multi-use development that will include a range of land uses that can prosper in the current economic environment. At the same time, the Specific Plan Amendment will ensure that future land uses are compatible with both existing development in the surrounding area and future development that will occur within the Planning Area itself.

The Plan Amendment's Development Goals

The Specific Plan Amendment provides planning strategies and development standards created specifically for the Planning Area to take into account its unique advantages, to adapt to its constraints, to provide for the economic growth needs of the City, and to create consistent and compatible land uses for the area in an environmentally responsible manner. Key land use and development goals that are applicable to future development in the Planning Area are outlined below:

- To provide the land use designations and infrastructure plan necessary to support the City's Economic Development Action Plan;
- To create a land use and development concept that will provide a balanced approach to the City's responsibilities of fiscal viability, economic opportunity, and environmental integrity;
- To provide numerous ongoing employment opportunities;
- To provide hundreds of construction job opportunities during the project's build-out phase;
- To establish architectural and landscape design guidelines for the future development in the Planning Area; and,
- To provide appropriate transition between the project and adjacent uses.

The Plan Amendment's Environmental Guiding Principals

Future construction, contemplated as part of the Specific Plan's implementation, will be in conformance with California's "Cal-Green" building regulations that mandate environmentally-advanced building practices and regulations to conserve natural resources, reduce greenhouse gas emissions, and promote energy and water conserving. All future development will be required to incorporate sustainable design features to further reduce its environmental footprint, including but not limited to, the following:

- A plan to reduce water consumed for landscape irrigation;
- Requirements to promote the use of alternative forms of transportation;
- Requirements regarding the use of recycled building materials, to the extent feasible;

- Requirements promoting the use of local sources of building materials, to the extent feasible; and,

- Regulations to minimize the use of impervious paved surfaces throughout the project.[20]

The Specific Plan also identifies the backbone infrastructure systems that will be required to serve future development including the expansion of water, sewer, drainage, and other utility facilities. The infrastructure plan also provides for vehicular (car, truck, and bus) and non-vehicular (bicycle and pedestrian) circulation.

Proposed Land Use Plan

The Specific Plan includes a land use plan that will indicate the location and extent of permitted land uses and development within the geographic area governed by the Specific Plan Amendment. The Specific Plan Amendment provides for the development of a master-planned project specifically designed to support specified uses by incorporating landscape and architectural standards, project-wide criteria for streets, drainage, public infrastructure, lighting and signage, and project features responsive to the needs of the Moreno Valley community. The Specific Plan Amendment and land use plan provides for the following land use designations described below and on the following pages:

- **Community Commercial (CC Zone).** The primary purpose of the community commercial (CC) district is to provide for the general shopping needs of area residents and workers with a variety of business, retail, personal and related or similar services.

- **Office Commercial (OC Zone).** The primary purpose of the office commercial (OC) district is to provide for the establishment of business, corporate and administrative office, as well as commercial services which are supportive to major business developments. Retail facilities which support the office developments are permitted, subject to limitations specified in this section.

- **Office (O Zone).** The primary purpose of the office (O) district is to provide areas for the establishment of park-like, office-based working environments for general business, corporate, professional, and administrative offices. It is the further intent of this district to provide setbacks, landscaping and architectural treatments that ensure the location of such uses is relatively compatible with residential development in the vicinity.

- **Light Industrial (LI Zone).** The primary purpose of the light industrial (LI) district is to provide for light manufacturing, light industrial, research and development, warehousing and distribution and multitenant industrial uses, as well as certain supporting administrative and professional offices and commercial uses on a limited basis. This district is intended as an area for light industrial uses that can meet high performance standards.

[20] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

- **Business Park (BP Zone).** The primary purpose of the business park (BP) district is to provide for light industrial, research and development, office-based firms and limited supportive commercial in an attractive and pleasant working environment and a prestigious location. This district is intended to provide a transition between residential and other sensitive uses and more intense industrial and warehousing uses.

- **Open Space (OS).** The primary purposes of the open space (OS) district are to provide for low intensity, outdoor-oriented recreational facilities, preserve unique natural and environmentally sensitive areas, and protect and preserve the public health, safety, and welfare.[21]

Table 2-2 indicates the various types of uses that are permitted in each of the eight individual planning areas.[22]

Table 2-2
Land Use Matrix - List of Permitted and Conditionally Permitted Uses

Development Types Corresponding Zone District	Planning Area							
	1	2	3	4	5	6	7	8
Auto-Related Uses (CC- Community Commercial)								
Automobile Sales, New and Used *(CC Zone)*	C	C	C				C	C
Automobile Service Stations *(CC Zone)*	C	C	P	C		P	C	C
Auto Repair, Minor Service *(CC Zone)*	P	P	P	P		P	P	P
Auto Repair, Paint and Major Service *(CC Zone)*	C	C	P	C		P	C	C
Auto Rentals *(CC Zone)*	P	P	P	P		P	P	P
Auto Related, Accessory Uses *(CC Zone)*	C	C	P	C		P	C	C
Auto Supply Stores *(CC Zone)*	P	P	P	P		P	P	P
Car Wash *(CC Zone)*	P	P	P	P		P	P	P
Parking Lot & Parking Structure *(CC Zone)*	P	P	P	P		P	P	P
Indoor, Entertainment, Fitness, & Sports Facilities (CC- Community Commercial)								
Theaters and Auditoriums *(CC Zone)*	P	P	P	P		P		
Athletic Clubs, Gymnasiums, and Spas *(CC Zone)*	P	P	P	P		P	P	P
Recreational Facilities, Commercial Indoor/Outdoor *(CC Zone)*	P	C	P	C		P	P	P
Business Park (LI-Light Industrial & BP-Business Park)								
Light Industrial *(LI Zone)*	P	P	P	P			P	
Manufacturing & Assembly *(LI Zone)*	P	P	P	P				
Research & Development *(BP-Zone)*	P	P	P	P			P	P
Wholesale & Limited Distribution *(LI Zone)*	P	P	P	P			P	P
Nursery, Wholesale and Distribution *(LI Zone)*	P	P	P	P				P
Parcel Delivery Terminals (*LI Zone and BP-Zone*)	P	P	P	P				P
Transfer, Moving, & Storage *(LI Zone)*	P	P	P	P				P
Office, Business Services, & Professional *(CC-Community Commercial, O-Office & OC -Office Commercial)*								
Banks, including ATMs & drive-thru *(CC, O, and OC Zones)*	P	P	P	P		P	P	P

[21] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

[22] Ibid.

Table 2-2
Land Use Matrix - List of Permitted and Conditionally Permitted Uses (continued)

Corresponding Zone District and Sample Development Types	Planning Area							
	1	2	3	4	5	6	7	8
Retail, Commercial, & Food Related (*CC- Community Commercial*)								
Business Offices *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Business & Office Equipment Sales and Supply Stores *(CC Zone)*	P	P	P	P		P	P	P
Computer Sales and Repairs *(CC and OC Zones)*	P	P	P	P		P	P	P
Copy Shops *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Day Care Centers *(CC, O, and OC Zones)*	P	P	P	C		P	P	P
Finance, Insurance, and Real Estate *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Laboratories, Medical, & Dental *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Medical Offices *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Medical Clinics/Medical Care *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Medical Equipment *(CC and OC Zones)*	P	P	P	P		P	P	P
Personal Grooming *(CC and OC Zones)*	P	P	P	P		P	P	P
Personal Services *(CC and OC Zones)*	P	P	P	P		P	P	P
Public Buildings *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Veterinary Office *(CC)*	P	P	P	P		P	P	P
Bakeries *(CC Zone)*	P	P	P	P		P	P	P
Barbers & Beauty Colleges (CC Zone)	P	P	P	P		P	P	
Bars *(CC Zone)*	P	P	P	C		P	P	
Bars with Live Entertainment *(CC Zone)*	P	C	P	C		P		
Bowling Alley *(CC Zone)*	P	P	P	P		P		
Building Material Sales, incl. Outdoor Storage *(CC Zone)*	P	C	P	C		P	P	P
Business Equipment Sales, Includes Repairs *(CC Zone)*	P	P	P	P		P	P	
Business Supply Stores *(CC Zone)*	P	P	P	P		P	P	
Catering Service *(CC Zone)*			P	P		P	P	
Churches *(CC Zone)*	P	P	P	C		P	P	
Communication Facilities *(CC Zone)*			P	P		C	P	
Computer Sales & Repairs *(CC Zone)*	P	P	P	P		P	P	
Convenience Stores *(CC Zone)*	P	P	P	P		P	P	
Convenience Stores with Alcohol Sales *(CC Zone)*	C	C	P	C		P	P	
Dancing, Art, Similar Schools *(CC Zone)*	P	P	P	P		P	P	
Dry Cleaning & Laundry *(CC Zone)*	P	P	P	P		P	P	
Electronics & Sales *(CC Zone)*	P	P	P	P		P		
Fast Food/Fast Casual Restaurant *(CC Zone)*	P	P	P	P		P	P	P
Fast Food/Fast Casual Restaurant with Drive-thru *(CC Zone)*	P	P	P	P		P	P	P
Floor Covering Stores *(CC Zone)*	P	P	P	P		P	P	P
Food Delicatessen *(CC Zone)*	P	P	P	P		P	P	P
General Commercial *(CC Zone)*	P	P	P	P		P	P	P
Hardware & Home Furnishings *(CC Zone)*	P	P	P	P		P	P	P
Heavy Equipment Sales & Rentals *(CC Zone)*			P	P		P		P
Hospital *(CC Zone)*			P			P	P	P

Table 2-2
Land Use Matrix - List of Permitted and Conditionally Permitted Uses (continued)

Corresponding Zone District and Sample Development Types	Planning Area							
	1	2	3	4	5	6	7	8
Ice Cream & Yogurt *(CC Zone)*	P	P	P	P		P	P	P
Indoor Storage, Mini Warehouses *(CC Zone)*			P	P		P	P	P
Jewelry Stores *(CC Zone)*	P	P	P	P		P	P	P
Liquor Stores *(CC Zone)*	C	C	P	C		P		
Medical Equipment Sales & Supplies *(CC Zone)*	P	P	P	P		P	P	P
Mortuary, Excluding Cremation *(CC Zone)*	P	P	P	C		P		
Offices, Administrative & Professional *(CC Zone)*	P	P	P	P		P	P	P
Personal Services, Nail Salons/Spas/Barbers/Beauty *(CC Zone)*	P	P	P	P		P	P	P
Pharmacies, with and without Drive-Thru *(CC Zone)*	P	P	P	P		P	P	P
Postal Services *(CC Zone)*	P	P	P	P		P	P	P
Recreational Facilities, Commercial *(CC Zone)*	P	P	P	C		P	P	P
Rental Services, Furniture, Office, Home *(CC Zone)*	P	P	P	P		P	P	P
Sit-down Restaurants *(CC Zone)*	P	P	P	P		P	P	P
Skating Rinks *(CC Zone)*	P	P	P	P		P	P	P
Specialty Retail *(CC Zone)*	P	P	P	P		P	P	P
Stationary Stores *(CC Zone)*	P	P	P	P		P	P	P
Supermarkets *(CC Zone)*	P	P	P	P		P	P	P
Tire Stores & Tire Repair *(CC Zone)*	P	P	P	P		P	P	P
Trade & Vocational Schools *(CC Zone)*	P	P	P	P		P	P	P
Weight Reduction Centers *(CC Zone)*	P	P	P	P		P	P	P

KEY:**P** = Permitted Uses **C** = Conditionally Permitted Use * CUP if within 300 feet of a residential zone or use
Blank Box = Not Permitted **Notes:**
(1) Where Live entertainment is present, such uses are subject to activity entertainment permit.
(2) Permitted as part of a mixed use commercial or retail center.
**19.11.030C. *(denoted above)* The location of a proposed manufacturing or industrial use relative to residentially-zoned property *shall represent the sole factor for determining whether discretionary review is required pursuant to this section.*

Details of specific development projects will be determined by subdivisions and site development plans. In the event of a conflict between the Specific Plan and the City of Moreno Valley Municipal Code, the Specific Plan shall prevail. If the Specific Plan is silent on a particular subject, the Municipal Code shall apply. For purposes of the environmental analysis, certain assumptions were made to provide a maximum potential build-out scenario. In this way, the environmental analysis provided in Section three will document the environmental impacts under a maximum case scenario. The potential build-out scenario envisioned for the Specific Plan Area includes 348,000 square feet of Business Park and 325,000 square feet of retail/mix of uses.

Circulation Plan

The Specific Plan Amendment also includes a comprehensive circulation plan that indicates the location and extent of roadways, pedestrian routes, and other facilities needed to accommodate the future development. The circulation plan outlines a hierarchy of roadways and other facilities that will serve the homes, business, and the employment related uses contemplated as part of the Specific Plan's implementation. The majority of the "backbone" circulation system has been constructed though the extension of Davis Street to Ironwood Avenue will need to be completed. The Davis Street extension is also contemplated in the Specific Plan Amendment.

Infrastructure Plan

The Specific Plan Amendment will also ensure that sufficient facilities are provided to accommodate the development envisioned under the Specific Plan's implementation. The Specific Plan Area contains existing water, sewer, and stormwater infrastructure. These storm drains, water, and sewer lines are located within the streets that comprise the Planning Area's circulation network. Additional storm drains, water, and sewer lines are located within the undeveloped portion of Davis Street.

2.5 DISCRETIONARY ACTIONS

A discretionary action is a decision taken by a government agency (for this project, the government agency is the City of Moreno Valley) that calls for an exercise of judgment in deciding whether to approve a project. As part of the proposed project's implementation, the City will consider the following approvals:

- The adoption of the Moreno Valley Festival Specific Plan Amendment;
- The adoption of a General Plan Amendment (GPA) to the City of Moreno Valley General Plan;
- The adoption of a Zone Change to the City of Moreno Valley Zoning Ordinance; and,
- The approval of the Mitigated Negative Declaration (MND); and,
- The adoption of the Mitigation Monitoring and Reporting Program (MMRP).

THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK.

SECTION 3 ENVIRONMENTAL ANALYSIS

This section of the initial study prepared for the proposed project analyzes the potential environmental impacts that may result from the proposed project's implementation. The issue areas evaluated in this Initial Study include the following:

- Aesthetics (Section 3.1);
- Agricultural & Forestry Resources (Section 3.2);
- Air Quality (Section 3.3);
- Biological Resources (Section 3.4);
- Cultural & Tribal Resources (Section 3.5);
- Geology & Soils (Section 3.6);
- Greenhouse Gas Emissions; (Section 3.7);
- Hazards & Hazardous Materials (Section 3.8);
- Hydrology & Water Quality (Section 3.9);
- Land Use (Section 3.10);
- Mineral Resources (Section 3.11);
- Noise (Section 3.12);
- Population & Housing (Section 3.13);
- Public Services (Section 3.14);
- Recreation (Section 3.15);
- Transportation & Circulation (Section 3.16);
- Tribal Cultural Resources (Section 3.17);
- Utilities (Section 3.18); and,
- Mandatory Findings (Section 3.19).

The environmental analysis included in this section reflects the initial study checklist format used by the City of Moreno Valley in its environmental review process. Under each issue area, an analysis of impacts is provided in the form of questions and answers. The analysis then provides a response to the individual questions. For the evaluation of potential impacts, questions are stated and an answer is provided according to the analysis completed as part of this initial study's preparation. To each question, there are four possible responses:

- *No Impact.* The proposed project will not have any measurable environmental impact on the environment.

- *Less Than Significant Impact.* The proposed project may have the potential for affecting the environment, although these impacts will be below levels or thresholds that the City of Moreno Valley or other responsible agencies consider to be significant.

- *Less Than Significant Impact with Mitigation.* The proposed project may have the potential to generate impacts that will have a significant impact on the environment. However, the level of impact may be reduced to levels that are less than significant with the implementation of mitigation measures.

- *Potentially Significant Impact.* The proposed project may result in environmental impacts that are significant.

This Initial Study will assist the City in making a determination as to whether there is a potential for significant adverse impacts on the environment associated with the implementation of the proposed project.

3.1 AESTHETIC IMPACTS

3.1.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse aesthetic impact if it results in any of the following:

- An adverse effect on a scenic vista;
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- A substantial degradation of the existing visual character or quality of the site and its surroundings; or,
- A new source of substantial light and glare that would adversely affect day or nighttime views in the area.

3.1.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project affect a scenic vista? ● No Impact.

The Planning Area consists of underutilized commercial (The Festival at Moreno Valley Shopping Center) and 42.05 acres of open space. The Festival at Moreno Valley Shopping Center is the main visual element present within the Planning Area. The existing shopping center is underutilized with a number of tenant spaces being vacant. The adoption and subsequent implementation of the Specific Plan Amendment includes various goals, policies, and design standards that will enhance the visual appearance of the existing and future land uses and development within the Planning Area. In addition, the Specific Plan includes guidance regarding the design of new development. Section 4.0 of the Specific Plan Amendment is concerned with *off-site* design standards while Section 5.0 focuses on *on-site* design standards.[23]

The off-street design standards address a number of design criteria that includes landscaping around the edges of the planning area, streetscape design amenities, entryway treatments, and signage. The following off-site design requirements included in the Specific Plan Amendment will be effective in addressing potential aesthetic impacts:

- *General Landscaping Design Guidelines.* The Project Design Guidelines section of the Specific Plan Amendment offers more detailed information for individual project developers (also refer to Title 9 of the City Municipal Code).
- *General Landscaping Design Guidelines.* All landscape designs shall adhere to the concept depicted in the Landscape (Plan) Figure 4-3 (included in the Specific Plan Amendment).

[23] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

- *Streetscape Landscaping.* Landscaping along public streets is designed to provide a unified appearance along street frontages, to reinforce the street hierarchy, and to establish identities of place, particularly at intersections within the Planning Area.

- *Streetscape Landscaping.* Implementation of the street landscaping will be executed by the developer during the initial stages of development.

- *Streetscape Landscaping.* Trees will be planted along all existing streets within the Specific Plan Amendment boundaries, where they do not currently exist. In addition, landscape guidelines have been provided for those streets adjacent to the project's boundaries that will require improvements associated with the development.

- *Streetscape Landscaping.* Low growing plant materials will be added to provide year-round color and textural interest. Mounded turf and landscaped berms will be used where appropriate to screen undesirable views, such as parking lots.[24]

- *Parkway Landscaping.* Trees are required along all street frontages. Trees shall be planted in a single row at spacing of 40 feet between each tree (Municipal Code Ordinance. 786 § 2, 2009).

- *Parkway Landscaping.* All street trees within street right of way, unless otherwise noted, are to be 24" box size, with a minimum of eight feet of brown trunk measured from finish grade. Trees in other areas shall be 15 gallon minimum in size but 25% shall be minimum 24" box.

- *Parkway Landscaping.* Landscaping berms along street frontages may be utilized. Maximum slopes may not exceed 2:1. City maintained areas shall not exceed 3:1.

- *Parkway Landscaping.* Shrubs along street frontages are to be utilized where possible. (Minimum size at installation is 1 gallon.)

- *Edge Treatments.* There are six discrete edge treatment plans in and around the project. The areas that will be subject to the edge treatment plans include Hemlock Avenue, Heacock Street, Indian Avenue, Ironwood Avenue, Eastern Edge, and SR 60 Freeway.[25]

- *Screening Criteria for Internal Roadways.* All interior roadways shall be lined with sidewalks, landscaping and setbacks from the street as prescribed by the City of Moreno Valley planning standards and elaborated in this Specific Plan.[26]

- *Entry Themes.* Entrances to Plan Amendment Area shall be enhanced with landscaping, project monument signage and hardscape features.[27]

[24] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

[25] Ibid.

[26] Ibid.

[27] Ibid.

- *Entry Themes.* The landscape concept for the project shall be introduced through the entry treatments. Medium accent trees combined with low evergreen and flowering accent shrubs will be used consistently throughout the project entries. The foreground will feature a combination of ground cover and annual color.[28]

- *Entry Themes.* The entry signage and elements shall be visually clear to vehicular and pedestrian users, and shall allow the use of digital signage subject that it meets the City of Moreno's requirements.[29]

- *Buffer Treatments.* Landscape buffers are required along the eastern, southern, and northern boundaries of the project site. The master developer will be responsible for implementing the buffer system.

- *Buffer Treatments.* When development is located adjacent to existing residential uses, landscape buffers and WQMP basins are recommended to be used as functional buffers for potentially incompatible uses. Refer to sample cross section exhibits below for guidelines.[30]

The Specific Plan Amendment will include *Project Design Guidelines* that will establish guidelines and standards for the individual development. The objective of these guidelines is to create projects that contribute to the overall design continuity of the development while maintaining their own sense of individuality. The following general guidelines which address site, architectural, and landscape design apply to all future development within the Planning Area:[31]

- Vehicular and pedestrian entries to the project should be clearly identifiable to visitors through the use of signage, and landscaping.

- Circulation within sites shall be designed to minimize conflicts between service vehicles, automobiles, and pedestrians.

- Neighboring lots should share entry drives wherever possible to create a greater uninterrupted expanse of landscaping.

- Visibility of parking areas along roadways shall be minimized through the use of landscaped berms and screen shrubs wherever possible.

- Service zones (trash enclosures, loading and outdoor storage areas) shall be located in areas that are least visible to the public. An appropriate screening method shall be used if service zone is exposed to public view.

[28] National Engineering Consultants. *The Moreno Valley Festival, (Draft) Amendment to Specific Plan 205, Section 4.2.4.* October 10, 2017.

[29] Ibid.

[30] Ibid.

[31] Ibid.

- All buildings and walkways shall be accessible to the handicapped according to requirements in Title 24 of the California Administrative Code.

- A secondary sidewalk shall be provided within individual sites and connect with the master circulation system, creating a continuous and pleasant link between projects.

- Consideration should be given to ensure safe pedestrian access through parking areas, and from the public street walkways to building entrances.

- Security measures shall be considered in the project's site design, particularly in pedestrian areas. The use of tall, dense shrubbery should be avoided along walkways and adequate lighting should be provided.

Exhibit 3-1 shows the various project design features that mitigate light trespass and alleviate size and massing. The Specific Plan Amendment states that architectural design should express the character of a mixed use, commercial, and retail development center in a manner that is progressive and enduring. Individual creativity and identity are encouraged, but care must be taken to maintain design integrity and compatibility among all projects in order to establish a clear, unified image throughout the Planning Area. General building design guidelines for the various uses are as follows:

- Distinctive architectural design shall be encouraged to create individual building identity. However, buildings must be compatible with adjacent development projects to achieve a sense of architectural continuity.

- Detailing may vary but all materials are to be durable, aesthetically pleasing, and low maintenance.[32]

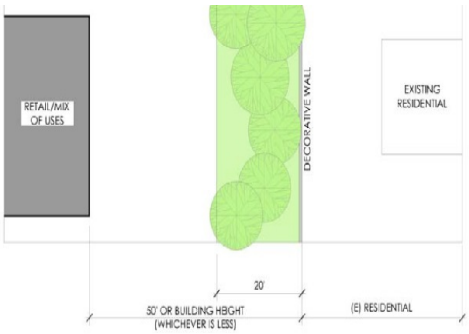
- The building's scale should be a major determining factor in the architectural design and detailing.

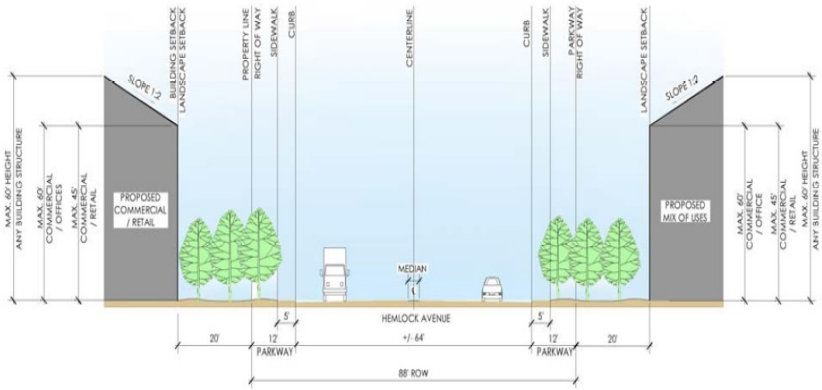
- Long expanses of building walls may be ameliorated by employing a system of overlapping forms and heights.

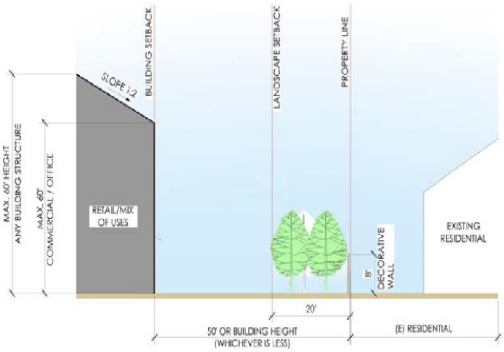
- The architectural concept must be consistent throughout the individual project with consideration given to all sides.

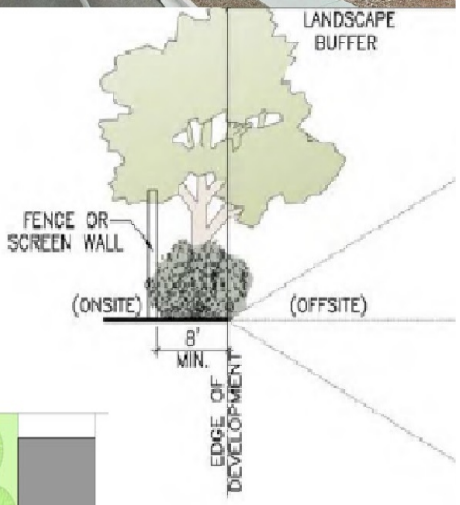
- Distinctive hardscape and colorful landscaping should be used to identify and accentuate building entries.

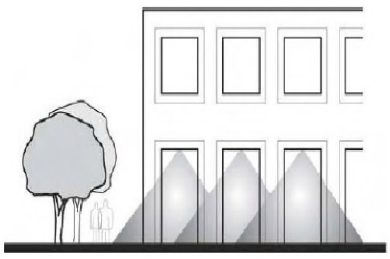
[32] National Engineering Consultants. *The Moreno Valley Festival, (Draft) Amendment to Specific Plan 205, Section 5.3.1.* October 10, 2017.











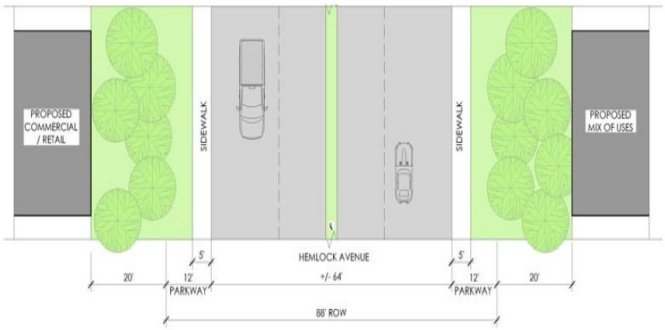


EXHIBIT 3-1
PROJECT DESIGN FEATURES THAT SERVE AS MITIGATION
Source: Amendment to Specific Plan 205

All properties within the Planning Area will be required to be developed in conformance with the Specific Plan Amendment. All development will be consistent with the Specific Plan objectives and design guidelines. Details of specific development projects will be determined by subdivisions and site development plans. In the event of a conflict between the Specific Plan and the City of Moreno Valley Municipal Code, the Specific Plan will prevail. If the Specific Plan is silent on a particular subject, the Municipal Code will apply.[33]

The implementation of the Specific Plan will facilitate development that will not negatively impact any scenic vistas. The most prominent scenic vistas located within the Planning Area include the Box Springs Mountains, located between two to three miles north of the Planning Area, and the San Bernardino Mountains, located 15 miles to the north. The development that is permitted under the Specific Plan will not obstruct views of the aforementioned vistas. The setback and building height standards will prohibit the clustering and placement of new buildings within a certain distance from the public right-of-way, while the maximum height standards will restrict the height of the buildings that will be erected within the Planning Area. As a result, no visual impacts will result from the implementation of the Specific Plan.

B. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? ● No Impact.

According to the California Department of Transportation (Caltrans), neither the SR-60 nor the arterial roadways within the Moreno Valley Festival Specific Plan are designated scenic highways.[34] In addition, the vegetation present within the Planning Area is not considered to be a "scenic resource." The Planning Area does not contain any scenic rock outcroppings.[35] Lastly, the Specific Plan's implementation will not involve the removal of any buildings listed in the State or National Registrar (refer to Section 3.5). As a result, no impacts will occur.

C. Would the project substantially degrade the existing visual character or quality of the site and its surroundings? ● No Impact.

The implementation of the Specific Plan will facilitate modern development within an area that is blighted and underutilized. The Specific Plan articulates design guidelines for architecture, signage, and landscaping in order to establish and maintain a cohesive design theme. The adoption and subsequent implementation of the Specific Plan will further enhance the City's image in a regional context since the Planning Area is visible from the Moreno Valley (SR-60) Freeway. Therefore, the implementation of the Specific Plan will not degrade the site and surrounding area and no impacts are likely to occur.

[33] National Engineering Consultants. *The Moreno Valley Festival, (Draft) Amendment to Specific Plan 205, Section 5.1.4.* October 10, 2017.

[34] California Department of Transportation. *Official Designated Scenic Highways.* www.dot.ca.gov

[35] Blodgett Baylosis Environmental Planning. *Site survey*. Survey was conducted on August 9, 2017.

D. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area? ● Less than Significant Impact.

Exterior lighting can be a nuisance to adjacent land uses that are sensitive to this lighting. For example, lighting emanating from unprotected or unshielded light fixtures may shine through windows that could disturb the residents inside. Sensitive receptors refer to land uses and/or activities that are especially sensitive to light and typically include homes, schools, playgrounds, hospitals, convalescent homes, and other similar facilities where children or the elderly may congregate. The nearest sensitive receptors to the Planning Area are the single-family residential units located along the west side of Nita Drive.[36] Additional light sensitive receptors are shown in Exhibit 3-2.

The adoption of the Specific Plan will not directly result in any light spillover or glare impacts. However, the Specific Plan will facilitate new development and the revitalization of the Festival at Moreno Valley shopping center. According to the Specific Plan, exterior lighting is to be provided to enhance the safety and security of motorists, pedestrians, and cyclists. To reinforce identity and unity, all exterior lighting is to be consistent in height, spacing, color, and type of fixture throughout the building site and compatible throughout the Moreno Valley Festival.[37] This new exterior lighting will be installed in accordance with all applicable regulations outlined in Section 9.08.100 of the City's Municipal Code. In addition, the Specific Plan includes the following objectives that should be considered in the installation of new lighting within the Planning Area.[38]

- Exterior lighting is to be provided to enhance the safety and security of motorists, pedestrians, and cyclists.
- Lighting is intended to create a night time character that reinforces the image of the "MVF" as a quality business location.
- Lighting is an important element contributing to the identity and unity of the "MVF."
- To reinforce identity and unity, all exterior lighting is to be consistent in height, spacing, color, and type of fixture throughout the building site and compatible throughout the "MVF."
- Street lighting on public streets shall meet the requirements of the City Standard Plans.
- The developer will be responsible for installation of light fixtures during the project's initial development phase.
- Street lights per City standards will be installed on all public roads according to the City's recommendations.

As a result, the potential impacts will be less than significant.

[36] Blodgett Baylosis Environmental Planning. *Site survey*. Survey was conducted on August 9, 2017.

[37] National Engineering Consultants. *Amendment to Specific Plan 205, Section 4.3.* October 10, 2017.

[38] Ibid.

EXHIBIT 3-2
LIGHT SENSITIVE USES
Source: Quantum GIS

3.1.3 MITIGATION MEASURES

The analysis of aesthetics indicated that no impacts on these resources would occur as part of the proposed Specific Plan's implementation.

3.2 AGRICULTURE & FORESTRY RESOURCES IMPACTS

3.2.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant impact on agriculture and forestry resources if it results in any of the following:

- The conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance;
- A conflict with existing zoning for agricultural use or a Williamson Act contract;
- A conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §4526), or zoned timberland production (as defined by Government Code §51104(g));
- The loss of forest land or the conversion of forest land to a non-forest use; or,
- Changes to the existing environment that due to their location or nature may result in the conversion of farmland to non-agricultural uses or forest land to non-forest uses.

3.2.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? ● No Impact.

There are no areas of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance located within the Planning Area. Furthermore, there are no agricultural uses or activities located within the Planning Area. The City's General Plan Environmental Impact Report indicates that a majority of the important farmlands are concentrated within the underdeveloped eastern portion of the City.[39] As a result, no impacts will occur.

B. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract? ● No Impact.

According to Section 9.02.020 of the City's Municipal Code, the raising of crops and animals is permitted within all commercial zones.[40] The implementation of the Specific Plan will not conflict with existing

[39] P and D Consultants. *Final Environmental Impact Report - City of Moreno Valley General Plan SCH# 200091075*. Report dated July 2006.

[40] City of Moreno Valley Municipal Code. *Title 9 Planning and Zoning, Chapter 9.02 Permits and Approvals, Section 9.02.020 Permitted Uses*. Site accessed August 15, 2017.

agricultural operations since there are no agricultural uses located within the Planning Area. In addition, none of the properties within the Planning Area are subject to a Williamson Act Contract.[41] As a result, the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not result in any impacts on existing Williamson Act contracts.

C. *Would the project conflict with existing zoning for or cause rezoning of, forest land (as defined in Public Resources Code Section 4526), or zoned timberland production (as defined by Government Code § 51104(g))? ● No Impact.*

The area governed by the Moreno Valley Festival Specific Plan is located in the midst of a larger urban area and no forest lands are located within the City or within this portion of Riverside County. As a result, no impacts on forest land or timber resources will result from the proposed project's implementation.

D. *Would the project result in the loss of forest land or the conversion of forest land to a non-forest use? ● No Impact.*

There are no forest lands present within the Planning Area. This conclusion is supported by the field survey that was undertaken for the proposed project. As a result, the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not result in any impacts related to the loss or conversion of existing forest lands. Therefore, no impacts will result from the project's implementation.

E. *Would the project involve other changes in the existing environment that, due to their location or nature, may result in conversion of farmland to non-agricultural use or forest land to non-forest use? ● No Impact.*

No agricultural activities, farmland uses, or forest uses are located in the geographic area governed by the Moreno Valley Festival Specific Plan.[42] As a result, the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not involve the conversion of any existing farmland area to urban uses or the conversion of forest land to non-forest uses. As a result, no impacts are anticipated.

3.2.3 MITIGATION MEASURES

The analysis of agricultural and forestry resources indicated that no impacts on these resources would occur as part of the proposed Specific Plan's implementation.

3.3 AIR QUALITY IMPACTS

3.3.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project will normally be deemed to have a significant adverse environmental impact on air quality if it results in any of the following:

[41] California Department of Conservation. *State of California Williamson Act Contract Land.* ftp://ftp.consrv.ca.gov/pub/dlrp/WA/2012%20Statewide%20Map/WA_2012_8x11.pdf

[42] Blodgett Baylosis Environmental Planning. *Site survey*. Survey was conducted on August 9, 2017.

- A conflict with the obstruction of the implementation of the applicable air quality plan;
- A violation of an air quality standard or substantial contribution to an existing or projected air quality violation;
- A cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- The exposure of sensitive receptors to substantial pollutant concentrations; or,
- The creation of objectionable odors affecting a substantial number of people.

The South Coast Air Quality Management District (SCAQMD) has established quantitative thresholds for criteria pollutants that include the following:

- *Ozone (O_3)* is a nearly colorless gas that irritates the lungs and damages materials and vegetation. O_3 is formed by photochemical reaction. Los Angeles and the surrounding South Coast Air Basin (SCAB) are designated by the Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) as an extreme ozone *non-attainment area*. [43]
- *Carbon Monoxide (CO)* is a colorless, odorless toxic gas that interferes with the transfer of oxygen to the brain that is produced by the incomplete combustion of carbon-containing fuels emitted as vehicle exhaust. The SCAB is designated as an attainment area for carbon monoxide by the EPA.
- *Nitrogen dioxide (NO_2)* is a yellowish-brown gas that, at high levels, can cause breathing difficulties. NO_2 is formed when nitric oxide (a pollutant from burning processes) combines with oxygen. Although NO_2 concentrations have not exceeded National standards since 1991, NO_2 emissions remain a concern because of their contribution to the formation of O_3 and particulate matter. The SCAB is designated as an attainment area for NO_2 by the EPA.
- *Sulfur dioxide* (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Though SO_2 concentrations have been reduced to levels that are well below State and Federal standards, further reductions in SO_2 emissions are desirable since SO_2 is a precursor to sulfate and PM_{10}. The SCAB is designated as an attainment area for SO_2.
- *PM_{10}* refers to particulate matter less than ten microns in diameter. PM_{10} particulates cause a greater health risk than larger-sized particles since fine particles can more easily cause respiratory irritation. The Federal standards for PM_{10} have been met in most areas within the SCAB.
- *$PM_{2.5}$* refers to particulate matter less than 2.5 microns in diameter. $PM_{2.5}$ also represents a significant health risk because particulate matter of this size may be more easily inhaled, causing

[43] A non-attainment area refers to a geographic area where the Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB) have determined that the air quality standards for the criteria pollutants are not being met.

respiratory irritation. The annual average concentrations of $PM_{2.5}$ exceeded Federal standards in some areas of the SCAB. As a result, $PM_{2.5}$ continues to be designated non-attainment.

Projects in the South Coast Air Basin (SCAB) generating construction-related emissions that exceed any of the following emissions thresholds are considered to be significant under CEQA:

- 75 pounds per day or 2.50 tons per quarter of reactive organic compounds;
- 100 pounds per day or 2.50 tons per quarter of nitrogen dioxide;
- 550 pounds per day or 24.75 tons per quarter of carbon monoxide;
- 150 pounds per day or 6.75 tons per quarter of PM_{10};
- 55 pounds per day or 2.43 tons per quarter of $PM_{2.5}$; or,
- 150 pounds per day or 6.75 tons per quarter of sulfur oxides.

A project would have a significant effect on air quality if any of the following operational emissions thresholds for criteria pollutants are exceeded:

- 55 pounds per day of reactive organic compounds;
- 55 pounds per day of nitrogen dioxide;
- 550 pounds per day of carbon monoxide;
- 150 pounds per day of PM_{10};
- 55 pounds per day of $PM_{2.5}$; or,
- 150 pounds per day of sulfur oxides.

3.3.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. *Would the project conflict with or obstruct implementation of the applicable air quality plan? ● No Impact.*

The Planning Area governed by the Moreno Valley Festival Specific Plan is located within the SCAB which covers a 6,600-square-mile area within Orange County, the non-desert portions of Riverside County, and San Bernardino County. The SCAB is subject to the Final 2016 Air Quality Management Plan (AQMP), which was jointly prepared with the California Air Resources Board (CARB) and the Southern California Association of Governments (SCAG).[44] The Air Quality Handbook refers to the following criteria as a means to determine a project's conformity with the AQMP:[45]

- *Consistency Criteria 1* refers to a proposed project's potential for resulting in an increase in the frequency or severity of an existing air quality violation or its potential for contributing to the continuation of an existing air quality violation.

- *Consistency Criteria 2* refers to a proposed project's potential for exceeding the assumptions included in the AQMP or other regional growth projections relevant to the AQMP's implementation.

[44] South Coast Air Quality Management District, *Final 2016 Air Quality Plan*, Adopted March 2017.

[45] South Coast Air Quality Management District. *CEQA Air Quality Handbook*. 2016.

The Plan's potential build out includes up to 348,000 square feet of business park and 325,000 square feet of retail/mix of uses. As indicated in Tables 3-1 and 3-2, the project's construction and operational emissions are anticipated to be below the thresholds of significance established by the SCAQMD. Therefore, the approval of the Specific Plan Amendment will not violate *Consistency Criteria 1*. In terms of *Consistency Criteria 2*, the potential build-out under the Specific Plan Amendment is within the three alternative build-out projections established for the General Plan. As a result, no impacts related to the implementation of the AQMP are anticipated.

B. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? ● Less than Significant Impact.

The proposed development is conceptual in nature and the timeline for development is not yet known. Individual projects may be proposed upon approval of the Specific Plan amendment, or they may be proposed several years in the future. Therefore, construction timeline of seven years was used. This construction timeline would include the development of all seven planning areas. While the specific details of the development that will be proposed are not yet known, a potential maximum case build-out of 348,000 square feet of business park and 325,000 square feet of retail/mix of uses was used to calculate both construction and operational emissions. The analysis of daily construction and operational emissions was prepared utilizing the California Emissions Estimator Model (CalEEMod V.2016.3.2). The Specific Plan amendment's potential construction emissions are shown in Table 3-1.

Table 3-1
Estimated Daily Construction Emissions

Construction Phase (Estimated year of completion based on 7 year timeline)	ROG	NO_2	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition (on-site) 2018	3.71	38.32	22.30	0.03	4.43	2.18
Demolition (off-site) 2018	0.15	3.17	1.10	0.01	0.38	0.11
Total Demolition 2018	**3.86**	**41.49**	**23.40**	**0.04**	**4.81**	**2.29**
Site Preparation (on-site) 2018	4.56	48.19	22.47	0.03	20.64	12.30
Site Preparation (off-site) 2018	0.10	0.06	0.89	--	0.20	0.05
Total Site Preparation 2018	**4.66**	**48.25**	**23.36**	**0.03**	**20.86**	**12.35**
Grading (on-site) 2019	4.73	54.52	33.37	0.06	9.32	5.60
Grading (off-site) 2019	0.11	0.06	0.88	--	0.22	0.06
Total Grading 2019	**4.84**	**54.58**	**34.25**	**0.06**	**9.54**	**5.66**
Building Construction (on-site) 2019	2.36	21.07	17.16	0.02	1.28	1.21
Building Construction (off-site) 2019	1.70	13.12	13.18	0.05	3.54	1.03
Total Building Construction 2019	**4.06**	**34.19**	**30.34**	**0.07**	**4.82**	**2.24**
Building Construction (on-site) 2020	2.11	19.18	16.84	0.02	1.11	1.05
Building Construction (off-site) 2020	1.54	11.84	11.91	0.05	3.50	1.00
Total Building Construction 2020	**3.65**	**31.02**	**28.65**	**0.07**	**4.61**	**2.05**
Building Construction (on-site) 2021	1.90	17.43	16.57	0.02	0.95	0.90
Building Construction (off-site) 2021	1.41	10.65	10.84	0.05	3.46	0.95
Total Building Construction 2021	**3.31**	**28.08**	**27.41**	**0.07**	**4.41**	**1.85**
Building Construction (on-site) 2022	1.70	15.61	16.36	0.02	0.80	0.76
Building Construction (off-site) 2022	1.32	10.02	10.01	0.05	3.46	0.95
Total Building Construction 2022	**3.02**	**25.63**	**26.37**	**0.07**	**4.26**	**1.71**

Table 3-1
Estimated Daily Construction Emissions

Construction Phase (Estimated year of completion based on 7 year timeline)	ROG	NO_2	CO	SO_2	PM_{10}	$PM_{2.5}$
Paving (on-site) 2022	1.10	11.12	14.58	0.02	0.56	0.52
Paving (off-site) 2022	0.06	0.03	0.51	--	0.16	0.04
Total Paving 2022	**1.16**	**11.15**	**15.09**	**0.02**	**0.72**	**0.56**
Architectural Coatings (on-site) 2023	40.58	1.30	1.81	--	0.07	0.07
Architectural Coatings (off-site) 2023	0.20	0.10	1.54	--	0.55	0.14
Total Architectural Coatings 2023	**40.78**	**1.40**	**3.35**	**--**	**0.62**	**0.21**
Maximum Daily Emissions	**40.79**	**54.58**	**34.26**	**0.08**	**20.84**	**12.35**
Daily Thresholds	**75**	**100**	**55o**	**150**	**150**	**55**

Source: CalEEMod V.2016.3.2. (the worksheet are included herein in Appendix A)

The construction emissions presented in Table 3-1 assume a seven-year construction timeline. In addition, these emissions also assume the simultaneous development of all seven planning areas with the maximum case build-out. These emissions are likely to be lower since the development of the area governed by the Specific Plan amendment will realistically occur in phases. Thus, the likelihood of all seven planning areas undergoing construction at once is slim.

The Planning Area is located in a non-attainment area for ozone and particulates. All construction undertaken in the Specific Plan area will be required to adhere to all SCAQMD regulations related to fugitive dust generation and other construction-related emissions. According to SCAQMD Regulation 403, all unpaved demolition and construction areas shall be regularly watered up to three times per day during excavation, grading, and construction as required (depending on temperature, soil moisture, wind, etc.). Watering could reduce fugitive dust by as much as 55 percent. Rule 403 also requires that temporary dust covers be used on any piles of excavated or imported earth to reduce wind-blown dust. In addition, all clearing, earthmoving, or excavation activities must be discontinued during periods of high winds (i.e. greater than 15 mph), so as to prevent excessive amounts of fugitive dust. Finally, the contractors must comply with other SCAQMD regulations governing equipment idling and emissions controls. The aforementioned SCAQMD regulations are standard conditions required for every construction project undertaken in the City as well as in the Cities and Counties governed by the SCAQMD. As shown in Table 3-1, daily construction emissions are not anticipated to exceed the SCAQMD's significance thresholds.

The long-term air quality impacts associated with the proposed project include mobile emissions from vehicular traffic; on-site stationary emissions related to the operation of machinery; and off-site stationary emissions associated with the off-site generation and consumption of energy (natural gas). The analysis of long-term operational impacts summarized in Table 3-2, also used the CalEEMod computer model developed for the SCAQMD. The maximum case build-out of 348,000 square feet of business park and 325,000 square feet of retail/mix of uses was used to determine the Specific Plan amendment's operational emissions.

Table 3-2
Estimated Operational Emissions in lbs/day

Emission Source	ROG	NO_2	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	15.04	--	0.06	--	--	--
Energy	0.05	0.52	0.43	--	0.03	0.03
Mobile	12.42	53.21	93.68	0.28	83.54	23.08
Total (lbs/day)	**27.52**	**53.73**	**94.19**	**0.28**	**83.58**	**23.12**
Daily Thresholds	**55**	**55**	**55o**	**15o**	**15o**	**55**

Source: CalEEMod V.2016.3.2 (the worksheet are included herein in Appendix A)

As indicated in Table 3-2, the projected long-term emissions are anticipated to be below the thresholds of significance established by the SCAQMD. The operational emissions take into account the number of trips provided in the traffic report. In addition, the uses permitted under the specific plan will serve the local market. Adherence to the mitigation provided in Section 3.7.2.B will further reduce operational emissions. As a result, the potential impacts are considered to be less than significant.

C. *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ● No Impact.*

As indicated previously, the SCAB is a designated non-attainment area for ozone and particulates. As stated in the previous subsection, the projected long-term emissions related to the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will be the same as that envisioned for the implementation of the Moreno Valley General Plan. In addition, the project is an infill development, which is beneficial because it reduces urban sprawl and the overall vehicle miles traveled (VMT) by being located on an underutilized parcel in a developed area. As a result, no impacts related to the adoption and subsequent implementation of the Specific Plan will occur.

D. *Would the project expose sensitive receptors to substantial pollutant concentrations? ● Less than Significant Impact.*

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The closest sensitive receptors are located along the west side of Nita Drive. Additional sensitive receptors are depicted in Exhibit 3-3.

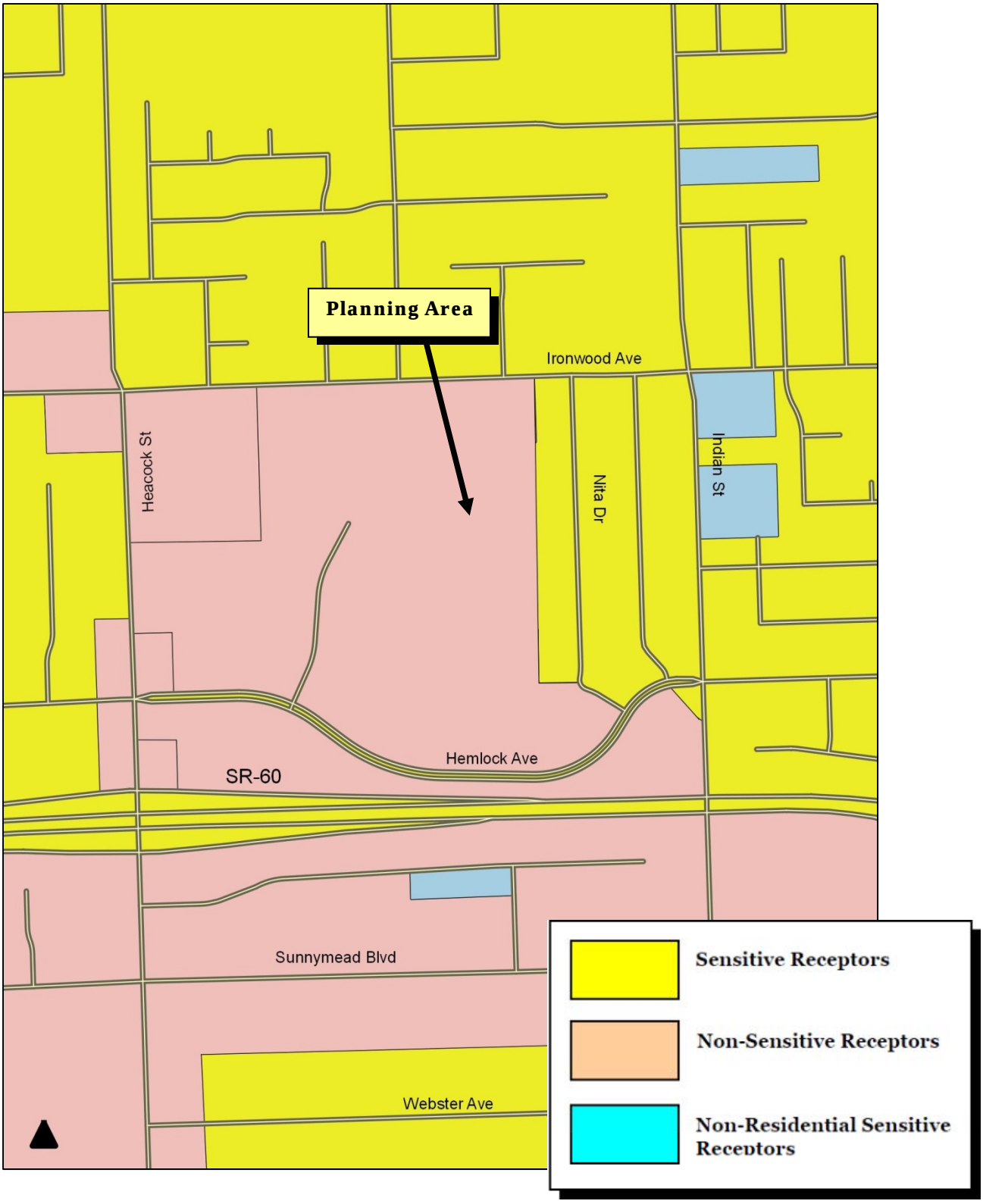


EXHIBIT 3-3
SENSITIVE RECEPTORS
Source: Quantum GIS

Most vehicles generate carbon monoxide (CO) as part of the tail-pipe emissions and high concentrations of CO along busy roadways and congested intersections are a concern. The areas surrounding the most congested intersections are often found to contain high levels of CO that exceed applicable standards. Typically, a hot-spot may occur near an intersection that is experiencing severe congestion (a LOS E or LOS F). The SCAQMD stated in its CEQA Handbook that a CO hot-spot would not likely develop at an intersection operating at LOS C or better. Since the Handbook was written, there have been new CO emissions controls added to vehicles and reformulated fuels are now sold in the SCAB. These new automobile emissions controls, along with the reformulated fuels, have resulted in a lowering of both ambient CO concentrations and vehicle emissions. As a result, the impacts related to the adoption and subsequent implementation of the Plan Amendment will be less than significant.

E. Would the project create objectionable odors affecting a substantial number of people? ● No Impact.

The SCAQMD has identified those land uses that are typically associated with odor complaints. These uses include activities involving livestock, rendering facilities, food processing plants, chemical plants, composting activities, refineries, landfills, and businesses involved in fiberglass molding.[46] The Plan will facilitate the development of retail, retail/mix of uses, and mix of uses. The nature of the tenant mix is not yet known. However, should any of the future tenants be involved in any odor generating use, the future tenant must be in compliance with all applicable SCAQMD regulations. Furthermore, no odors were observed coming from the uses located within the Planning Area based on the field survey that was undertaken. As a result, no impacts will result.

3.3.3 MITIGATION MEASURES

The analysis presented above indicated that the project's potential air quality impacts are considered to be less than significant. These emissions are further reduced with the implementation of the mitigation presented in Section 3.7.2.B.

3.4 BIOLOGICAL RESOURCES IMPACTS

3.4.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse impact on biological resources if it results in any of the following:

- A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service;

- A substantial adverse effect on any riparian habitat or other sensitive natural plant community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

[46] South Coast Air Quality Management District. *CEQA Air Quality Handbook.* April 1993.

- A substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;

- A substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory life corridors, or impede the use of native wildlife nursery sites;

- A conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or,

- A conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

3.4.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? ● Less than Significant Impact with Mitigation.

Hernandez Environmental Services conducted a literature review and reviewed aerial photographs and topographic maps of the project site and surrounding areas. The Sunnymead quadrangle and adjacent surrounding eight quadrangles were reviewed to identify sensitive species in the California Natural Diversity Data Base (CNDDB). Additional resources reviewed during the literature search included the United States Fish and Wildlife (USFWS) Endangered Species Lists, Forest Service List, and the California Native Plant Society's (CNPS) Rare plant lists to obtain species information for the project area.[47] In addition, Hernandez Environmental Services conducted field survey of the approximate 49-acre project site on July 13, 2015. The ambient temperature at 9:30 a.m. was 72˚Fahrenheit, sunny, with zero to three mile per hour winds from the northeast. The purpose of the field survey was to document the existing habitat conditions, obtain plant and animal species information, view the surrounding uses, assess the potential for state and federal waters, and assess the potential for wildlife movement corridors, sensitive species, and nesting habitat.[48] The report considered 13 species that are listed as state and/or federally threatened, endangered, or candidate species. These 13 species are also identified for special consideration under the Riverside County MSHCP. The 13 species are outlined below:

- *Southern Mountain Yellow-Legged Frog*;
- *Tricolored Blackbird*;
- *Burrowing Owl*;
- *Western Yellow-Billed Cuckoo*;
- *Southwestern Willow Flycatcher;*
- *Bald Eagle*;

[47] Hernandez Environmental Services. *General Biological Assessment Report, Moreno Valley Festival.* Report dated November 2015.

[48] Ibid.

- *Coastal California Gnatcatcher*;
- *Least Bell's Vireo;*
- *Santa Ana Sucker*; and,
- *Quino Checkerspot Butterfly*.[49]

According to the report, none of the species identified above are likely to be encountered within the Planning Area due to the amount of disturbance that has occurred to accommodate the existing landscaping and development. Hernandez Environmental Services also conducted a Burrowing Owl Survey and prepared a report to summarize the findings. According to the Burrowing Owl Survey, there were no signs of Burrowing Owl habitation within the Planning Area.[50] Species exclusively identified in the Western Riverside MSHCP are listed below:

- *Cooper's Hawk*. Cooper's hawk is a CDFW watch list species and International Union for Conservation of Nature (IUCN) species of least concern. The species foraging habitat includes rivers, and woodlands including willows, cottonwoods, and sycamores. Nesting habitat for this species occurs at the project site in the Eucalyptus trees adjacent to the site. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

- *Bell's Sage Sparrow*. Bell's sage sparrow is a CDFW watch list species and USFWS bird of conservation concern. The species nests in coastal sage scrub and chaparral. The project site supports some disturbed coastal sage scrub that may serve as habitat. This species is potentially present, though this species is considered adequately conserved.

- *Orange-throat Whiptail.* Orange-throat whiptail is a CDFW species of special concern and IUCN species of least concern. The species inhabits low elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitat. The project site supports some disturbed coastal sage scrub that may serve as habitat. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.[51]

- *Coastal Whiptail.* Coastal whiptail is a CDFW species of special concern and IUCN species of least concern. It is found in a variety of ecosystems, primarily in hot and dry open areas with sparse foliage – chaparral, woodland, and riparian areas. The project site supports habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

- *Red-diamond Rattlesnake*. Red-diamond rattlesnake is a CDFW species of special concern. The species habitat includes coastal sage scrub or chaparral with granite boulders. The project site supports habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

[49] Hernandez Environmental Services. *Burrowing Owl Memorandum*. Report dated November 23, 2015.

[50] Ibid.

[51] Hernandez Environmental Services. *General Biological Assessment Report, Moreno Valley Festival.* Report dated November 2015.

- *California Horned Lark*. California horned lark is a CDFW watch list species and IUCN species of least concern. The species is found in open areas dominated by sparse low herbaceous vegetation or widely scattered low shrubs. The project site supports habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

- *Western Yellow Bat*. Western yellow bat is a CDFW species of special concern and IUCN species of least concern. The species occupies a range of habitats of extremely arid areas including savannas, secluded woodlands, regions dominated by pasture or croplands, and residential areas. It is insectivorous and often roosts in trees. The project site supports limited roosting habitat for this species. This species is potentially present.

- *San Diego Black-tailed Jackrabbit*. San Diego black-tailed jackrabbit is a CDFW species of special concern. The species habitat includes chaparral and coastal sage scrub. The project site supports limited habitat for this species. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

- *Coast Horned Lizard*. Coast horned lizard is a CDFW species of special concern and IUCN species of least concern. The species inhabits open areas of sandy soils and low vegetation in valleys, foothills, and semiarid mountains. It is found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. The project site supports limited habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

- *Lawrence's Goldfinch*. Lawrence's goldfinch is an IUCN species of least concern. The species inhabits open woodlands, chaparral, and weedy fields. The project site supports limited habitat for this species in the basin located adjacent to the eastern project boundary. This species is potentially present.[52]

The implementation of the Specific Plan and all subsequent development may have the potential to impact the aforementioned Western Riverside MSHCP species. As a result, the following mitigation is required:

- The proposed project must be consistent with the Western Riverside MSHCP. Payment of the appropriate development mitigation fees will mitigate any impacts to these species.

- Prior to any land disturbance, a focused pre-construction burrowing owl survey shall be conducted prior to construction in accordance with the Burrowing Owl Survey instructions of the Western Riverside County MSHCP. This survey is to be conducted within 30 days prior to ground disturbance. After the pre-construction burrowing owl survey has been completed, a survey report will be prepared in accordance with the MSHCP 30-day Pre-construction Burrowing Owl Survey Report Format.

[52] Hernandez Environmental Services. *General Biological Assessment Report, Moreno Valley Festival.* Report dated November 2015.

Adherence to the above-mentioned mitigation will reduce potential impacts to levels that are less than significant.

B. *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? ● Less than Significant Impact with Mitigation.*

The project site contains seven habitat types: 23.4 acres of developed habitat, 20.2 acres of disturbed non-native vegetation habitat, 3.20 acres of disturbed non-native grasses habitat, 1.15 acres of disturbed coastal sage scrub, 0.87 acres of ornamental vegetation habitat, 0.16 acres of streambed, and 0.07 acres of mulefat habitat. The following is a description of each habitat type:

- *Developed Habitat.* Approximately 23.4 acres of developed habitat exists in the Planning Area. The developed habitat contains existing commercial and retail buildings and the majority of the buildings are currently being utilized. This habitat also included parking lot areas, and contain no native habitat and wildlife value.

- *Disturbed Non-native Vegetation Habitat.* The Planning Area contains approximately 20.2 acres of disturbed non-native vegetation habitat. This habitat type has been disturbed and native vegetation has been removed by disking or other anthropomorphic activities. Dominant plant species found in this habitat type consist of black mustard (*Brassia nigra*), mustard (*Brassica tournefortii*), tacalote (*Centaurea melitensis*), bullthistle (*Cirsium vulgare*), field bindweed (*Convolvulus arvensis*), heron's bill (*Erodium cicutarium*), horehound (*Marrubium vulgare*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), and Russian thistle (*Salsola tragus*).

- *Disturbed Non-native Grasses Habitat.* The Planning Area contains approximately 3.20 acres of disturbed non-native grasses habitat. This habitat type has been disturbed and native vegetation has been removed by disking or other anthropomorphic activities. Dominant plant species found in this habitat type consist of slim oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail (*Bromus madritensis*), foxtail barley (*Hordeum murinum*), and common barley (*Hordeum vulgare*).

- *Disturbed Coastal Sage Scrub Habitat.* The Planning Area contains approximately 1.15 acres of disturbed coastal sage scrub habitat. This habitat type has shrubs commonly associated with coastal sage scrub, but shows evidence of having been disturbed in the past. The coastal sage scrub does not look very well developed, and has sections where it has obviously been disturbed by anthropomorphic activities. Dominant vegetation in this habitat type include: brittlebush (*Encelia farinosa*), California buckwheat (*Eriogonum fasciculatum*), lotus (*Acmispon strigosus*), gord (*Cucurbita foetidissima*), tarweed (*Deinandra fasciculata*), black sage (*Salvia mellifera*), and telegraph weed (*Heterotheca grandifolia*).

- *Disturbed Coastal Sage Scrub Habitat.* The Planning Area contains approximately 0.87 acres of ornamental vegetation habitat. This habitat type has been created and is composed entirely of non-native trees and shrubs. Common species associated with this habitat type are eucalyptus (*Eucalyptus* sp.), oleander (*Nerium oleander*), and Peruvian pepper tree (*Schinus molle*).

- *Streambed Habitat.* The Planning Area contains approximately 0.16 acres of streambed habitat. This habitat is characterized by sandy streambed with small amounts of native and non-native vegetation. Vegetation species associated with this habitat include: Mexican fan palm (Washingtonia robusta), tree tobacco, horseweed (*Erigeron canadensis*), heliotrope (Heliotropium curassavicum), sunflower (Helianthus annus), and tamarisk (*Tamarix sp.*).

- *Mulefat Habitat.* The Planning Area contains approximately 0.07 acres of mulefat habitat. The ephemeral drainage contains small patches of areas dominated by mulefat (Baccharis salicifolia).[53]

Exhibit 3-4 illustrates the various types of habitat within the Planning Area. In addition, the project's implementation will not affect plant species covered under the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP). The Planning Area is not located within the narrow endemic plant overlay and a habitat assessment for narrow endemic plants was not required. A total of 11 plant species covered under the MSHCP were also identified as state and/or federally listed as Threatened, Endangered, or Candidate species. These 11 species have a rank of 1B.1 or 1B.2 in the California Native Plant Society (CNPS) Rare Plant Inventory and are described below:

- *Munz's Onion.* Munz's onion (*Allim munzii*) is federally listed as Endangered and State listed as Threatened; the species rank is 1B.1 in the CNPS rare plant inventory. The species is found in grassy openings in coastal-sage scrub vegetation at elevations ranging from 300-900 meters. Its blooming period is from April to May. The Planning Area has been disked and there is no suitable habitat for this species. Thus, this species is not present within the Planning Area.

- *San Diego Ambrosia.* San Diego Ambrosia (*Ambrosia pumila*) is a federally listed Endangered species and is a rank 1B.1 species in the CNPS rare plant inventory. The species is found in disturbed sites at elevations ranging from 50 – 600 meters. Its blooming period is from April to July. The Planning Area has been disked and the disturbed habitat may be suitable for this species. Thus, this species is not present within the Planning Area.

- *Marsh Sandworth.* Marsh sandworth (*Arenaria paludicola*) is federally and State listed as Endangered and is ranked as 1B.1 in the CNPS rare plant inventory. The species is found in wet meadows and marshes at elevations less than 300 meters. The species blooms from late spring into summer.

[53] Hernandez Environmental Services. *General Biological Assessment Report, Moreno Valley Festival.* Report dated November 2015.

EXHIBIT 3-4
TYPES OF HABITAT WITHIN THE PLANNING AREA

The Planning Area has been disked and disturbed and is not suitable for this species. The basin area on the east side of the property is regularly maintained and does not support suitable habitat for marsh sandworth. Thus, this species is not present within the Planning Area.

- *San Jacinto Valley Crownscale*. San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) is a federally listed endangered species and is ranked as 1B.1 in the CNPS rare plant inventory. The species is found in alkaline flats at elevations ranging from 400-500 meters. Its blooming period is April to August. The Planning Area has been disked and the disturbed habitat is not suitable for this species. Therefore, this species is not present within the Planning Area.

- *Nevin's Barberry*. Nevin's barberry (*Berberis nevinii*) is a federally and State listed endangered species and is a rank 1B.1 species in the CNPS rare plant inventory. The species is found in sandy to gravelly soils, washes, and chaparral habitats at elevations less than 650 meters. It blooms from March to May. The Planning Area has been disked and the disturbed habitat is not suitable for this species. Therefore, this species is not present within the Planning Area.

- *Thread-leaved Brodiaea*. Tread-leaved brodiaea (*Brodiaea filifolia*) is a federally listed threatened and State listed endangered species. The species is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in grassland habitats and vernal pools at elevations ranging from 25 to 860 meters. Its blooming period is from March to June. The Planning Area has been disked and the disturbed habitat is not suitable for this species. The basin area on the east side of the Planning Area is regularly maintained and does not support suitable habitat for thread-leaved brodiaea. Therefore, this species is not present within the Planning Area.

- *Salt Marsh Bird's-Beak*. Salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*) is a federally and State listed endangered species and is ranked 1B.2 in the CNPS rare plant inventory. This species occurs in coastal salt marsh habitat at elevations less than 10 meters. Its blooming period is from May to October. The Planning Area has been disked and the disturbed habitat is not suitable for this species. Therefore, this species is not present within the Planning Area.

- *Slender-Horned Spineflower*. Slender-horned spineflower (*Dodecahema leptoceras*) is a federally and State listed Endangered species and is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in sand or gravel soils at elevations ranging from 200 to 700 meters. Its flowering period is from May to June. The Planning Area does not support suitable habitat for this species. Therefore, this species is not present within the Planning Area.[54]

- *Santa Ana River Woollystar*. Santa Ana River Woollystar (*Eriastrum densifolium* ssp. *sanctorum*) is a federally and state listed Endangered species and is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in washes, floodplains, and dry riverbeds at elevations less than 500 meters. Its blooming period is from May to September. The Planning Area does not support suitable habitat for this species. Therefore, this species is not present within the Planning Area.

[54] Hernandez Environmental Services. *General Biological Assessment Report, Moreno Valley Festival.* Report dated November 2015.

- *Gambel's Water Cress.* Gambel's water cress (*Nasturtium gambelii*) is a federally listed Endangered and State listed threatened species; it is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in marshes, streambanks, and lake margins at elevations less than 350 meters. Its blooming period is from May to August. The Planning Area does not support suitable habitat for this species. Therefore, this species is not present within the Planning Area.

- *Spreading Navarretia.* Spreading navarretia (*Navarretia fossalis*) is a federally listed threatened species and is ranked 1B.1 in the CNPS rare plant inventory. This species is found in vernal pools and ditches at elevations ranging from 30 to 1,300 meters. Its blooming period is from April to June. The Planning Area does not support habitat suitable for this species. Therefore, this species is not present within the Planning Area.[55]

The implementation of the Specific Plan Amendment will not affect any of the aforementioned plant species. However, the development envisioned under the Specific Plan will affect up to 0.23 acres (approximately 10,000 square feet) of riparian habitat. As a result, the following mitigation is required in order to reduce potential impacts to riparian habitat to levels that are less than significant:

- Future developers must consult with the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Santa Ana Regional Water Quality Control Board to determine the need for permits that must be obtained prior to initiation of construction of a proposed project.

- Prior to the start of construction activity, developers must prepare a Multiple Species Habitat Conservation Program (MSHCP) Determination of Biologically Equivalent or Superior Preservation (DBESP) should a future project affect Western Riverside MSHCP riverine resources.

Adherence to the aforementioned resources will result in impacts that are considered to be less than significant.

C. *Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? ● Less than Significant Impact.*

A Jurisdictional Delineation Report was also prepared for the Planning Area. The purpose of this jurisdictional delineation is to:

- Determine if any state or federal jurisdictional waters are present within the project site boundaries;

- Quantify any impacts to jurisdictional waters due to the proposed project, if possible;

- Determine if the project will require state or federal permits for impacts to jurisdictional waters; and,

[55] Hernandez Environmental Services. *General Biological Assessment Report, Moreno Valley Festival.* Report dated November 2015.

- Recommend mitigation measures to offset impacts to state or federal jurisdictional waters.

Jurisdiction has been delineated for the following agencies:

- *California Department of Fish and Wildlife.* The Planning Area contains approximately 0.23 acres of ephemeral drainage. Approximately 0.16 acre of the Planning Area drainage is characterized by sandy streambed with small amounts of native and nonnative vegetation. Vegetation species associated with this habitat include: Mexican fan palm, tree tobacco, horseweed, heliotrope, sunflower, and tamarisk. Approximately 0.07 acres of the ephemeral drainage is characterized by riparian habitat dominated by mulefat. The entire 0.23 acre ephemeral drainage would be under the jurisdiction of Section 1602 of the California Department of Fish and Game Code Lake and Streambed Alteration Agreement Program.

- *United States Army Corps of Engineers.* The ephemeral drainage was determined to be a non-relatively permanent water that has no adjacent wetlands and flows directly or indirectly into a traditional navigable water. Approximately 0.20 acres of the ephemeral drainage are considered waters of the United States, which would be regulated under the Section 404 of the Clean Water Act and the United States Army Corps of Engineers. These waters were determined by identifying the ordinary high water mark within the banks of the ephemeral drainage. These waters eventually flow into the Pacific Ocean, but prior flow into Canyon Lake and Lake Elsinore.

- *Santa Ana Regional Water Quality Control Board.* The ephemeral drainage was determined to be a non-relatively permanent water that has no adjacent wetlands and flows directly or indirectly into a traditional navigable water. Approximately 0.20 acres of the ephemeral drainage are considered waters of the United States, which would be regulated under Section 401 of the Clean Water Act and the Santa Ana Regional Water Quality Control Board. Any 404 permit issued for these waters would also require a 401 certification.

Exhibit 3-5 shows the Waters of the U.S. located within the planning area. United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Santa Ana Regional Water Quality Control Board (RWQCB) jurisdictional waters are regulated by federal, state, and local governments under a no-net-loss policy, and all impacts are considered significant and should be avoided to the greatest extent possible. Unavoidable and authorized impacts would require mitigation through habitat creation, enhancement, or preservation as determined by a qualified restoration biologist in consultation with the regulatory agencies during the permitting process. Any impacts to USACE, CDFW, and RWQCB jurisdictional waters would require a Section 404 permit authorization from the USACE, a 1600 Streambed Alteration Agreement from the CDFW, and a 401 State Water Quality Certification from the RWQCB. Mitigation for impacts to jurisdictional resources will be addressed in a mitigation plan to be submitted for approval with the permit application packages. Coordination with the aforementioned agencies will reduce potential impacts to levels that are less than significant.

EXHIBIT 3-5
WATERS OF THE US WITHIN THE PLANNING AREA
Source: Hernandez Environmental Services

D. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory life corridors, or impede the use of native wildlife nursery sites? ● Less than Significant Impact with Mitigation

According to the General Biological Assessment report, the Planning Area contains vegetation that is suitable for nesting and migrating birds. For future projects located within the Specific Plan area, the following mitigation measures will apply:

- Vegetation removal shall be conducted outside of the nesting season for migratory birds to avoid direct impacts. The migratory bird nesting season is between February 1 and September 15.

- If active nests are found during nesting bird surveys, they shall be flagged and a 200-foot buffer shall be fenced around the nests.

- If vegetation removal will occur during the migratory bird nesting season, between February 1 and September 15, pre-construction nesting bird surveys must be performed within three days prior to vegetation removal.

Adherence to the mitigation measures identified above will reduce potential impacts to levels that are less than significant.

E. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ● No Impact.

Chapter 9.17, Street Trees, of the City's Municipal Code governs the planting of trees within certain major arterials. According to the Code, street trees are installed a minimum of one foot, and a maximum of two feet, on the private side of the property line (single-family residential lots) or in the public right-of-way for all other projects. Should any trees be planted within the public right-of-way, future Applicants must consult with the City to determine the appropriate species of tree that will be planted. In addition, the Moreno Valley Festival Specific Plan also includes a focus on landscaping and tree planting with the new developments.

The project site is not located within a Western Riverside County MSHCP Criteria Area. As such, the proposed Project is not required to set aside conservation lands pursuant to the Western Riverside County MSHCP, and the proposed project is not subject to the MSHCP's Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process, or Joint Project Review (JPR). As a result, the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not result in any impacts.

F. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? ● No Impact.

The entire City is located within the Western Riverside MSHCP. However, the Planning Area is not located within a criteria cell of the MSHCP. The City of Moreno Valley Municipal Code contains provisions for the protection of the Stephens' Kangaroo Rat pursuant to the Stephens' Kangaroo Rat HCP (refer to Title 8,

Chapter 8.60 of the Municipal Code). The project site is not located within an identified reserve area for the Stephens' Kangaroo Rat and the species has a low to moderate potential to occur on the project site. In addition, the species was not observed during biological surveys of the project site or the off-site improvement area. Accordingly, the project is exempt from the focused survey requirements for the Stephens' Kangaroo Rat established by the City's Municipal Code. The project Applicant is required to contribute a local development impact and mitigation fee, which requires a fee payment to assist the City in implementing the habitat conservation plan for the Stephens' Kangaroo Rat.

The project Applicant is required to contribute a local mitigation fee to assist the Western Riverside County – Regional Conservation Authority in implementing the Western Riverside County MSHCP reserve system (including the acquisition, management, and long-term maintenance of sensitive habitat areas). With mandatory compliance with standard regulatory requirements (i.e., mitigation fee payment), the proposed Project would not conflict with any City policies or ordinances related to the mitigation fee program associated with Western Riverside County MSHCP.

3.4.3 MITIGATION MEASURES

The analysis indicated that the proposed project may result in impacts to protected species and habitat. As a result, the following mitigation is required:

Mitigation Measure No. 1 (Biological Resources Impacts). The proposed project must be consistent with the Western Riverside MSHCP. Payment of the appropriate development mitigation fees will mitigate any impacts to these species.

Mitigation Measure No. 2 (Biological Resources Impacts). Prior to any land disturbance, a focused pre-construction burrowing owl survey shall be conducted prior to construction in accordance with the Burrowing Owl Survey instructions of the Western Riverside County MSHCP. This survey is to be conducted within 30 days prior to ground disturbance. After the pre-construction burrowing owl survey has been completed, a survey report will be prepared in accordance with the MSHCP 30-day Pre-construction Burrowing Owl Survey Report Format.

Mitigation Measure No. 3 (Biological Resources Impacts). Future developers must consult with the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Santa Ana Regional Water Quality Control Board to determine the need for permits that must be obtained prior to initiation of construction of a proposed project.

Mitigation Measure No. 4 (Biological Resources Impacts). Prior to the start of construction activity, developers must prepare a Multiple Species Habitat Conservation Program (MSHCP) Determination of Biologically Equivalent or Superior Preservation (DBESP) should a future project affect Western Riverside MSHCP riverine resources.

Mitigation Measure No. 5 (Biological Resources Impacts). Vegetation removal shall be conducted outside of the nesting season for migratory birds to avoid direct impacts. The migratory bird nesting season is between February 1 and September 15.

Mitigation Measure No. 6 (Biological Resources Impacts). If active nests are found during nesting bird surveys, they shall be flagged and a 200-foot buffer shall be fenced around the nests.

Mitigation Measure No. 7 (Biological Resources Impacts). If vegetation removal will occur during the migratory bird nesting season, between February 1 and September 15, pre-construction nesting bird surveys must be performed within three days prior to vegetation removal.

3.5 CULTURAL & TRIBAL RESOURCES IMPACTS

3.5.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project will normally have a significant adverse impact on cultural resources if it results in any of the following:

- A substantial adverse change in the significance of a historical resource as defined in §15064.5 of the State CEQA Guidelines;
- A substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the State CEQA Guidelines;
- The destruction of a unique paleontological resource, site, or unique geologic feature; or,
- The disturbance of any human remains, including those interred outside of formal cemeteries.

3.5.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. *Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 of the State CEQA Guidelines? ● No Impact.*

Historic structures and sites are generally defined by local, State, and Federal criteria. A site or structure may be historically significant if it is protected through a local general plan or historic preservation ordinance. The U.S. Department of the Interior has established specific guidelines and criteria that indicate the manner in which a site, structure, or district is to be identified as having historic significance through a determination of eligibility for listing on the National Register of Historic Places. Significance may be determined if the property is associated with events, activities, or developments that were important in the past, with the lives of people who were important in the past, or represents significant architectural, landscape, or engineering elements. The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not involve any removal of historically buildings. Exhibit 3-6 shows locally designated historical resources in the vicinity of the Planning Area.

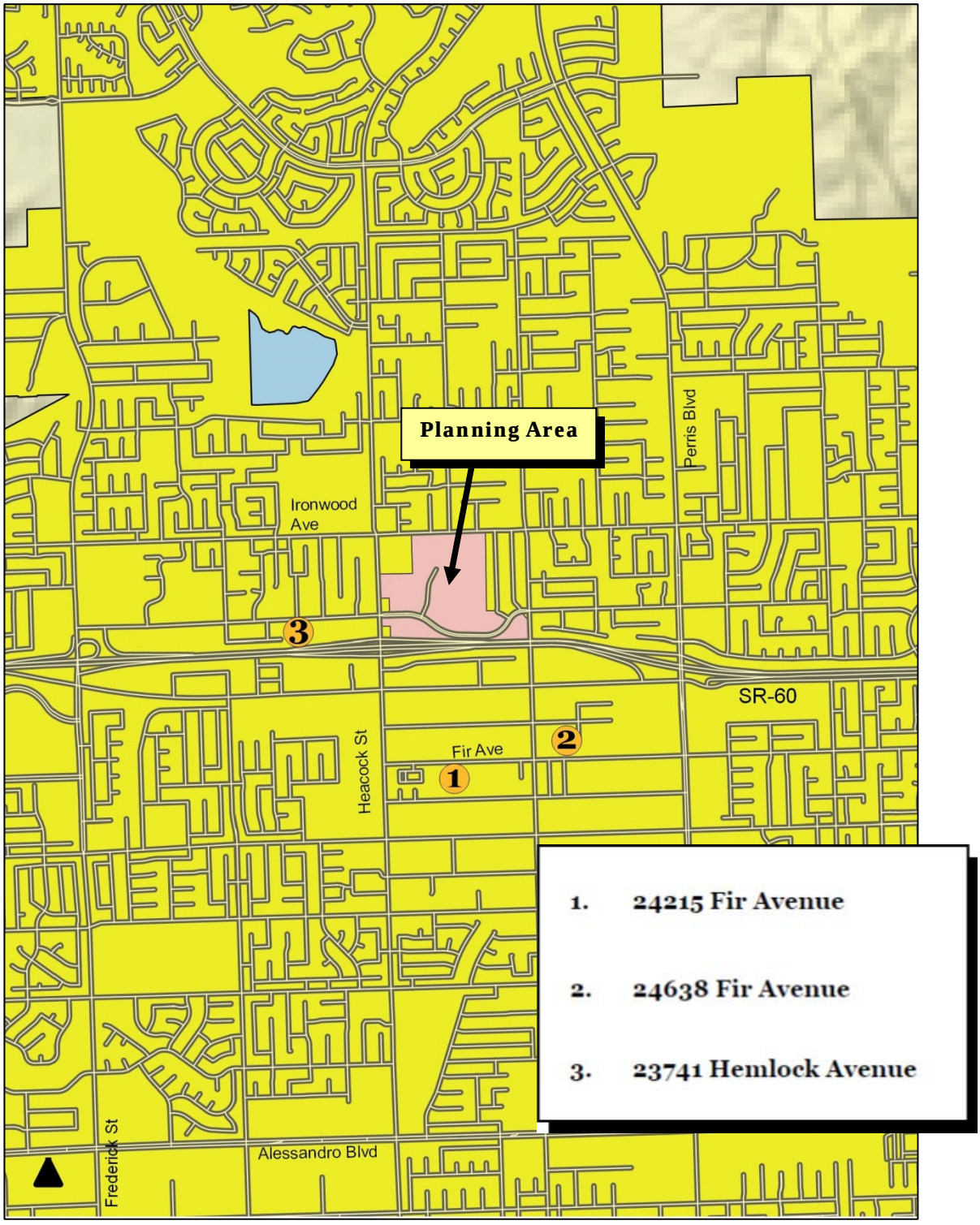


EXHIBIT 3-6
LOCALLY DESIGNATED HISTORICAL RESOURCES
Source: Moreno Valley General Plan

None of the buildings that are located within the Planning Area are on the list of historic resources compiled by the United States Department of the Interior, National Park Service.[56]

In addition, none of the buildings that occupy the Planning Area are present on the list of historic resources identified by the State Office of Historic Preservation (SHPO).[57] According to the City's General Plan, the Old Moreno Schoolhouse was designated a city landmark in 1988. This City landmark is located approximately five miles to the southeast of the Planning Area. The implementation of the Specific Plan and the subsequent development that will result will not affect the aforementioned historical resource. As a result, no impacts will occur.

B. *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the State CEQA Guidelines? ● Less than Significant Impact with Mitigation.*

Ancestors of the Luiseno and Cahuilla Indian tribes were the first inhabitants of Moreno Valley. The Late Prehistoric Luiseño and Cahuilla peoples who occupied the region were generally believed to be semi-sedentary, meaning that they wintered in villages, then spread out in family groups during the spring and summer months to harvest seeds and acorns. Thus, smaller occupational locations tend to be associated with areas where plentiful milling stations are found. Milling stations are indicated by the presence of bedrock mortars and slicks. Rock art is also found within several complexes. This consists of "pictographs" or painted images and "petroglyphs" or rock engravings.

AB-52 consultation was completed and formal requests for consultation were sent to seven tribal bands identified by the Native American Heritage Commission. Responses have been received by the City from five tribes. The Pechanga Tribal Band requested a conference call, and mitigation measures were discussed. The Pechanga Tribal Band and Soboba Tribal Band have concurred with the mitigation measures, and the mitigation measures have been forwarded to all of the tribal bands that provided a response. Therefore, the following mitigation is required:

- Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The project archaeologist must have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. The project archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, must develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB-52 to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB-52 tribal consultation process for the project, has not opted out of the AB-52 consultation process, and has completed AB-52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

[56] National Park Service. *National Register of Historic Places.* Website http://npgallery.nps.gov/nrhp/SearchResults/. Website accessed August 21, 2017.

[57] California Department of Parks and Recreation. *California Historical Resources.* Website http:// ohp.parks.ca.gov/ ListedResources. Website accessed in June 13, 2017.

- Project grading and development scheduling;

- The project archeologist and the Consulting Tribes(s) as defined in this mitigation must attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training will include a brief review of the cultural sensitivity of the project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial training must take the Cultural Sensitivity Training prior to beginning work and the project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

- The protocols and stipulations that the contractor, City, Consulting Tribe(s) and project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

- Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians, the Soboba Band of Luiseño Indians, and the Morongo Band of Mission Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the project archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the project archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

- In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

  - One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

    i. Preservation-in-place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to the initial mitigation. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in the first mitigation identified in Section 3.5.2.B.

- The City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the project archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal Representatives to the site to assess the significance of the find."

- If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61), Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in previously identified mitigation before any further work commences in the affected area.

- If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within five-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

Adherence to the aforementioned mitigation will reduce potential impacts to levels that are less than significant.

C. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? ● Less than Significant Impact with Mitigation.

The Moreno Valley area contains sedimentary rock-units with potential to contain significant nonrenewable paleontological (fossil) resources. These sedimentary units are referred to as the Mt. Eden Formation and the San Timoteo Formation. The Mt. Eden Formation is described as being primarily

reddish sandstone and dark green and brown clay with local reddish agglomerate and conglomerate. The age of the fossils contained in the Formation and the dark reddish brown coloration distinguish the Mt. Eden Formation from the younger, green to gray, tan, and red weathering of the San Timoteo Formation. Fossilized fauna include cricetine rodent, horse, and proboscidean (extinct animals related to elephants). The San Timoteo Formation sediments consist of claytons, siltstones, shales, sandstones, gravels, and fanglomerates. Paleontological sites are abundant within the San Timoteo Formation, with vertebrate faunas (animals) and floras (plants) reported. These sites contain a variety of fossilized fauna including horse, peccary, antelope, camel, deer, mastodon, sloth, tortoise, sabertooth cat, bear, and rabbit. The Mt. Eden Formation and the San Timoteo Formation are known to be highly fossiliferous, and have produced abundant and diverse floral and faunal remains ranging in age from as old as 5 million years to 1.3 million years or less.[58] As a result, the following mitigation is required:

- If previously unidentified paleontological resources are unearthed during construction, work shall cease within 50 feet of the find and the project Applicant must retain a qualified paleontologist, approved by the City, to assess the significance of the find. If a find is determined to be significant, the Lead Agency and the paleontologist will determine appropriate avoidance measures or other appropriate mitigation. All significant fossil materials recovered will be, as necessary and at the discretion of the qualified paleontologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.

Adherence to the above-mentioned mitigation will reduce potential impacts to levels that are less than significant.

D. Would the project disturb any human remains, including those interred outside of dedicated cemeteries? ● Less than Significant Impact.

There are no cemeteries located near the Planning Area. The nearest cemetery to the Planning Area is Riverside National Cemetery, located more than four miles to the southwest.[59] In the unlikely event that a human burial is encountered, all construction activities shall be halted and Moreno Valley Police Department will be contacted (the department will then contact the County Coroner). In the event of an accidental discovery, Title 14; Chapter 3; Article 5; Section 15064.5 of CEQA will apply in terms of the identification of significant archaeological resources and their salvage. As a result, the potential impacts are considered to be less than significant.

3.5.3 MITIGATION MEASURES

The following mitigation will be effective in minimizing potential impacts to possible cultural resources:

Mitigation Measure No. 8 (Cultural Resources Impacts). Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The project archaeologist must have the authority to temporarily redirect

[58] P and D Consultants. *Final Environmental Impact Report - City of Moreno Valley General Plan SCH# 200091075*. Report dated July 2006.

[59] Google Earth. Site accessed August 21, 2017.

earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. The project archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, must develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB-52 to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB-52 tribal consultation process for the project, has not opted out of the AB-52 consultation process, and has completed AB-52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

- Project grading and development scheduling;

- The project archeologist and the Consulting Tribes(s) as defined in this mitigation must attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training will include a brief review of the cultural sensitivity of the project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial training must take the Cultural Sensitivity Training prior to beginning work and the project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

- The protocols and stipulations that the contractor, City, Consulting Tribe(s) and project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

Mitigation Measure No. 9 (Cultural Resources Impacts). Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians, the Soboba Band of Luiseño Indians, and the Morongo Band of Mission Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the project archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the project archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

Mitigation Measure No. 10 (Cultural Resources Impacts). In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

- One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

  i. Preservation-in-place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

  ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to the initial mitigation. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in the first mitigation identified in Section 3.5.2.B.

- The City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the project archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal Representatives to the site to assess the significance of the find."

Mitigation Measure No. 11 (Cultural Resources Impacts). If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61), Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in previously identified mitigation before any further work commences in the affected area.

Mitigation Measure No. 12 (Cultural Resources Impacts). If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within five-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations

concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

Mitigation Measure No. 13 (Cultural Resources Impacts). If previously unidentified paleontological resources are unearthed during construction, work shall cease within 50 feet of the find and the project Applicant must retain a qualified paleontologist, approved by the City, to assess the significance of the find. If a find is determined to be significant, the Lead Agency and the paleontologist will determine appropriate avoidance measures or other appropriate mitigation. All significant fossil materials recovered will be, as necessary and at the discretion of the qualified paleontologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.

3.6 GEOLOGY & SOILS IMPACTS

3.6.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse impact on the environment if it results in the following:

- The exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault (as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault), ground shaking, liquefaction, or landslides;

- Substantial soil erosion resulting in the loss of topsoil;

- The exposure of people or structures to potential substantial adverse effects, including location on a geologic unit or a soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

- Locating a project on an expansive soil, as defined in the California Building Code, creating substantial risks to life or property; or,

- Locating a project in, or exposing people to potential impacts, including soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

3.6.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault (as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault), ground–shaking, liquefaction, or landslides? ● Less than Significant Impact.

The City of Moreno Valley is located in a seismically active region. Earthquakes from several active and potentially active faults in the Southern California region could affect the Planning Area. In 1972, the Alquist-Priolo Earthquake Zoning Act was passed in response to the damage sustained in the 1971 San Fernando Earthquake.[60] The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults.[61] The City of Moreno Valley is located within an Alquist-Priolo Special Studies Zone.[62] The nearest Alquist-Priolo fault is the Claremont Fault located five miles to the east.[63] This fault trace is part of the larger San Jacinto Fault Zone.[64] This fault trace is shown in Exhibit 3-7. The potential impacts in regards to ground shaking and fault rupture are less than significant since the risk is no greater in and around the Planning Area than for the rest of the City. In addition, conformance with the most recent 2016 Building Code standards will ensure all future development can properly withstand ground shaking and fault rupture.

As illustrated in Figure 4-1.1 of the Moreno Valley Hazard Mitigation, the Planning Area is not susceptible to liquefaction.[65] According to the United States Geological Survey, liquefaction is the process by which water-saturated sediment temporarily loses strength and acts as a fluid. Essentially, liquefaction is the process by which the ground soil loses strength due to an increase in water pressure following seismic activity. Lastly, the Planning Area is not at risk for landslides and is at no greater risk for ground shaking and fault rupture than the rest of the City. Therefore, the impacts are expected to be less than significant.

B. Would the project expose people or structures to potential substantial adverse effects, including substantial soil erosion or the loss of topsoil? ● Less than Significant Impact.

A review of the United States Department of Agriculture Web Soil Survey was conducted to determine the type of soils that underlie the Planning Area. According to the results of the Web Soil Survey, the Planning Area contains the following soils associations: Greenfield Sandy Loam; Hanford Coarse Sandy Loam; Monserate Sandy Loam; Ramona Sandy Loam; and Tujunga Loamy Sand. The varying soils within the planning area are shown in Exhibit 3-8.

---

[60] California Department of Conservation. *What is the Alquist-Priolo Act* http://www.conservation.ca.gov /cgs/rghm/ap/ Pages/main.aspx

[61] Ibid.

[62] California Department of Conservation. Table 4, Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010.

[63] GIS data provided by the California Department of Conservation

[64] Ibid.

[65] City of Moreno Valley. *Local Hazard Mitigation Plan*. Document updated December 2016.

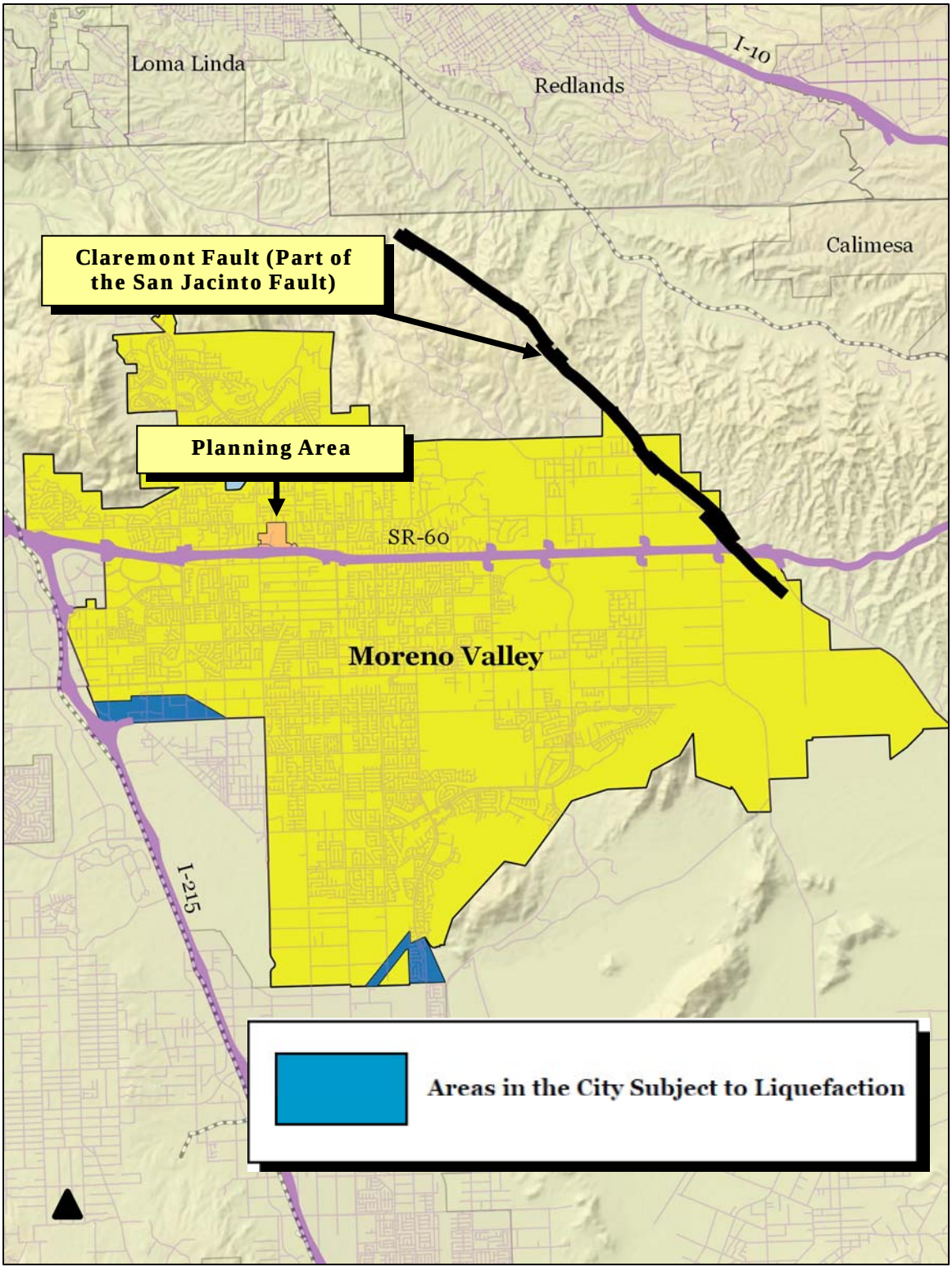


EXHIBIT 3-7
SEISMIC HAZARDS IN THE CITY
Source: California Department of Conservation

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GyA	Greenfield sandy loam, 0 to 2 percent slopes	7.3	10.0%
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	10.2	13.9%
GyD2	Greenfield sandy loam, 8 to 15 percent slopes, eroded	10.8	14.8%
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	22.5	30.8%
MmB	Monserate sandy loam, 0 to 5 percent slopes	2.9	3.9%
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded	17.6	24.1%
RaB3	Ramona sandy loam, 0 to 5 percent slopes, severely erod ed	1.8	2.5%
Totals for Area of Interest		**73.1**	**100.0%**

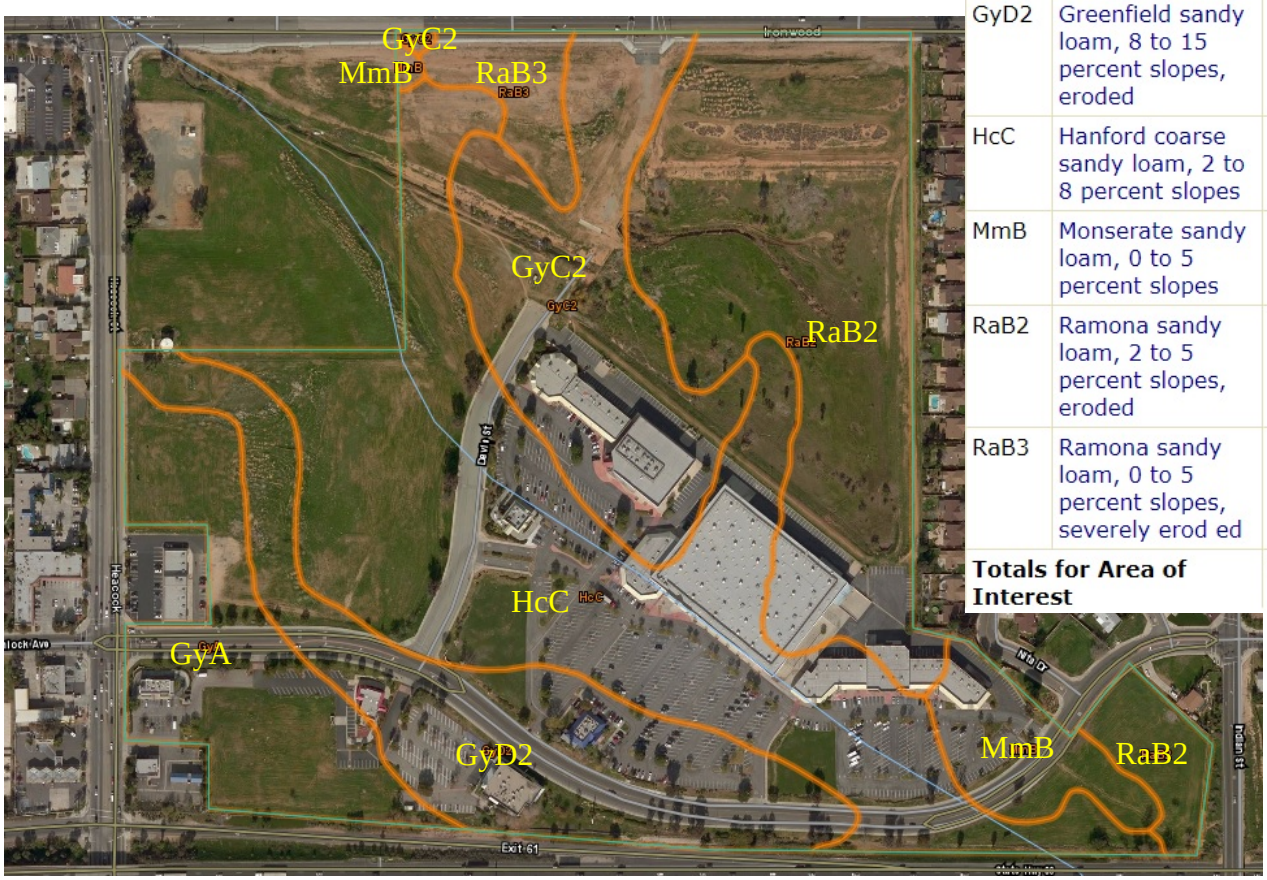


EXHIBIT 3-8
SOILS WITHIN THE PLANNING AREA
Source: Web Soil Survey

All of the aforementioned soils possess some level of an erosion risk, ranging from slight to moderate. However, construction activities and the placement of "permanent vegetative cover" will reduce the soil's erosion risk.[66] Deep rooting plants will secure loose topsoil as will the pavement of barren earth. In addition, prior to the approval of all project-specific development proposals, detailed geotechnical investigation, and analysis will be prepared and submitted to the City for review. The results of those studies will be incorporated into the detailed plans for each project. As a result, the potential impacts are considered to be less than significant.

C. *Would the project expose people or structures to potential substantial adverse effects, including location on a geologic unit or a soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? ● Less than Significant Impact.*

The only soils identified within the Planning Area that are prone to shrinking and swelling are the Monserate soils.[67] Soils that are prone to shrinking and swelling become sticky when wet and expand according to the moisture content present at the time. Monserate soils are located in two specific areas within the Planning Area. These soils become sticky when wet and expand according to the moisture content present at the time. An influx of groundwater may be absorbed by the soils and could lead to lateral spreading, though the impacts are considered to be less than significant since the building will be constructed with the strict adherence to the most pertinent State and City building codes.

As indicated above, there are two areas located within the Planning Area that contain soils that are prone to shrinking and swelling. These two areas are also prone to subsidence. Subsidence occurs via soil shrinkage and is triggered by a significant reduction in an underlying groundwater table, thus causing the earth on top to sink.[68] Prior to the approval of all project-specific development proposals, detailed geotechnical investigation and analysis will be prepared and submitted to the City for review.

Grading and other construction activities are not expected to reach the depths required to encounter an underlying groundwater aquifer. In addition, any future development undertaken within the Planning Area will be required to be connected to the City's water lines; therefore, future development will not directly affect underlying groundwater resources. As a result, the potential impacts are anticipated to be less than significant.

D. *Would the project result in or expose people to potential impacts, including location on expansive soil, as defined in Uniform Building Code (2010), creating substantial risks to life or property? ● Less than Significant Impact.*

The only soils identified within the Planning Area that are prone to shrinking and swelling are the Monserate soils.[69] Shrinking and swelling is influenced by the amount of clay present in the underlying

[66] United States Department of Agriculture. *Soil Survey, West Riverside Area, California*. Report dated November 1971.

[67] States Department of Agriculture. *Soil Survey, West Riverside Area, California*. Report dated November 1971.

[68] Subsidence Support. *What Causes House Subsidence?* http://www.subsidencesupport.co.uk/what-causes-subsidence.htm

[69] United States Department of Agriculture. *Soil Survey, West Riverside Area, California*. Report dated November 1971.

soils.[70] According to the United States Department of Agriculture, clay is present in the composition of Monserate soils.[71] Prior to the approval of all project-specific development proposals, detailed geotechnical investigation, and analysis will be prepared and submitted to the City for review. As a result, the potential impacts are considered to be less than significant.

E. Would the project result in or expose people to potential impacts, including soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? ● No Impact.

No septic tanks will be used as part of any future development. As a result, no impacts associated with the use of septic tanks will occur as part of the proposed project's implementation.

3.6.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. As a result, no additional mitigation beyond that which may be required for individual development projects is required.

3.7 GREENHOUSE GAS EMISSIONS IMPACTS

3.7.1 THRESHOLDS OF SIGNIFICANCE

A project may be deemed to have a significant adverse impact on greenhouse gas emissions if it results in any of the following:

- The generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and,

- The potential for conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases.

3.7.2 ENVIRONMENTAL ANALYSIS

A. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ● Less than Significant Impact.

The State of California requires CEQA documents to include an evaluation of greenhouse gas (GHG) emissions or gases that trap heat in the atmosphere. GHG are emitted by both natural processes and human activities. Examples of GHG that are produced both by natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The accumulation of GHG in the

[70] Natural Resources Conservation Service Arizona. *Soil Properties Shrink/Swell Potential.* http://www.nrcs.usda.gov/wps/portal/nrcs /detailfull/az/soils/?cid=nrcs144p2_065083

[71] United States Department of Agriculture Soil Conservation Service. *Report and General Soil Map Riverside County, California.* Revised 1969.

atmosphere regulates the earth's temperature. Without these natural GHG, the Earth's surface would be about 61°F cooler. However, emissions from fossil fuel combustion have elevated the concentrations of GHG in the atmosphere to above natural levels.

The SCAQMD has established a threshold of significance of 10,000 metric tons of CO_2E ($MTCO_2E$) per year for new development. Table 3-3 summarizes annual greenhouse gas emissions from build-out of the proposed project. As indicated in Table 3-3, the CO_2E total for the project is 29,636 pounds per day or 13 $MTCO_2E$ per day. This translates into a generation of approximately 4,745 $MTCO_2E$ per year, which is below the single established threshold of 10,000 $MTCO_2E$ for new development. The project's operational GHG emissions were calculated using the CalEEMod V.2016.3.2. The GHG emissions estimates reflect what the land uses that have been identified previously of the same location and description would generate once fully operational. The type of activities that may be undertaken once the project is operational have been predicted and accounted for in the model for the selected land use type.

Table 3-3
Greenhouse Gas Emissions Inventory

Source	GHG Emissions (Lbs/Day)			
	CO_2	CH_4	N_2O	CO_2E
Area	0.14	--	--	0.15
Energy	625.06	0.01	0.01	628.78
Mobile	28,964.17	1.74	--	29,007.90
Long-Term - Total	**29,589.38**	**1.76**	**0.01**	**29,636.84**

Source: CalEEMod.V.2016.3.2

Once operational, the development contemplated under the Specific Plan amendment is projected to fall below the 10,000 MTCO2E per year threshold established for GHG emissions by the SCAQMD. The project's true emissions may be lower if future development that is proposed is smaller than the maximum case build-out. The Moreno Valley Festival Specific will promote in-fill development that will reduce overall VMT. In addition, mitigation measures are provided in the following subsection which will further reduce GHG emissions. Therefore, the potential impacts in regards to GHG emissions are considered to be less than significant.

B. Would the project conflict an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases? ● Less than Significant Impact with Mitigation.

AB 32 requires the reduction of GHG emissions to 1990 levels, which would require a minimum 28 percent reduction in "business as usual" GHG emissions for the entire State. Additionally, Governor Edmund G. Brown signed into law Executive Order (E.O.) B-30-15 on April 29, 2015, the Country's most ambitious policy for reducing Greenhouse Gas Emissions. Executive Order B-30-15 calls for a 40 percent reduction in greenhouse gas emissions below 1990 levels by 2030.[72]

[72] Office of Governor Edmund G. Brown Jr. *New California Goal Aims to Reduce Emissions 40 Percent Below 1990 Levels by 2030.* http://gov.ca.gov/news.php?id=18938

On October 9, 2012, the Moreno Valley City Council approved the Energy Efficiency and Climate Action Strategy and the related Greenhouse Gas Analysis. The Strategy and Analysis documents and identifies potential programs and policies to reduce overall City energy consumption and increase the use of renewable energy. The Strategy also prioritizes implementation of programs, policies, and projects based upon energy efficiency, cost efficiency, and potential resources. The Greenhouse Gas Analysis provides a more scientific approach and recommends a target to reducing community-wide GHG emissions consistent with the State reduction goals in Assembly Bill (AB) 32, the legislation that provides the basis of the State's climate action initiatives. The Energy Efficiency and Climate Action Strategy contain 124 different strategies that would reduce the City's carbon footprint. In addition, the General Plan includes the following:

- *Chapter 5, Transportation Demand Management 5.3.5.* Transportation Demand Management (TDM) strategies reduce dependence on the single occupant vehicle, and increase the ability of the existing transportation system to carry more people. The goal of TDM is to reduce single occupant vehicle trips during peak hours and modify the vehicular demand for travel. A reduction in peak hour trips and a decrease in non-attainment pollutants can be achieved through the implementation of TDM strategies. Examples of the strategies include: carpooling, telecommuting, flexible work hours, and electronic commerce that enables people to work and shop from home.

- *Policy 6.7.6.* Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.

- *Policy 7-3.* Maintain a close working relationship with EMWD to ensure that EMWD plans for and is aware of opportunities to use reclaimed water in the City.

- *Policy 7.3.1.* Require water conserving landscape and irrigation systems through development review. Minimize the use of lawn within private developments, and within parkway areas. The use of mulch and native and drought tolerant landscaping shall be encouraged.

- *Policy 7.3.2.* Encourage the use of reclaimed wastewater, stored rainwater, or other legally acceptable non-potable water supply for irrigation.

- *Policy 7-4.* Provide guidelines for preferred planting schemes and specific species to encourage aesthetically pleasing landscape statements that minimize water use.

- *Policy 7.5.1.* Encourage building, site design, and landscaping techniques that provide passive heating and cooling to reduce energy demand.

- *Policy 7.5.2.* Encourage energy efficient modes of transportation and fixed facilities, including transit, bicycle, equestrian, and pedestrian transportation. Emphasize fuel efficiency in the acquisition and use of City-owned vehicles.

- *Policy 7.5.3.* Locate areas planned for commercial, industrial, and multiple family density residential development within areas of high transit potential and access.

- *Policy 7.5.4*. Encourage efficient energy usage in all city public buildings.

- *Policy 7.5.5*. Encourage the use of solar power and other renewable energy systems.

- *Chapter 7 Issues and Opportunities 7.6.2*. The amount of energy consumed in automobile travel can be reduced if commercial and recreational opportunities are located near residential uses. Commuter travel can be minimized if there is a reasonable balance between jobs and housing within the area. Placing high intensity uses along transit corridors can also reduce automobile travel. Reducing residential street width can affect microclimates and reduce the summer cooling needs of adjacent homes. The orientation of buildings can be arranged to affect the amount of heat gain. Shade trees can also cool microclimates and aid in energy conservation. Building construction options are available to reduce energy consumption. Building construction methods include, but are not limited to, insulation of walls and ceilings, insulated windows and solar water heating systems. Many building energy conservation measures have been incorporated into Title 24 of the California Administrative Code and are required of all residential structures.

- *Policy 7.8.1*. Encourage recycling projects by individuals, non-profit organizations, corporations and local businesses, as well as programs sponsored through government agencies.

According to the Specific Plan, construction of the Moreno Valley Festival will be in conformance with California's "Cal-Green" building regulations, the most stringent, environmentally-friendly building code in the United States. Cal-Green is a comprehensive, far-reaching set of regulations which mandate environmentally-advanced building practices and regulations designed to conserve natural resources and reduce greenhouse gas emissions, energy consumption, and water use. The project will incorporate sustainable design features to further reduce its environmental footprint, including but not limited to:

- Reduced water use for landscape irrigation;
- Accommodate the use of alternative means of transportation;
- Use recycled building materials to the extent feasible;
- Use local sources of building materials to the extent feasible; and,
- Minimize the use of impervious paved surfaces throughout the project.[73]

In order to further ensure the project's conformance with the General Plan and the Energy Efficiency and Climate Action Strategy, the following mitigation measures are required:

- The Applicant must install ENERGY STAR appliances wherever appliances are installed.

- The Applicant shall install ENERGY STAR rated light emitting diodes (LEDs) for traffic, street, and outdoor lighting.

- The Applicant must install ENERGY STAR rated Compact Florescent Lights (CFLs) in all indoor areas that require continuous lighting. CFLs should not be used in rooms or areas that are subject to frequent on/off cycling, as the lifespan of CFLs diminishes when there are frequently turned off.

[73] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

- The Applicant must install sky-lights as part of the shopping center's revitalization.
- The Applicant must install light colored "cool" roofs.
- The Applicant must install "cool" (lighter colored) pavement throughout the parking areas.
- All landscape planted on-site must be watered by water dispensed through drip irrigation.
- The building contractors shall install bicycle racks consistent with the City's Municipal Code adjacent to each building.
- The building contractors shall install electric vehicle charging stations in the parking areas. Preferential parking spaces for electric vehicles must be provided.

These mitigation measures shall be required for individual projects proposed within the Planning Area. As a result, the potential impacts are considered to be less than significant.

3.7.3 MITIGATION MEASURES

The following mitigation is required to further reduce future projects greenhouse gas emissions impacts:

Mitigation Measure No. 14 (Greenhouse Gases Emissions Impacts). The Applicant must install ENERGY STAR appliances wherever appliances are installed.

Mitigation Measure No. 15 (Greenhouse Gases Emissions Impacts). The Applicant shall install ENERGY STAR rated light emitting diodes (LEDs) for traffic, street, and outdoor lighting.

Mitigation Measure No. 16 (Greenhouse Gases Emissions Impacts). The Applicant must install ENERGY STAR rated Compact Florescent Lights (CFLs) in all indoor areas that require continuous lighting. CFLs should not be used in rooms or areas that are subject to frequent on/off cycling, as the lifespan of CFLs diminishes when there are frequently turned off.

Mitigation Measure No. 17 (Greenhouse Gases Emissions Impacts). The Applicant must install sky-lights as part of the shopping center's revitalization.

Mitigation Measure No. 18 (Greenhouse Gases Emissions Impacts). The Applicant must install light colored "cool" roofs.

Mitigation Measure No. 19 (Greenhouse Gases Emissions Impacts). The Applicant must install "cool" pavement (lighter colored) throughout the parking areas.

Mitigation Measure No. 20 (Greenhouse Gases Emissions Impacts). All landscape planted on-site must be watered by water dispensed through drip irrigation.

Mitigation Measure No. 21 (Greenhouse Gases Emissions Impacts). The building contractors shall install bicycle racks consistent with the City's Municipal Code adjacent to each building.

Mitigation Measure No. 22 (Greenhouse Gases Emissions Impacts). The building contractors shall install electric vehicle charging stations in the parking areas. Preferential parking spaces for electric vehicles must be provided.

3.8 HAZARDS & HAZARDOUS MATERIALS IMPACTS

3.8.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse impact on risk of upset and human health if it results in any of the following:

- The creation of a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;
- The creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- The generation of hazardous emissions or the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- Locating the project on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 resulting in a significant hazard to the public or the environment;
- Locating the project within an area governed by an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or a public use airport;
- Locating the project in the vicinity of a private airstrip that would result in a safety hazard for people residing or working in the Planning Area;
- The impairment of the implementation of, or physical interference with, an adopted emergency response plan or emergency evacuation plan; or,
- The exposure of people or structures to a significant risk of loss, injury or death involving wild land fire, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.

3.8.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? ● Less than Significant Impact.

None of the buildings that are located within the Planning Area are listed on the California Department of Toxic Substances Control's Hazardous Waste and Substances Site database.[74] Furthermore, none of the properties located within the Planning Area are identified on the California Department of Toxic Substances Control's EnviroStor database.[75] In addition, the Planning Area is not identified on any Leaking Underground Storage Tank database (LUST).

The United States Environmental Protection Agency's multi-system search was consulted to determine whether the Planning Area is identified on any Federal Brownfield list; Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List; Federal Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) Facilities List; and/or Federal RCRA Generators List. There is one use located within the Planning Area that is identified in the database. This use is located at 24318 Hemlock Avenue Suite G3 and is identified as M and M Cleaners, a former dry cleaning service.[76] M and M Cleaners is listed as a small quantity generator which is typical for dry cleaning services. These uses are required to report to the EPA due to their use, storage, and disposal of hazardous materials such as the solvents used to clean clothing.

As individual development projects are proposed, future Applicants must obtain and submit a Phase I/II report to City staff for review. The Planning Area's re-development may first require remediation to prepare affected areas for development. Any contamination encountered during the demolition, grading, and/or site preparation activities must also be removed and disposed of in accordance with applicable laws before the City issues any building permit. The mandatory clean up of potential contamination is considered beneficial since removal of contaminated soils and or the control of possible vapor release is required prior to the start of construction activities. As a result, the potential impacts related to the project's construction are considered to be less than significant.

Once operational, the use of hazardous materials for the new development promoted by the Specific Plan Amendment will largely consist of those commonly found in a commercial setting used in routine maintenance and cleaning. All future tenants will need to comply with all Federal and State regulations regarding hazardous materials. Therefore, the potential construction and operational impacts are considered to be less than significant.

[74] CalEPA. *Cortese List Data Resources.* http://www.calepa.ca.gov/sitecleanup/corteselist/

[75] CalEPA. *EnviroStor Database.* http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=south%20gate&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true

[76] United States Environmental Protection Agency. *Environfacts Search Results.* https://oaspub.epa.gov/enviro/multisys2_v2.get_list?facility_uin=110006482573

B. Would the project create a significant hazard to the public or the environment, or result in reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? ● Less than Significant Impact.

The proposed Specific Plan Amendment will permit a variety of retail, retail/mix of uses, and mix of uses. Many of these uses, including the business park, are still speculative. In the event that a future tenant is involved in the transport, use, storage, and disposal of hazardous materials, the tenant will be required to comply with Federal and State regulations regarding hazardous materials. The tenant would also be required to comply with the EPA's Hazardous Materials Transportation Act, Title 42, Section 11022 of the United States Code and Chapter 6.95 of the California Health and Safety Code which requires the reporting of hazardous materials when used or stored in certain quantities. Furthermore, the future tenant will be required to file a Hazardous Materials Disclosure Plan and a Business Emergency Plan to ensure the safety of the employees and citizens of Moreno Valley. Any contamination encountered during the demolition, grading, and/or site preparation activities must also be removed and disposed of in accordance with applicable laws before the City issues any building permit. As a result, the potential impacts are anticipated to be less than significant.

C. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? ● Less than Significant Impact.

The Planning Area is not located within a quarter mile of an existing school. The nearest school is Honey Hollow Elementary School, which is located 0.72 miles to the northwest of the Planning Area.[77] The proposed Specific Plan Amendment will permit a variety of retail, retail/mix of uses, and mix of uses. Many of these uses, including the business park, are still speculative. In the event that a future tenant is involved in the transport, use, storage, and disposal of hazardous materials, the tenant will be required to comply with Federal and State regulations regarding hazardous materials. The tenant would also be required to comply with the EPA's Hazardous Materials Transportation Act, Title 42, Section 11022 of the United States Code and Chapter 6.95 of the California Health and Safety Code which requires the reporting of hazardous materials when used or stored in certain quantities. Furthermore, future tenants will be required to file a Hazardous Materials Disclosure Plan and a Business Emergency Plan to ensure the safety of the employees and citizens of Moreno Valley. As a result, no impacts from the operation of the future uses are anticipated.

The future development anticipated under the Specific Plan will involve the grading of the area and the removal of the existing development and improvements. During these activities, stained asphalt, concrete, and contaminated soil may be encountered. The handling, removal, and disposal of the aforementioned items are governed by State and Federal regulations. Therefore, adherence to all pertinent regulations governing the handling of hazardous materials will reduce potential impacts to levels that are less than significant.

[77] Google Earth. Website accessed August 23, 2017.

D. Would the project be located on a site, which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5, and, as a result, would it create a significant hazard to the public or the environment? ● No Impact.

The *Cortese List*, also referred to as the Hazardous Waste and Substances Sites List or the California Superfund List, is a planning document used by the State and other local agencies to comply with CEQA requirements that require the provision of information regarding the location of hazardous materials release sites. California Government Code section 65962.5 requires the California Environmental Protection Agency to develop and update the Cortese List on an annual basis. The list is maintained as part of the DTSC's Brownfields and Environmental Restoration Program referred to as EnviroStor. The database currently contains 575 sites, including the Federal Superfund sites. The database was consulted in August of 2017. A search of the Envirostor Hazardous Waste and Substances Site List website was completed to identify whether the Planning Area is listed in the database as a Cortese site.[78] The Planning Area is not included on a hazardous sites list compiled pursuant to California Government Code Section 65962.5.[79] As a result, no impacts will result.

E. Would the project be located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the Planning Area? ● No Impact.

The Planning Area is not located within two miles of an operational public airport. The March Air Reserve Base is the closest airport to the Planning Area. This airport is located 2.90 miles southwest of the Planning Area. In addition, the Riverside Municipal Airport is located in the City of Riverside approximately 12 miles to the west of the Planning Area. The Planning Area is not located within the Runway Protection Zone (RPZ) for the March Air Reserve Base, and the development envisioned under the Specific Plan will not penetrate the airport's slope. Essentially, the adoption and implementation of the Specific Plan will not introduce a building that will interfere with the approach and take off of airplanes utilizing the aforementioned airport.

According to the Land Use Compatibility Plan that was prepared for the March Air Reserve Base, the planning area is not located within the RPZ or FAR Part 77 height restriction zone and no impacts will occur.[80]

[78] California, State of. California Department of Toxic Substances Control Envirostor Hazardous Waste and Substances Site List. http://www.envirostor.dtsc.ca.gov/public/search.asp (Website accessed August 22, 2017).

[79] California, State of, Department of Toxic Substances Control, *DTSC's Hazardous Waste and Substances Site List - Site Cleanup (Cortese List),* 2009.

[80] Riverside County Airport Land Use Commission. *Riverside Municipal Airport Land Use Compatibility Plan*. Adopted March 2005.

F. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the Planning Area? ● No Impact.

The Planning Area is not located within two miles of a *private* airstrip.[81] The nearest private airstrip is the helipad located at the Riverside County Regional Medical Center three miles southeast of the Planning Area. As a result, the development envisioned under the Specific Plan will not present a safety hazard related to aircraft and/or airport operations at a private use airstrip.

G. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? ● No Impact.

Future development proposals will be reviewed by the City to identify specific provisions for the regulation of construction vehicle ingress and egress to the site during construction as a means to provide continued through-access. As a result, no impacts are associated with the proposed project's implementation.

H. Would the project expose people or structures to a significant risk of loss, injury, or death involving wild lands fire, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands? ● No Impact.

The City of Moreno Valley is subject to both wild lands and urban fires. The natural vegetation in the area is highly prone to fire. The vegetation and geographical landscape consists of rolling hills covered in annual grasses with sage brush with no tree top canopy. The vegetation typically comes on an annual basis from annual rains which occur between the months of January and March.[82]

Within the City of Moreno Valley, wildfire poses a threat to the northern and eastern portions of the city, as those areas are within the high fire hazard area. Also, the southeast area contains the largest potential for state land threat, Lake Perris, which is a California State Park that falls under the direct protection of the City of Moreno Valley for structure and wildland protection. Other areas of concern include Box Springs (northwest area), San Timoteo Canyon (north), and Reche Canyon (northeast area). The Planning Area is located outside of a wild lands fire risk zone. Therefore, no impacts will result.

3.8.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any potentially significant impacts in regards to hazards or hazardous materials. Any future industrial tenant will be required to adhere to all pertinent Federal and State regulations governing the handling and use of hazardous materials. As a result, no additional mitigation beyond that which may be required for individual development projects is required.

[81] Google Earth. Website accessed August 13, 2017.

[82] City of Moreno Valley. *Local Hazard Mitigation Plan*. Document updated December 2016.

3.9 HYDROLOGY & WATER QUALITY IMPACTS

3.9.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse environmental impact on water resources or water quality if it results in any of the following:

- A violation of any water quality standards or waste discharge requirements;
- A substantial depletion of groundwater supplies or interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- A substantial alteration of the existing drainage pattern of the site or area through the alteration of the course of a stream or river in a manner that would result in substantial erosion or siltation on or off-site;
- A substantial alteration of the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in flooding on or off-site;
- The creation or contribution of water runoff that would exceed the capacity of existing or planned storm water drainage systems or the generation of substantial additional sources of polluted runoff;
- The substantial degradation of water quality;
- The placement of housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map;
- The placement of structures within 100-year flood hazard areas that would impede or redirect flood flows;
- The exposure of people or structures to a significant risk of flooding as a result of dam or levee failure; or,
- The exposure of a project to inundation by seiche, tsunami, or mudflow.

3.9.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. *Would the project violate any water quality standards or waste discharge requirements?* ● *Less than Significant Impact.*

Most developments are required to implement a Water Quality Management Plan (WQMP) in accordance with the NPDES Permit Board Order R8-2010-0033. The WQMP for the Santa Ana Region of Riverside

County was approved by the Santa Ana Region Water Quality Control Board on October 22, 2012. Projects identified as a 'Priority Development project' are required to prepare a Project-Specific WQMP. The MS4 Permit mandates a Low Impact Development (LID) approach to storm water treatment and management of runoff discharges. The project site should be designed to minimize imperviousness, detain runoff, and infiltrate, reuse or evapotranspirate runoff where feasible. LID Best Management Practices (BMPs) should be used to infiltrate, evapotranspirate, harvest, and use, or treat runoff from impervious surfaces, in accordance with the Design Handbook for Low Impact Development Practices. The project should also ensure that runoff does not create a hydrologic condition of concern. Site design BMPs are intended to create a functional project design that attempts to mimic the natural hydrologic regime. Methods of accomplishing the site design concepts include:

- Maximize the permeable area;
- Incorporate landscape buffer areas between sidewalks and streets;
- Use natural drainage systems;
- Where soil and conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration;
- Construct ponding areas or detention facilities to increase opportunities for infiltration consistent with vector control objectives;
- Sites must be designed to contain and infiltrate roof runoff, or direct roof runoff to vegetative swales or buffer areas, where feasible;
- Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping;
- Increase the use of vegetated drainage swales in lieu of underground piping or imperviously lined swales;
- Parking areas may be paved with a permeable surface, or designed to drain into landscaping prior to discharging to the MS4; and,
- Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.

Source control BMPs are also required to be implemented for each project as part of the Final WQMP. Source control BMPs are those measures which can be taken to eliminate the presence of pollutants through prevention. Such measures can be both non-structural and structural. Non-structural source control BMPs include: education for property owners, operators, tenants, occupants, or employees; activity restrictions; irrigation system and landscape maintenance; common area litter control; street sweeping private streets and parking lots; and drainage facility inspection and maintenance. Structural source control BMPs include: stenciling and signage; landscape and irrigation system design; protection of slopes

and channels; and properly designing fueling areas, trash storage areas, loading docks, and outdoor material storage areas.

The treatment control BMP strategy for the project is to select Low Impact Development (LID) BMPs that promote infiltration and evapo-transpiration, including infiltration basins, bio detention facilities, and extended detention basins. Generally infiltration BMPs have advantages over other types of BMPs, including reduction of the volume and rate of runoff, as well as full treatment of all potential pollutants potentially contained in the storm water runoff. It is recognized however that infiltration may not be feasible on sites with low infiltration rates, or located on compacted engineered fill. Therefore, prior to final design, infiltration tests shall be performed within the boundaries of the proposed infiltration BMP to confirm the suitability of infiltration.

In situations where infiltration BMPs are not appropriate, bio detention and/or bio treatment BMPs (including extended detention basins, bio swales, and constructed wetlands) that provide opportunity for evapotranspiration and incidental infiltration will be considered. Harvest and use BMPs will also be considered as a Treatment Control BMP to store runoff for later non-potable uses. Ponds may be used to collect storm water runoff for harvest and use. A description of the aforementioned treatment control BMPs is provided below:

- *Infiltration Basins*. An infiltration basin is a flat earthen basin designed to capture the design capture volume. The storm water infiltrates through the bottom of the basin into the underlying soil over a 72-hour drawdown period. Flows exceeding the design capture volume must discharge to a downstream conveyance system. Infiltration basins are highly effective in removing all targeted pollutants from storm water runoff. The use of infiltration basins may be restricted by concerns over groundwater contamination, soil permeability, and clogging at the site. Where this BMP is being used, the soil beneath the basin must be thoroughly evaluated in a geotechnical report since the underlying soils are critical to the basin's long term performance. To protect the basin from erosion, the sides and bottom of the basin must be vegetated, preferably with native or low water use plant species.

- *Bio detention Facility*. Bio detention facilities are shallow, vegetated basins underlain by an engineered soil media. In most cases, the bottom of a bio detention facility is unlined, which also provides an opportunity for infiltration to the extent that the underlying onsite soil can accommodate it. When the infiltration rate of the underlying soil is exceeded, fully bio treated flows are discharged via underdrains. Bio detention facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly bio treated) discharge to the storm drain system.

- *Extended Detention Basin*. The extended detention basin is designed to detain the design volume of storm water and maximize opportunities for volume losses through infiltration, evaporation, evapotranspiration, and surface wetting. Additional pollutant removal is provided through sedimentation, in which pollutants can attach to sediment accumulated in the basin through the process of settling. Storm water enters the basin through a forebay where any trash, debris, and sediment accumulate for easy removal. Flows from the forebay enter the top stage of the basin

which is vegetated with native grasses and interspersed with gravel-filled trenches which together enhance evapotranspiration and infiltration. Water that does not get infiltrated or evapotranspired is conveyed to the bottom stage of the basin. At the bottom stage of the basin, low or incidental dry weather flows will be treated through a media filter and collected in a sub drain structure. Any additional flows will be detained in the basin for an extended period by incorporating an outlet structure that is more restrictive than a traditional detention basin outlet. The restrictive outlet extends the drawdown time of the basin which further allows particles and associated pollutants to settle out before exiting the basin, while maximizing opportunities for additional incidental value losses.

Adherence to the site design concepts, source control BMP, and treatment control BMP recommendations outlined above will reduce potential impacts to levels that are less than significant.

B. *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge in such a way that would cause a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of a pre-existing nearby well would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? ● No Impact.*

The majority of the City is situated within the Perris North Groundwater Basin, while the easternmost portion of the City is located within the San Jacinto Groundwater Basin. Groundwater depth ranges from approximately 100 feet to 150 feet below ground surface. The California State Department of Water Resources (DWR) has estimated the groundwater basins in the vicinity of the City to have capacity for approximately one million acre-feet of water. The adoption and subsequent implementation of the Specific Plan will not introduce any development that will affect underlying groundwater supplies. As indicated previously, groundwater depth ranges from 100 to 150 feet below ground surface. Grading and other construction related activities will not extend to depths where groundwater may be encountered. In addition, any new development will be connected to the City's water lines and is not anticipated to deplete groundwater supplies through the direct consumption of the water. The Specific Plan calls for the installation of xeriscape landscaping and water efficient appliances to reduce the burden placed on the City's water resources. Future water consumption will be limited to that used for landscaping, restroom use, and routine maintenance and cleaning. Adherence to the required BMPs identified in the Specific Plan will restrict the discharge of contaminated runoff into the local groundwater aquifers. As a result, no impacts are anticipated.

C. *Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site? ● No Impact.*

The Planning Area contains a 12.9-acre detention basin. This detention basin is located north of Planning Area 4 and south of Planning Area 2. The basin would fall under the jurisdiction of the California Department of Fish and Wildlife, United States Army Corps of Engineers (USACE), and the Regional Water Quality Control Board (RWQCB). The basin contains approximately 11.22 acres of CDFW

jurisdiction and approximately 9.77 acres of waters of the United States.[83] The development of this detention basin will be prohibited. As stated previously, future projects must integrate BMPs identified in the mandatory WQMP plans. These BMPs will allow stormwater runoff to either percolate into the ground or discharge into the local storm drains. Stormwater runoff will not be discharged into the detention basin. Furthermore, stormwater will not discharge off-site and there will be no impacts regarding off-site erosion or siltation due to off-site stormwater discharge.

D. Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner, which would result in flooding on-or off-site? ● No Impact.

There are no natural lakes or streams within the Planning Area. The Planning Area is located in the midst of an urban area and no natural drainage features are found within the Planning Area or the adjacent parcels. The inclusion of the aforementioned BMPs will restrict the discharge of stormwater off-site. Therefore, no flooding impacts due to improperly drained stormwater runoff will occur.

E. Would the project create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? ● Less than Significant Impact.

As indicated previously, future development proposals must include a WQMP. The WQMP shall include measures designed to control pollutants, pollutant loads, and runoff volume to the maximum extent feasible by minimizing impervious surface area and controlling runoff from impervious surfaces through infiltration, evapo-transpiration, bioretention, and/or rainfall harvest and use. The project applicant shall prepare a WQMP plan which implements set LID standards and practices for stormwater pollution mitigation and provides documentation to demonstrate compliance with the municipal NPDES permit on the plans and permit application submitted to the city.

In addition, the proposed project will not create excess runoff that will exceed the capacity of the existing storm water drainage system. All future development will be required to implement operational BMPs identified in the Specific Plan. These operational BMPs will reduce the amount of stormwater runoff discharged into the streets. Implementation of the previously mentioned BMPs will reduce potential impacts to levels that are less than significant.

F. Would the project otherwise substantially degrade water quality? ● No Impact.

The implementation of the BMPs acknowledged throughout this subsection will prevent the degradation of stormwater runoff and the discharge of contaminated runoff into the local storm drains and ground water supplies. As a result, no impacts are anticipated with the proposed project's implementation.

[83] Hernandez Environmental Services. *Basin Constraints Analysis.* Report dated February 22, 2016.

G. Would the project place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? ● No Impact.

According to maps obtained at the Federal Emergency Management System Map Service Center, a majority of the Planning Area is not located within a 100-year flood plain.[84] The entire Planning Area, with the exception of the detention basin, is located within Zone X.[85] This flood zone has an annual probability of flooding of less than 0.2 percent and represents areas outside the 500-year flood plain. Thus, properties located in Zone X are not located within a 100-year flood plain.[86] Although the detention basin is located within Zone A, a high risk area with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage, no impacts will occur since the development of the detention basin will be prohibited. As a result, no impacts related to flood flows are associated with the proposed project's implementation.

H. Would the project place within a 100-year flood hazard area, structures that would impede or redirect flood flows? ● No Impact.

As indicated previously, a majority of the Planning Area is not located within a designated 100-year flood hazard area as defined by FEMA (the site is located within a 500-year flood zone which represents minimal risk).[87] However, the detention basin is currently designated as Zone A. No development will occur within the aforementioned area. As a result, the proposed project will not involve the placement of any structures that would impede or redirect potential floodwater flows since the development of the detention basin will be restricted. Therefore, no flood-related impacts are anticipated to occur with the implementation of the Moreno Valley Festival Specific Plan.

I. Would the project expose people or structures to a significant risk of flooding as a result of dam or levee failure? ● Less than Significant Impact.

According to the General Plan, the potential for dam inundation is considered to be remote. There are two locations of concern situated within the City: the Poorman Reservoir (Pigeon Pass Reservoir) and Lake Perris. Failure of the dam at Poorman Reservoir could result in extensive flooding along the downstream watercourse.[88] Flood waters will be conveyed though an existing channel where they will ultimately flow through the detention basin. The risk of flooding due to dam failure is limited to the period during and immediately after major storms. The reservoir does not retain water throughout the year. Therefore, the likelihood of dam inundation is considered to be less than significant.

---

[84] FEMA. *FEMA's National Flood Hazard Layer (official).* http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbe088e7c8704464aa0fc34eb99e7f30&extent=-117.29161196434968,33.93176642411599,-117.20852785790449,33.95526379253687

[85] Ibid.

[86] FEMA. *Flood Zones, Definition/Description.* http://www.fema.gov/floodplain-management/flood-zones

[87] Federal Emergency Management Agency. *FEMA and ESRI Flood Insurance Rate Mapping.* 2010.

[88] City of Moreno Valley General Plan. *Chapter 6 Safety Element, 6.8 Flood Hazards, 6.8.1 Background.* Plan dated July 11, 2006.

Failure of the dam at Lake Perris would only affect a very small area south of Nandina Avenue along the Perris Valley Storm Drain and the Mystic Lake area in the southeast corner of the City.[89] Although the Planning Area is located within the path of potential flood waters, this water will be conveyed through a system of existing channels and detention basins. As a result, the potential impacts are considered to be less than significant.

J. Would the project result in inundation by seiche, tsunami, or mudflow? ● No Impact.

The Planning Area is located between 42 to 70 miles north of the Pacific Ocean and the Planning Area would not be exposed to the effects of a tsunami.[90] A seiche in the Poorman Reservoir is not likely to happen due to the volume of water present. Lastly, the Planning Area will not be subject to mudslides because the Planning Area and surrounding areas are generally level. As a result, no impacts are likely to occur.

3.9.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. As a result, no additional mitigation beyond that which may be required for individual development projects is required.

3.10 LAND USE & PLANNING IMPACTS

3.10.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant impact on land use and development if it results in any of the following:

- The disruption or division of the physical arrangement of an established community;
- A conflict with an applicable land use plan, policy, or regulation of the agency with jurisdiction over the project; or,
- A conflict with any applicable conservation plan or natural community conservation plan.

3.10.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project physically divide or disrupt an established community or otherwise result in an incompatible land use? ● No Impact.

The Planning Area is located in the midst of an urbanized area and is surrounding on all sides urban development. The land uses and development that surround the Planning Area are outlined below:

[89] City of Moreno Valley General Plan. *Chapter 6 Safety Element, 6.8 Flood Hazards, 6.8.1 Background.* Plan dated July 11, 2006.

[90] Google Earth. Site accessed September 22, 2017.

- *North of the Plan Amendment Area*. Ironwood Avenue extends along the north side of the Planning Area. Single-family residential units are located further north, along the north side of Ironwood Avenue opposite the Planning Area.[91]

- *South of the Plan Amendment Area*. The Moreno Valley Freeway (SR-60) extends along the south side of the Planning Area. Commercial and residential uses are located further south, along the south side of the aforementioned Freeway.[92]

- *East of the Plan Amendment Area*. Single-family residential units extend along the Planning Area's east side. A total of 22 units are located adjacent to the planning area. The units have frontage along Nita Drive. The majority of these existing homes are located adjacent to the storm water detention basin (Planning Area 5). Only five units are located next to Planning Area 2 that will undergo development.[93]

- *West of the Plan Amendment Area*. Heacock Street abuts the Planning Area to the west. Various uses, including a State Farm Insurance office, a Rite Aid, and single-family residential are located further west, along the west side of Heacock Street.[94]

The majority of the Planning Area is undeveloped though approximately 23.4 acres are occupied by the existing Festival Shopping Center buildings. The remainder consists of approximately 29 acres of undeveloped land and an approximate 12.9-acre stormwater detention basin. The existing Moreno Valley Festival Shopping Center occupies the frontage along the north side of Hemlock Avenue in the southern portion of the Planning Area. The open space areas are located in the northern and western portions of the Planning Area. Other smaller areas of open space are located in the southernmost portion of the Planning Area near the SR-60 Freeway.

The development contemplated under the Moreno Valley Festival Specific Plan will not divide or disrupt an established community since all of the development envisioned under the Specific Plan will be contained within the Planning Area. In addition, the adoption and subsequent implementation of the Specific Plan will not result in incompatible land uses. The Specific Plan contains provisions for buffers between industrial warehousing/business park type uses and the adjacent single-family units. These buffers will also provide separation between potential residential units and potential industrial uses. Landscaping (also serving as on-site BMPs), block walls, and adequate setbacks are examples of buffers that will maintain stability between the various existing uses and those that are proposed under the Specific Plan. As a result, no impacts will result.

[91] Blodgett Baylosis Environmental Planning. *Site survey*. Survey was conducted on August 9, 2017.

[92] Ibid.

[93] Ibid.

[94] Ibid.

B. Would the project conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? ● No Impact.

The Planning Area is presently zoned Specific Plan 205 (refer to Exhibit 3-9). The Area's General Plan designation is Commercial (refer to Exhibit 3-10). The types of uses permitted under the Specific Plan are summarized herein in Table 2-4 included in Section 2.

The Moreno Valley Festival Specific Plan has been adopted pursuant to Government Code Section 65450 which grants authority to cities to adopt specific plans for purposes of implementing the goals and policies of their General Plans. The Government Code sets forth the minimum requirements and review procedures for specific plans including the provision of a land use plan, infrastructure and public services plan, criteria and standards for development, and implementation measures.[95]

Additionally, the Specific Plan complies with the City of Moreno Valley's Municipal Code (Chapter 9.13) governing the content of specific plans and procedures for their adoption and enforcement. With the approval of a General Plan Amendment and Zone Change, the Specific Plan Amendment will be consistent with the General Plan and Zoning and no impacts will result from the Plan's adoption and implementation.

C. Will the project conflict with any applicable habitat conservation plan or natural community conservation plan? ● No Impact.

The Planning Area is not located within the boundaries of a Western Riverside MSHCP criteria cell. Nevertheless, the mitigation provided throughout this section will reduce potential impacts to Western Riverside MSHCP identified species to levels that are less than significant.

3.10.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. As a result, no additional mitigation beyond that which may be required for individual projects is required.

[95] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

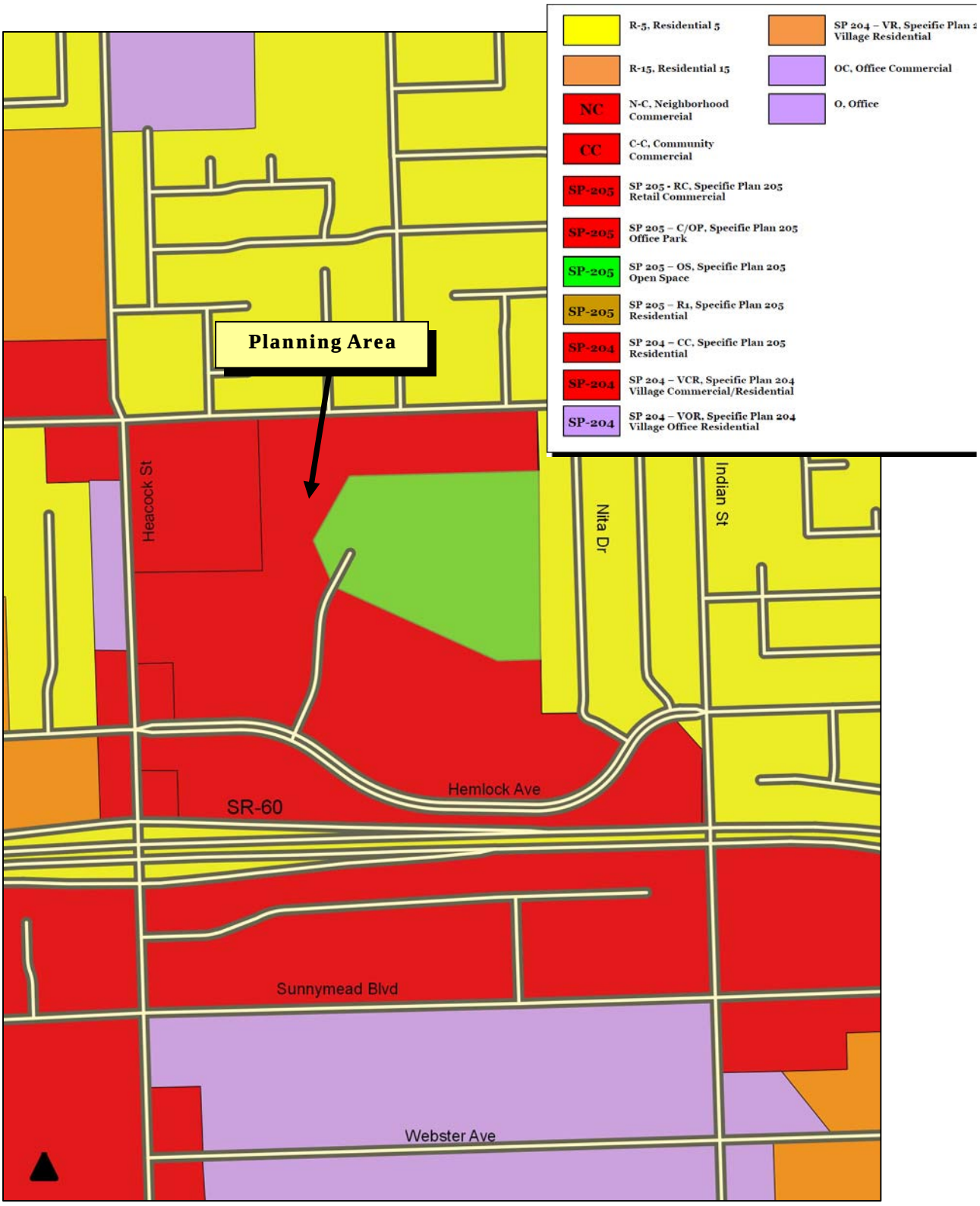


EXHIBIT 3-9
ZONING MAP
Source: City of Moreno Valley

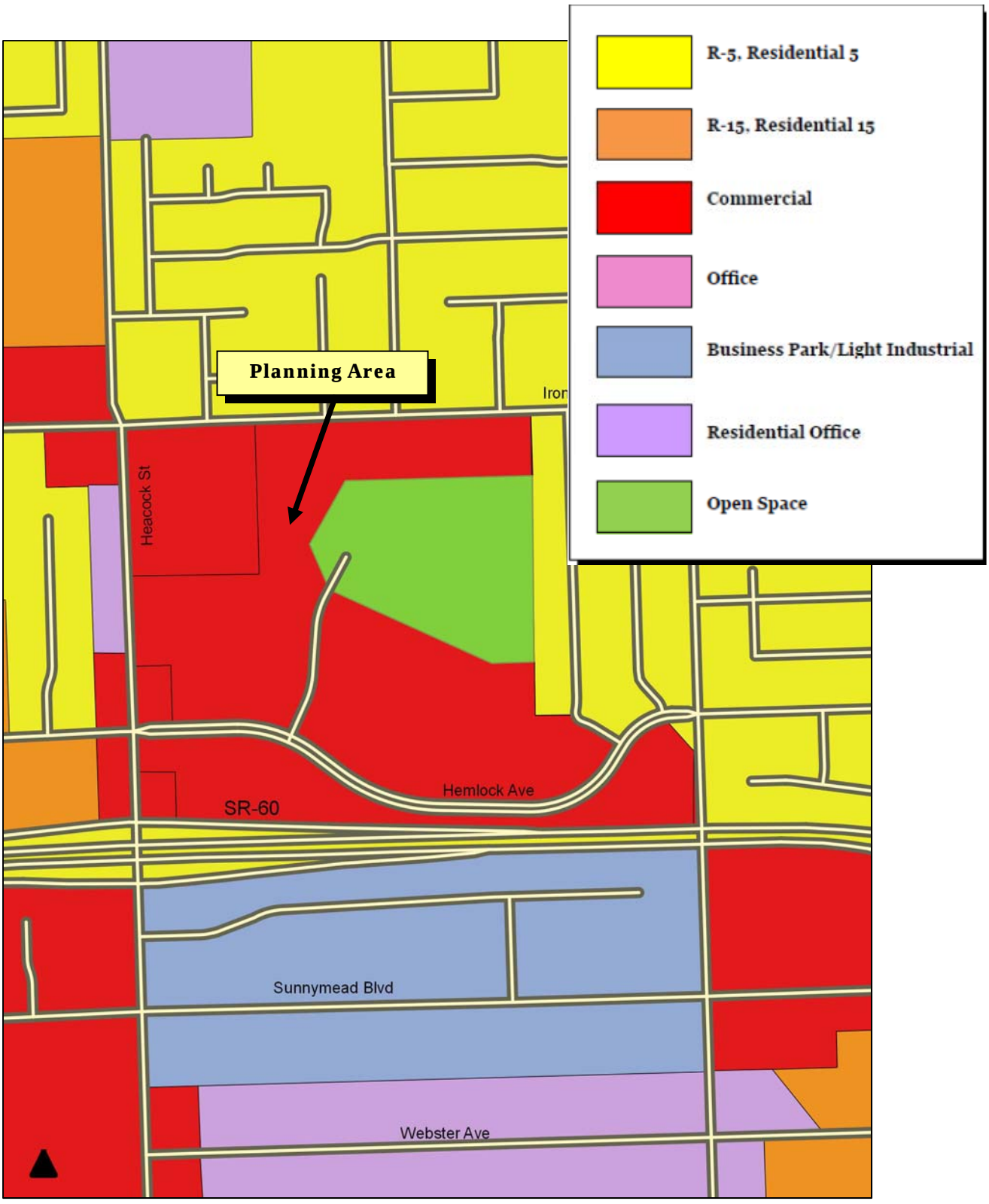


EXHIBIT 3-10
GENERAL PLAN LAND USE MAP
Source: City of Moreno Valley

3.11 MINERAL RESOURCES IMPACTS

3.11.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse impact on energy and mineral resources if it results in any of the following:

- The loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or,

- The loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

3.11.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents or the state? ● No Impact.*

The Planning Area is not located in a Significant Mineral Aggregate Resource Area (SMARA) nor is it located in an area with active mineral extraction activities. In addition, according to the SMARA study area maps prepared by the California Geological Survey, the City of Moreno Valley is located within the larger San Bernardino SMARA.[96] However, as indicated in the San Bernardino P-C region map, the Planning Area is not located in an area where there are significant aggregate resources present.[97] A review of California Division of Oil, Gas, and Geothermal Resources (DOGGR) well finder indicates that there are no wells located within the Planning Area.[98] The nearest well is located approximately five miles to the northeast along the northeast side of Highland Boulevard in the City of Moreno Valley.[99] This well is presently plugged and abandoned.[100] Since there are no active oil or mineral resource extraction operations present within the Planning Area, no impacts to these resources will occur.

B. *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? ● No Impact.*

A review of the San Bernardino P-C region map indicated that the Planning Area is not located in a location that contains aggregate extraction operations.[101] Therefore, the project's implementation will not contribute to a loss of availability to locally important mineral resources. Furthermore, the resources and

[96] California Department of Conservation. *Southern San Bernardino Production-Consumption (P-C) Region, San Bernardino and Riverside Counties, California.* http://www.conservation.ca.gov/smgb/Misc/Documents/SanBernPlates.pdf **(NOTE: The Planning Area is located within the Sunnymead Quadrangle).**

[97] Ibid.

[98] California, State of. Department of Conservation. *California Oil, Gas, and Geothermal Resources Well Finder. https://maps.conservation.ca.gov/doggr/wellfinder/#close*

[99] Google Earth. Site accessed August 24, 2017. The coordinates for the well were identified on the DOGGR website.

[100] California, State of. Department of Conservation. *Well Details.* https://secure.conservation.ca.gov/WellSearch/Details?api=06500122

[101] Ibid.

materials that will be utilized for the construction of the proposed project will not include any materials that are considered rare or unique. Thus, no impacts will result with the implementation of the Specific Plan.

3.11.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. As a result, no additional mitigation beyond that which may be required for individual development projects is required.

3.12 NOISE IMPACTS

3.12.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant impact on the environment if it results in any of the following:

- The exposure of persons to, or the generation of, noise levels in excess of standards established in the local general plan, noise ordinance or applicable standards of other agencies;
- The exposure of people to, or generation of, excessive ground-borne noise levels;
- A substantial permanent increase in ambient noise levels in the vicinity of the project above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- Locating within an area governed by an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or private use airport, where the project would expose people to excessive noise levels; or,
- Locating within the vicinity of a private airstrip that would result in the exposure of people residing or working in the Planning Area to excessive noise levels.

3.12.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?* ● *Less than Significant Impact.*

Noise levels may be described using a number of methods designed to evaluate the "loudness" of a particular noise. The most commonly used unit for measuring the level of sound is the decibel (dB). Zero on the decibel scale represents the lowest limit of sound that can be heard by humans. The eardrum may

rupture at 140 dB. In general, an increase of between 3.0 dB and 5.0 dB is the ambient noise level that is considered to represent the threshold for human sensitivity. In other words, increases in ambient noise levels of 3.0 dB or less are not generally perceptible to persons with average hearing abilities.

The current noise environment within the area surrounding the Planning Area is dominated by traffic noise emanating from Ironwood Avenue, Heacock Street, Hemlock Avenue, and the Moreno Valley Freeway. A *Sper Scientific* Digital Sound Meter was used to conduct the noise measurements. A series of 100 discrete noise measurements were recorded and the results of the survey are summarized in Table 3-4. Three measurement locations were utilized (refer to Exhibit 3-11). These measurements were taken on a Monday morning at 10:15. Table 3-4 indicates the variation in noise levels over time during the measurement period.[102] As indicated previously, the L_{50} noise level represents the noise level that is exceeded 50% of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. The average noise levels during the measurement periods were 57.3 dBA for location 1, 47.7 dBA location 2, and 60.7 dBA for location 3.

Table 3-4
Noise Measurement Results

Noise Metric	Noise Level (dBA) Davis Street Terminus – Location 1	Noise Level (dBA) Nita Drive – Location 2	Noise Level (dBA) Heacock Street – Location 3
L^{50} (Noise levels <50% of time)	57.3 dBA	45.9 dBA	61.3 dBA
L^{75} (Noise levels <75% of time)	58.2 dBA	51.7 dBA	67.4 dBA
L^{90} (Noise levels <90% of time)	59.0 dBA	55.1 dBA	71.3 dBA
L^{99} (Noise levels <99% of time)	61.5 dBA	59.1 dBA	76.4 dBA
L_{min} (Minimum Noise Level)	54.3 dBA	40.8 dBA	48.6 dBA
L_{max} (Maximum Noise Level)	62.4 dBA	62.0 dBA	77.7 dBA
Average Noise Level	57.3 dBA	47.7 dBA	60.7 dBA

Source: Blodgett Baylosis Environmental Planning.

Title 11, Chapter 11.80 Noise Regulation, Table 11.80.030-2 illustrates the maximum permitted noise levels established for commercial and residential uses. According to the Table, the maximum permitted noise levels for commercial uses are 65 dBA during the day-time and 60 dBA during the evening hours. For residential, the maximum permitted noise levels are 60 dBA for day-time hours and 55 dBA for evening hours. As indicated previously, the areas adjacent to the surrounding roadways are subject to the highest noise levels, with an average noise reading of 60.7 dBA.

[102] Bugliarello, et. al., *The Impact of Noise Pollution*, Chapter 127, 1975.

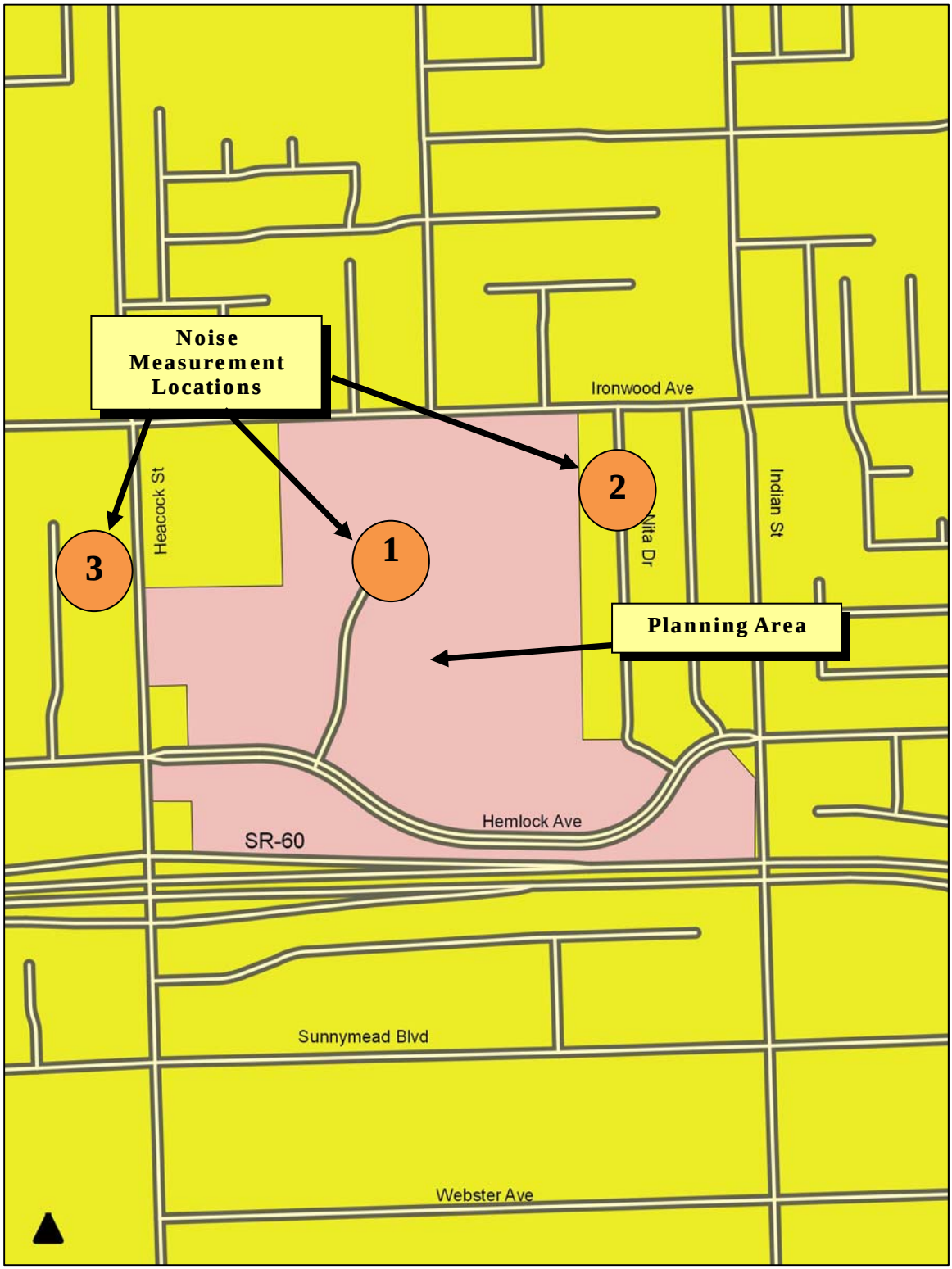


EXHIBIT 3-11
NOISE MEASUREMENT LOCATIONS
Source: Quantum GIS

These noise levels are within the maximum permitted noise levels for residential uses. It is important to note that these noise levels were recorded along the public right-of-way. Operational noise from Planning Area II will not affect the nearby residential uses located along Nita Drive. Planning Area II was originally going to encompass the entire parcel, extending from the Davis Street extension to the eastern property line. However, a 2.45-acre portion of the Planning Area II parcel will be under the ownership of the EMWD, who intends on using this segment of Planning Area II for access. No development will occur within this 2.45-acre segment. Therefore, this 2.45 acre portion of Planning Area II will serve as a buffer between the proposed mix of uses within Planning Area II and the adjacent single family along Nita drive. This 2.45-acre segment will provide 280 feet of separation between the development contemplated in Planning Area II and the aforementioned single family.

Planning Area VIII, located along the north side of the SR-60 Freeway and the south side of Hemlock Avenue, is targeted for retail or mix of uses. The Specific Plan calls for a 20-foot setback from the southern boundary of the Planning Area. The setbacks and landscape buffers will aid in the reduction of freeway noise. However, specific mitigation may be required as individual proposals for mix of use development are introduced.

Noise sensitive land uses consisting of single-family residential is located north of the Planning Area along the north side of Ironwood Avenue and east of the Planning Area along the west side of Nita Drive. The setback requirements will provide for a minimum reduction of six dBA from interior of the planning areas to the adjacent residential property lines. In addition, the Specific Plan mandates the installation of a decorative eight-foot-high concrete wall along the Planning Area's eastern property line. This wall, combined with mandatory landscaping will further reduce future increases in ambient noise. Should applications for fast-food restaurants be introduced, speaker boxes will be required to face away from adjacent residential. As individual projects are proposed, project specific conditions of approval and/or mitigation measures may be required.

The types of industrial uses permitted under the Specific Plan consist of business park and warehouse type uses. These uses generally produce noise from roll-up doors, back up alarms, forklift equipment, etc. Operational noise will be sufficiently mitigated by the inclusion of block walls, adequate setbacks, and landscaping. Building configuration will also help attenuate noise. If buildings are situated in a manner that directs operational noise away from sensitive receptors, this noise will be attenuated by the building itself. For example, for the residential uses located to the east, constructing a warehouse in Planning Area I whose dock high doors face west will reduce operational noise emanating from the parking areas because the warehouse will obstruct the line-of-sight between the parking areas and any future/existing residential. As a result, the potential impacts are considered to be less than significant.

B. Would the project result in exposure of people to or generation of excessive ground-borne noise levels? ● Less than Significant Impact.

The current noise environment within the Planning Area is dominated by traffic noise emanating from the SR-60 freeway, nearby arterial roadways, and the adjacent uses. Any future development will be required to adhere to the City's noise control requirements. Once operational, future development permitted under the Specific Plan will not generate excessive ground-borne noise because the individual projects will not

require the use of equipment capable of creating ground-borne noise (the types of industrial uses that are preferred include warehousing and business park). Future sources of noise will include roadway noise as well as operational noise from future commercial and industrial uses. Roadway noise is estimated in the previous subsection. The inclusion of landscape buffers, decorative concrete walls, setbacks, and mitigation tailored to individual projects (such as the use of silent alarms, double paned windows, etc.) will be effective in reducing ground borne noise generated by an increase in daily traffic. As a result, the potential impacts are considered to be less than significant.

C. *Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? ● Less than Significant Impact.*

A change in traffic noise levels of between 3.0 dBA and 5.0 dBA is generally considered to be the limit where the change in the ambient noise levels may be perceived by persons with normal hearing. This requires a doubling of traffic volumes along the adjacent roadways. The implementation of the Specific Plan and all subsequent development will result in approximately 7,612 net daily trips with 527 net trips in the PM Peak (231 inbound and 295 outbound). The streetscape plan, building design, and other development standards will be effective in attenuating any increased traffic noise. In addition, the future land uses and development will be required to comply with the City's noise control requirements as well as with the mitigation identified in the previous subsection. Adherence to all applicable City noise control requirements will reduce potential impacts to levels that are less than significant.

D. *Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? ● Less than Significant Impact with Mitigation.*

Composite construction noise is best characterized by Bolt, Beranek, and Newman.[103] In this study, the noisiest phases of construction for non-residential development is presented as 89 dBA as measured at a distance of 50 feet from the construction effort. In later phases during building erection, noise levels are typically reduced from these values and the physical structures further break up line-of-sight noise. However, as a worst-case scenario the 89 dBA value was used as an average noise level for the construction effort. The construction noise levels will decline as one moves away from the noise source. This effect is known as *spreading loss*. In general, the noise level adjustment that takes the spreading loss into account calls for a 6.0 dBA reduction for every doubling of the distance beginning with the initial 50-foot distance.

As indicated previously, there are noise sensitive land uses (single-family residential) located north of the Planning Area along the north side of Ironwood Avenue and east of the Planning Area along the west side of Nita Drive and the north side of Hemlock Avenue. Due to the presence of the aforementioned sensitive receptors, the following mitigation will be required for all future construction undertaken within the Planning Area:

- The Applicant shall ensure that the contractors conduct demolition and construction activities between the hours of 7:00 AM and 6:00 PM on weekdays and 9:00 AM to 12:00 PM on Saturdays, with no construction permitted on Sundays or Federal holidays.

[103] USEPA, Protective Noise Levels. 1971

- The Applicant shall ensure that the contractors use construction equipment that includes working mufflers and other sound suppression equipment as a means to reduce machinery noise.

- Signs must be installed around the perimeter of the Planning Area that display the name and phone number of the local contact person residents may call to complain about noise. Upon receipt of a complaint, the contractor must respond immediately by reducing noise to meet Code requirements. In addition, copies of all complaints and subsequent communication between the affected residents and contractors must be forwarded to the City's Community Development Department.

- Construction vehicles will be prohibited from traveling along Ironwood Avenue. This mitigation is designed to minimize the number of residential units that may be exposed to noise and vibration.

- The use of any such equipment which is capable of causing ground shaking is not permitted without prior written approval from the Public Works Director, or designee. If ground shaking vibratory equipment is requested and approved, the Contractor is responsible for making any repairs or replacements to facilities damaged due to nearby soils settling or other impacts of vibrating. The Contractor must install vibratory monitoring equipment to monitor for any settlement/damage caused.

- Construction staging must occur over 200 feet from the nearest residential use. The location of staging and queuing areas will be subject to the approval of the Community Development Department prior to the issuance of any building or grading permit.

Adherence to the aforementioned mitigation will reduce potential impacts to levels that are less than significant.

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Planning Area to excessive noise levels? ● No Impact.

The Planning Area is not located within two miles of an operational public airport. The March Air Reserve Base is the closest airport to the Planning Area. This airport is located 2.90 miles southwest of the Planning Area. In addition, the Riverside Municipal Airport is located in the City of Riverside approximately 12 miles to the west of the Planning Area. According to the Land Use Compatibility Plan that was prepared for the March Air Reserve Base, the planning area is not located within the 65, 60, or 55 CNEL boundaries and no impacts will occur.[104] Therefore, the development envisioned under the Specific Plan will not be exposed to noise generated by the approach and take-off of aircraft utilizing the aforementioned airports. As a result, no impacts are anticipated.

[104] Riverside County Airport Land Use Commission. *Riverside Municipal Airport Land Use Compatibility Plan*. Adopted March 2005.

F. Within the vicinity of a private airstrip, would the project expose people residing or working in the Planning Area to excessive noise levels? ● No Impact.

The Planning Area is not located within two miles of a *private* airstrip.[105] The nearest private airstrip is the helipad located at the Riverside County Regional Medical Center three miles southeast of the Planning Area. As a result, the development envisioned under the Specific Plan will not expose people residing or working in the Planning Area to excessive noise levels and no impacts is anticipated.

3.12.3 MITIGATION MEASURES

The following mitigation will be effective in reducing potential impacts in regards to construction noise:

Mitigation Measure No. 23 (Noise Impacts). The Applicant shall ensure that the contractors conduct demolition and construction activities between the hours of 7:00 AM and 6:00 PM on weekdays and 9:00 AM to 12:00 PM on Saturdays, with no construction permitted on Sundays or Federal holidays.

Mitigation Measure No. 24 (Noise Impacts). The Applicant shall ensure that the contractors use construction equipment that includes working mufflers and other sound suppression equipment as a means to reduce machinery noise.

Mitigation Measure No. 25 (Noise Impacts). Signs must be installed around the perimeter of the Planning Area that display the name and phone number of the local contact person residents may call to complain about noise. Upon receipt of a complaint, the contractor must respond immediately by reducing noise to meet Code requirements. In addition, copies of all complaints and subsequent communication between the affected residents and contractors must be forwarded to the City's Community Development Department.

Mitigation Measure No. 26 (Noise Impacts). Construction vehicles will be prohibited from traveling along Ironwood Avenue. This mitigation is designed to minimize the number of residential units that may be exposed to noise and vibration.

Mitigation Measure No. 27 (Noise Impacts). The use of any such equipment which is capable of causing ground shaking is not permitted without prior written approval from the Public Works Director, or designee. If ground shaking vibratory equipment is requested and approved, the Contractor is responsible for making any repairs or replacements to facilities damaged due to nearby soils settling or other impacts of vibrating. The Contractor must install vibratory monitoring equipment to monitor for any settlement/damage caused.

Mitigation Measure No. 28 (Noise Impacts). Construction staging must occur over 200 feet from the nearest residential use. The location of staging and queuing areas will be subject to the approval of the Community Development Department prior to the issuance of any building or grading permit.

[105] Google Earth. Website accessed August 25, 2017.

3.13 POPULATION & HOUSING IMPACTS

3.13.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant impact on housing and population if it results in any of the following:

- A substantial growth in the population within an area, either directly or indirectly related to a project;
- The displacement of a substantial number of existing housing units, necessitating the construction of replacement housing; or,
- The displacement of substantial numbers of people, necessitating the construction of replacement housing.

3.13.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project induce substantial population growth in an area, either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)? ● No Impact.

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan Amendment will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan.[106] The potential build-out under the Specific Plan Amendment is within the three alternative build-out projections established for the General Plan. The Specific Plan Amendment does not envision any residential at this time. As a result, no additional mitigation beyond that which may be required for individual development projects is required and no impacts will result.

B. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? ● No Impact.

There are no housing units located within the Planning Area. Much of the Planning Area is undeveloped, though the predominant land uses within the area consist of retail and fast food restaurants. As a result, no impacts will occur.

C. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? ● Less than Significant Impact.

As indicated previously, there are no residential units located within the Planning Area. However, homeless encampments were discovered within sections of the Planning Area during the initial site survey conducted by Blodgett Baylosis Environmental Planning. These encampments will be removed at the time of development. As a result, the potential impacts are considered to be less than significant.

[106] P and D Consultants. *Final Environmental Impact Report - City of Moreno Valley General Plan SCH# 200091075*. Report dated July 2006.

3.13.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. As a result, no additional mitigation beyond that which may be required for individual development projects is required.

3.14 PUBLIC SERVICES IMPACTS

3.14.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse impact on public services if it results in any of the following:

- A substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impact in order to maintain acceptable service ratios, response times, or other performance objectives relative to *fire department services*;

- A substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impact in order to maintain acceptable service ratios, response times, or other performance objectives relative to *law enforcement services*;

- A substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impact in order to maintain acceptable service ratios, response times, or other performance objectives relative to *school services*; or,

- A substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impact in order to maintain acceptable service ratios, response times, or other performance objectives relative to other *government services*.

3.14.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives relative to fire department services? ● Less than Significant Impact.*

Moreno Valley contracts with the Riverside County Fire Department for fire protection and emergency services. Fire Operations is the largest division within the Moreno Valley Fire Department, consisting of 72 sworn staff and two non sworn staff as of December 2011. The City of Moreno Valley has six fire stations with a seventh currently under construction. The closest first response station to the Planning

Area is the Sunnymead Station located 0.43 mile to the east at 24935 Hemlock Avenue. This station as well as other public facilities including schools, parks, and the City's Police Station are shown in Exhibit 3-12.

The retail, retail/mix of uses, and mix of uses once occupied, will be periodically inspected by the Moreno Valley Fire Department. In addition, the Fire Department will review the development plans to ascertain the nature and extent of any additional measures that may be required to meet any Fire Code requirements. The Fire Department currently reviews all new development plans, and future development will be required to conform to all fire protection and prevention requirements, including, but not limited to, building setbacks, emergency access, fire hydrants, interior sprinklers, et cetera. As individual projects are proposed, the Applicants will be responsible for paying all pertinent Fire Department fees and impact fees. As a result, the potential impacts are considered to be less than significant.

B. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives relative to law enforcement services? ● Less than Significant Impact.*

Law enforcement services in Moreno Valley are provided by the Moreno Valley Police Department, a local branch of the Riverside County Sherriff's Department. The Moreno Valley Police Station is located 2.27 miles to the southwest at 22850 Calle San Juan De Dos Lagos. The Moreno Valley Police Department (MVPD) has 162 sworn officers who provide field services in the City. The current officer to population ratio for MVPD is 0.9 officers per 1,000 residents. The average total response time for the period of January 01 to December 31, 2004, was over seven minutes for Priority 1 or emergency calls. As individual development is proposed, the Moreno Valley Police Department will review all development applications to ensure conformity with department requirements.

The Moreno Valley General Plan calls for the need to establish defensible space. Defensible space permits the identification of suspicious occurrences or persons, in part by increasing visibility and recognition by neighbors. Where a space is defensible, it is evident to a potential criminal that a crime could be observed and the criminal easily apprehended. Good lighting is a key ingredient of defensible space. The Specific Plan identifies several key policies designed to promote maximum visibility at all hours of the day.

These policies are consistent with the General Plan's goal of reducing property crime through the inclusion of defensible space. The following policies outlined in the Specific Plan will be effective in promoting exterior visibility:

- Onsite lighting includes lighting for parking areas, vehicular and pedestrian circulation, building exteriors, service areas, landscaping, security, and special effects.

- Wall-mounted utility lights that cause off-site glare are not permitted. "Shoebox" lights are preferred.

- Parking lot light fixtures shall comply with guidelines provided by owner assigned design review agent.

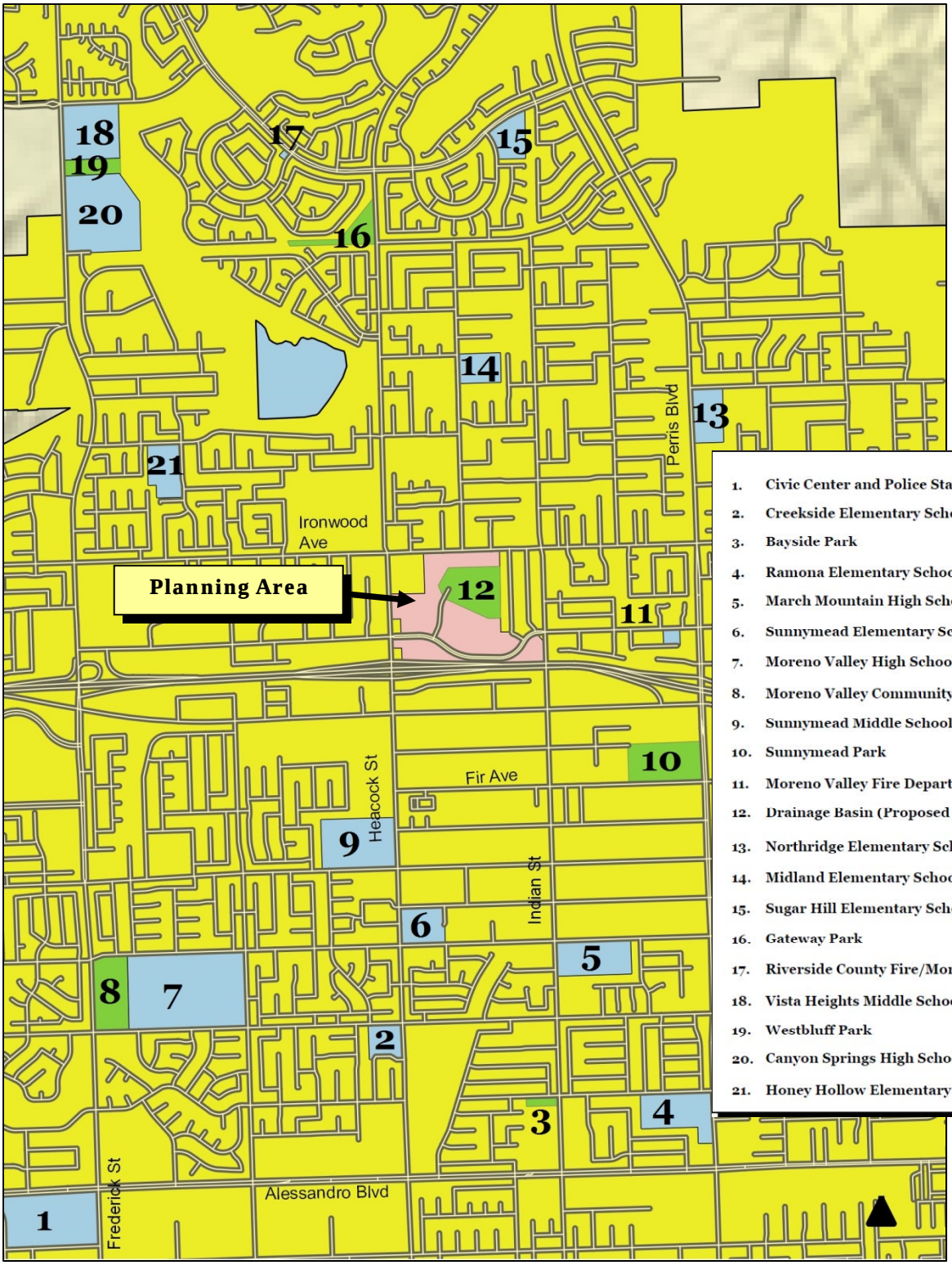


EXHIBIT 3-12
PUBLIC FACILITIES MAP
Source: City of Moreno Valley

- Small scale walkway or building entry lighting is encouraged for safety and aesthetic purposes.[107]

The Specific Plan also mandates the inclusion of security cameras. According to the Specific Plan, the location, appearance, and installation of exterior security cameras must be integrated with the architecture. Cameras should be mounted in the following locations:

- Cameras mounted on poles in parking lot (preferred)
- Cameras suspended from soffits (second choice)
- Cameras mounted on building walls with the top of the camera below the top of the parapet (third choice).[108]

Adherence to the policies dictated in the Specific Plan and the recommendations made by the Moreno Valley Police Department will reduce impacts to levels that are less than significant.

C. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, or other performance objectives relative to school services? ● Less than Significant Impact.*

The Planning Area is located within the service boundaries of the Moreno Valley Unified School District and is served by the following schools:

- Midland Elementary School, located 0.52 miles north of the site at 11440 Davis Street;
- Pal Middle School, located 1.41 miles east of the site at 11900 Slawson Avenue; and,
- Canyon Springs High School, located 1.40 miles northwest of the site at 23100 Cougar Canyon Road.

Any additional students indirectly associated with the future development will be accommodated by the aforementioned school district. In order to maintain acceptable student-teacher ratios and class sizes, developers must pay the following developer impact school fees: 60 cents per square foot. (effective: 7/1/2016).[109] As individual projects are proposed, the developers will be required to pay the above-mentioned development impact fees. These fees will generate revenue needed to expand and construct new facilities as well as hire additional staff members. As a result, the following impacts are considered to be less than significant.

[107] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

[108] Ibid.

[109] Moreno Valley Unified School District. *Developer Impact School Fees*. https://www.mvusd.net/apps/pages/index.jsp?uREC_ID=786774&type=d&pREC_ID=1181763

D. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives relative to other governmental services? ● Less than Significant Impact.

The development envisioned under the Plan is consistent with the growth projections developed for the City by the Southern California Association Governments (SCAG). In addition, any impacts to other governmental services such as libraries, parks, and recreation may be partially offset by the increase in the taxes and an increase in the assessed valuation of the property. As a result, no additional mitigation beyond that which may be required for individual development projects is required. Therefore, the potential impacts are considered to be less than significant.

3.14.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. As a result, no additional mitigation beyond that which may be required for individual development projects is required.

3.15 RECREATION IMPACTS

3.15.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse impact on the environment if it results in any of the following:

- The use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or,

- The construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

3.15.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? ● Less than Significant Impact.

The City of Moreno Valley Parks and Community Services Department operates 40 parks and/or joint-use facilities (531.66 maintained acres) and includes a 9-hole executive golf course, 23 multi-use sports fields, 11 tennis courts, nine basketball courts, 28 play apparatus, and three recreation centers. The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan may lead to an incremental increase in the use of City park and recreational facilities. As individual development is proposed, the future Applicants will be required to pay all pertinent impact fees pursuant to Section 3.40.010 of the City's Municipal Code. The payment of in-lieu fees will ease the burden placed onto the City's park facilities. As

a result, the potential impacts are expected to be less than significant.

B. Would the project affect existing recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? ● Less than Significant Impact.

There are no existing recreational facilities located within the Planning Area. The closest park to the Planning Area is Sunnymead Park, located 0.44 miles to the southeast along the north side of Fir Avenue.[110] The development envisioned under the Specific Plan will not affect any recreational facilities since there all development will be constructed within the boundaries of the Planning Area. The residential component of the Specific Plan may have the potential for increasing use and demand for park services. As stated previously, future project Applicants will be required to pay all pertinent impact fees. Thus, the potential impacts are considered to be less than significant.

3.15.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. As a result, no additional mitigation beyond that which may be required for individual development projects is required.

3.16 TRANSPORTATION & CIRCULATION IMPACTS

3.16.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project will normally have a significant adverse impact on traffic and circulation if it results in any of the following:

- A conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

- A conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways;

- Results in a change in air traffic patterns, including either an increase in traffic levels or a change in the location that result in substantial safety risks;

- Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

[110] Google Maps. Site accessed August 28, 2017.

- Results in inadequate emergency access; or,

- A conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Per City TIA guidelines, the study area intersections were analyzed under the latest version of the *Highway Capacity Manual* (HCM) "Operations" methodology using the *Synchro* level of service (LOS) software program which is consistent with the HCM 2010 methodology. The HCM 2010 methodology determines the control delay a driver may experience at the intersection. If an intersection could not be analyzed using the HCM 2010 methodology because of a particular intersection configuration (e.g., U-turn movements), the HCM 2000 methodology was used.

The degree of congestion at an intersection is described by the level of service, which ranges from LOS A to LOS F, with LOS A representing free-flow conditions with little delay and LOS F representing over-saturated traffic flow throughout the peak hour. Brief descriptions of the six levels of service for signalized and unsignalized intersections based on the HCM methodology are shown in Table 3-5.

Table 3-5
Level of Service Definitions

Level of Service	Control Delay in Seconds (signalized)	Control Delay in Seconds (unsignalized)
A	0.0 – 10.0 seconds	0.0 – 10.0 seconds
B	10.1 – 20.0 seconds	10.1 – 15.0 seconds
C	20.1 – 35.0 seconds	15.1 – 25.0 seconds
D	35.1 – 55.0 seconds	25.1 – 35.0 seconds
E	55.1 – 80.0 seconds	35.1 – 50.0 seconds
F	80.1 seconds or greater	50.1 seconds or greater

Table 3-6 below provides detailed descriptions of each level of service.

Table 3-6
Level of Service Description

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Source: *Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.*

Per City TIA guidelines, Table 3-7 provides the LOS criteria for roadway segments based on daily traffic volumes.

Table 3-7
Level of Service Definitions for Roadway Segments

Roadway	A	B	C	D	E
6-lane Divided Arterial	33,900	39,400	45,000	50,600	56,300
4-lane Divided Arterial	22,500	26,300	30,000	33,800	37,500
4-lane Undivided Arterial	15,000	17,500	20,000	22,500	25,000
2-lane Industrial Collector	7,500	8,800	10,000	11,300	12,500
2-lane Undivided Residential	n/a	n/a	n/a	n/a	2,000

The City's significance threshold is based on the *City of Moreno Valley General Plan* (July 2006) which states:

- *LOS D is applicable to intersections and roadway segments that are adjacent to freeway on/off ramps, and/or adjacent land uses. LOS C is applicable to all other intersections and roadway segments. Boundary intersections are assumed to be LOS D.*

Therefore, if the project causes an intersection to operate below the minimum standard, the project would cause a significant project-specific impact at that intersection, and specific mitigation measures must be developed to improve the intersection's LOS back to pre-project levels.

3.16.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. *Would the project cause a conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit)? ● Less than Significant Impact with Mitigation.*

This traffic study analyzed the following traffic scenarios:

- *Existing Condition*. Existing traffic volumes were collected at the study intersections and roadway segments in August-2017 during a typical weekday. The existing traffic scenario constitutes the environmental setting in accordance with the *California Environmental Quality Act* (CEQA) analysis at the time that the hearing body reviews the proposed project.

- *Existing with-project Condition*. The Existing with-project condition traffic was developed by adding the proposed project traffic to the existing condition traffic volumes. This scenario was the basis for determining project-specific impacts and mitigation measures under existing conditions.

- *Near Term Year 2022 Baseline Condition*. Per City requirements, the near term year of analysis would be 2022, a five-year horizon from the existing traffic condition. The proposed project is anticipated to be built and occupied by year 2022. Near-Term year traffic in this scenario was forecast for 2022 by applying an annual ambient growth rate (2% per year per the City's Scoping

Agreement) to the existing traffic volumes. In addition to the ambient growth rate, traffic from approved and pending projects (i.e. cumulative projects) in the project's vicinity was added.

- *Near Term Year 2022 with-Project Condition*. The near term year 2022 with-project condition traffic was developed by adding the proposed project traffic to the Near-Term Year Baseline Condition. This scenario was also the basis for determining project-specific impacts and mitigation measures for the Near Term Year.

- *General Plan Buildout Baseline Condition*. General Plan Buildout (2035) without project traffic conditions were derived from the Moreno Valley Transportation Analysis Model which in turn is based-upon the Riverside Transportation Analysis Model (RivTAM) refined to represent General Plan Buildout conditions for the City of Moreno Valley. The post-processed traffic forecasts reflect the area-wide growth anticipated between existing conditions and General Plan Buildout conditions.

- *General Plan Buildout with-Project Condition*. The General Plan build-out with-project traffic forecasts were determined by adding the project traffic to the General Plan Buildout Baseline (without project) traffic forecasts from the Transportation Analysis Model. The General Plan build-out traffic forecasts used in the traffic analysis were refined with existing peak hour traffic count data collected at intersection analysis locations.[111]

Exhibit 3-13 illustrates the project study area and traffic control. Regional access to the project site is provided by State Route 60 (SR-60) via its interchange with Heacock Street. Local access is provided by Heacock Street, Hemlock Avenue, and Ironwood Avenue. Per Scoping Agreement, the study area intersections are as follows:

- Heacock Street (NS) at Ironwood Avenue (EW);
- Heacock Street (NS) at Project Access (EW);
- Heacock Street (NS) at Hemlock Avenue (EW);
- Heacock Street (NS) at SR-60 Freeway WB Ramps (EW);
- Heacock Street (NS) at SR-60 Freeway EB Ramps (EW);
- Project Access (NS) at Hemlock Avenue (EW);
- Davis Street (NS) at Hemlock Avenue (EW);
- Project Access (NS) at Hemlock Avenue (EW);
- Project Access (NS) at Hemlock Avenue (EW);
- Project Access (NS) at Hemlock Avenue (EW);
- Nita Drive (NS) at Hemlock Avenue (EW);
- Davis Street (NS) at Ironwood Avenue (EW);
- Indian Street (NS) at Ironwood Avenue (EW);
- Indian Street (NS) at Hemlock Avenue (EW); and,
- Indian Street (NS) at Sunnymead Boulevard (EW).

[111] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

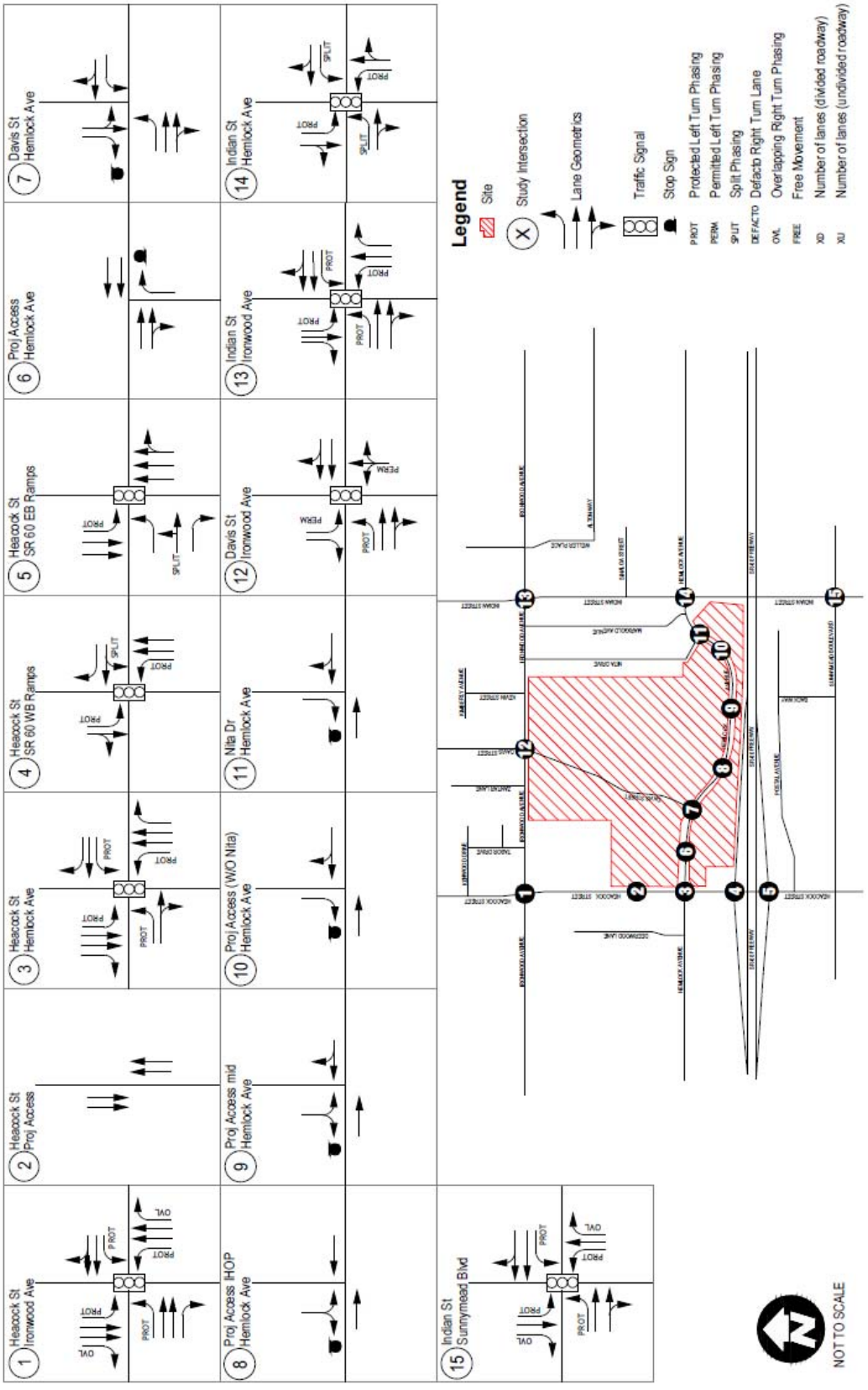


EXHIBIT 3-13
STUDY AREA ROADWAY GEOMETRICS AND TRAFFIC CONTROL

Per Scoping Agreement, the study area roadway segments are as follows:

1. Heacock Street – Ironwood Avenue to Hemlock Avenue
2. Heacock Street – Hemlock Avenue to SR-60 Freeway WB Ramps
3. Indian Street – Ironwood Avenue to Hemlock Avenue
4. Indian Street south of Hemlock Avenue
5. Ironwood Avenue west of Heacock Street
6. Ironwood Avenue – Heacock Street to Indian Street
7. Ironwood Avenue – east of Indian Street
8. Hemlock Avenue west of Heacock Street
9. Hemlock Avenue – Heacock Street to Indian Street
10. Hemlock Avenue – east of Indian Street

Existing traffic volumes were collected at the study intersections and roadway segments in August 2017. Exhibit 3-14 shows the existing AM and PM peak hour traffic volumes at the study intersections, while Exhibit 3-15 shows the existing daily traffic volumes on the study area roadway segments.

Based on the analysis methodology described previously, the existing AM and PM peak hour traffic volumes were input into the *Synchro* LOS software to determine the existing intersection delay and LOS values.[112] Table 3-8 presents the results of the existing intersection LOS analysis.

Table 3-8
Existing without-Project Weekday Peak Hour Intersection LOS

Intersection	Traffic Control	City's LOS Standard	AM Peak		PM Peak	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. Heacock Street/Ironwood Avenue	Signal	LOS D	C	26.9	C	28.0
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0
3. Heacock Street/Hemlock Avenue	Signal	LOS D	B	18.1	C	21.7
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	21.8	B	19.6
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	21.9	C	21.8
6. Project Access/Hemlock Avenue	OWSC	LOS C	A	8.7	A	9.9
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.1	B	13.5
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.1	B	10.0
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.7	B	10.3
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.1
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.2
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	25.8	C	33.0
13. Indian Street/Ironwood Avenue	Signal	LOS D	C	32.1	C	25.9
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	22.3	C	22.1
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	21.2	C	27.3

1. Level of Service
2. Delay measured in seconds/vehicle
3. Delay and LOS are based on Highway Capacity Manual 2010
4. Signal = Traffic Signal (evaluated using the HCM Methodology)
5. TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)
6. OWSC = One Way Stop Controlled (evaluated using the HCM Methodology)

[112] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

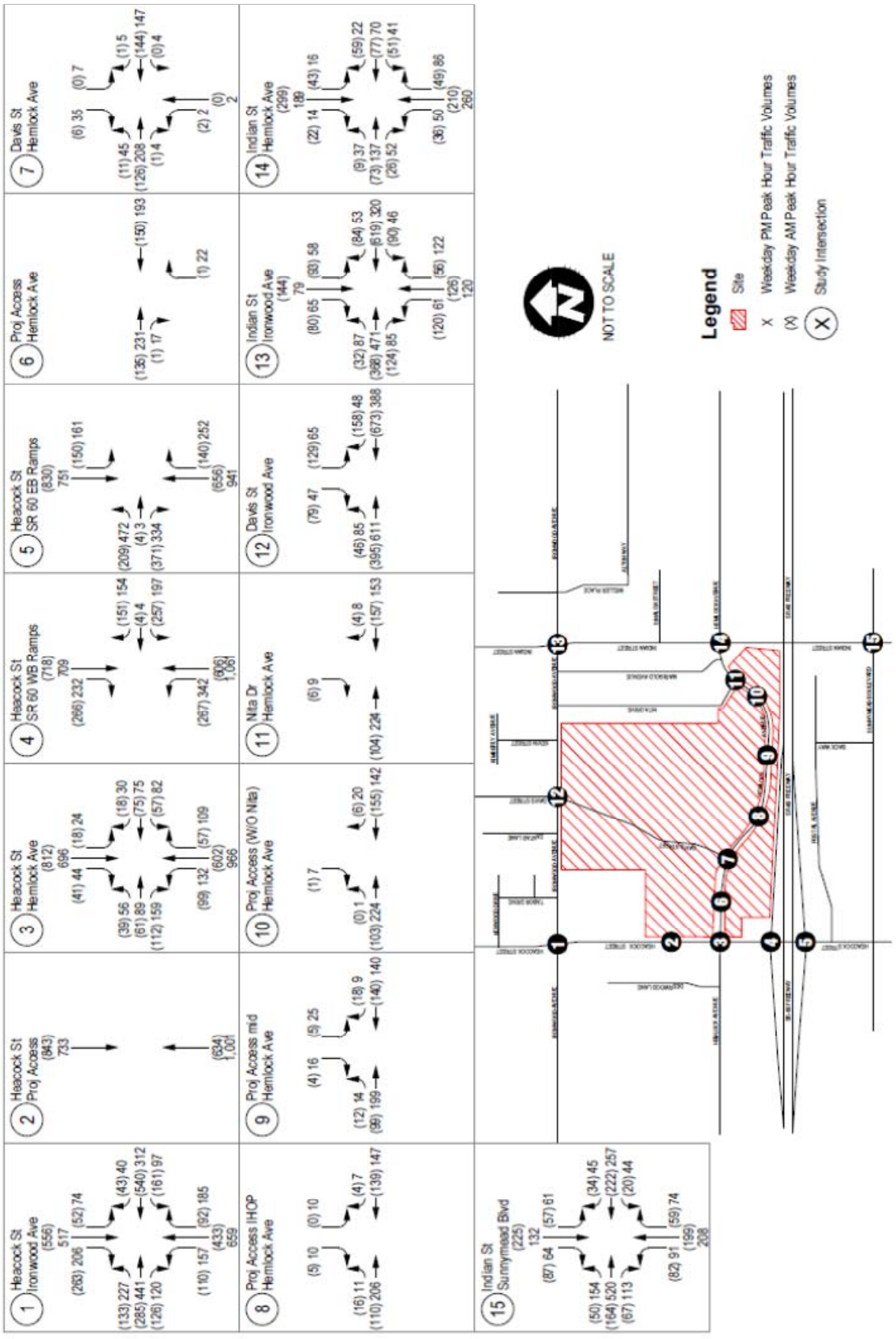


EXHIBIT 3-14
EXISTING AM AND PM PEAK HOUR TRAFFIC VOLUMES

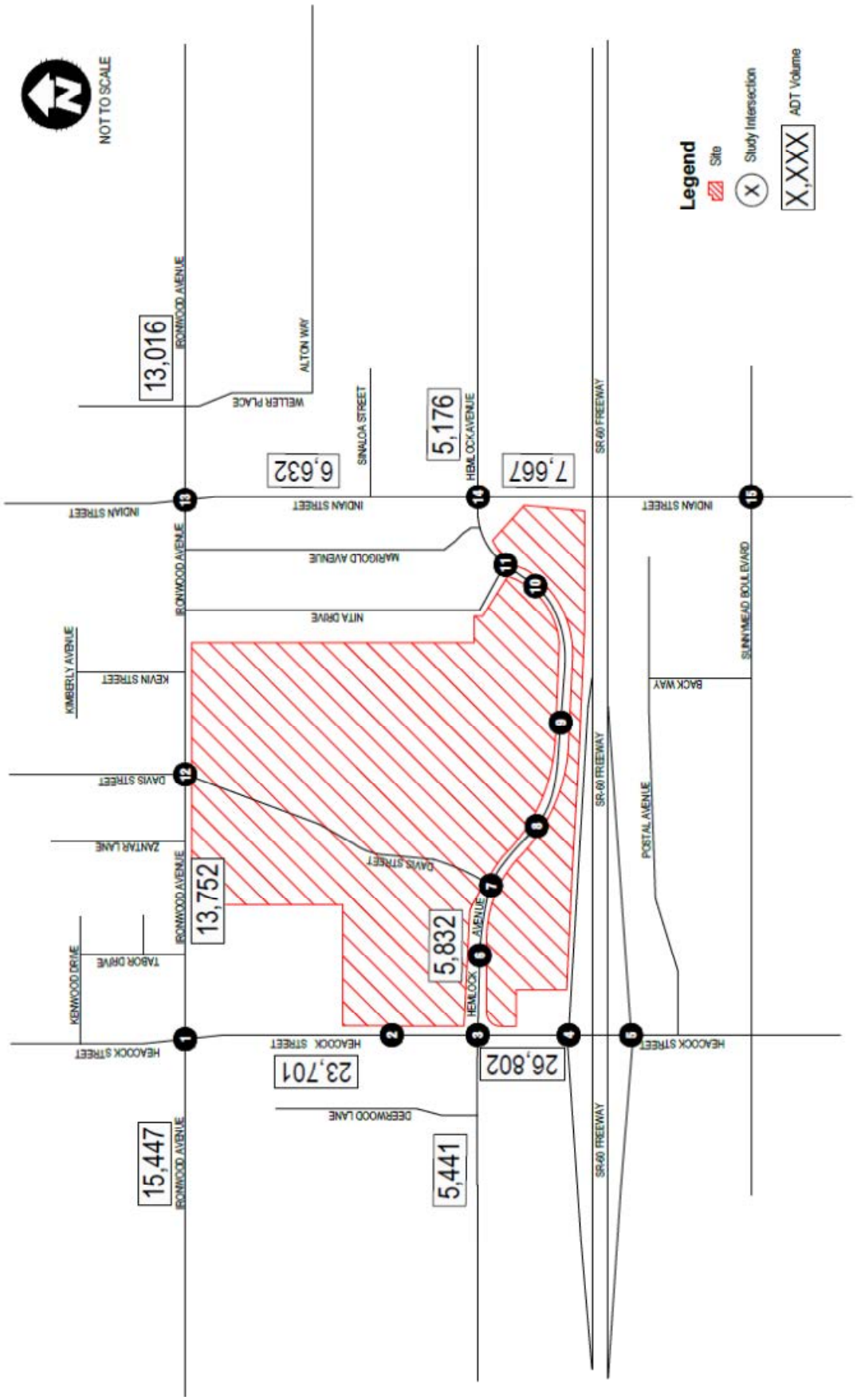


EXHIBIT 3-15
EXISTING DAILY TRAFFIC VOLUMES
Source: Transpogroup

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

Based on the existing LOS analysis, all study area intersections are currently operating with a satisfactory LOS as per City's standards during both peak hours.

Based on the analysis methodology described previously, the existing daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values presented in Table 3-5. Table 3-9 presents the results of the existing roadway segment LOS analysis. Based on the existing roadway segment analysis, all study area roadway segments currently operate with LOS D or better.[113]

Table 3-9
Existing Without-Project Weekday Peak Hour Intersection LOS

Roadway Segment	Existing Classification	Number of Lanes	Divided/ Undivided	ADT[1]	LOS Standard[2]	Maximum Capacity ADT[3]	V/C	LOS	Exceeds Threshold?
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	4	Divided	23,701	LOS D	37,500	0.632	B	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	4	Divided	26,802	LOS D	37,500	0.715	C	No
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	2	Undivided	6,632	LOS D	12,500	0.531	A	No
4. Indian Street - South of Hemlock Avenue	Minor Arterial	2	Undivided	7,667	LOS D	12,500	0.613	B	No
5. Ironwood Avenue- West of Heacock Street	Minor Arterial	4	Divided	15,447	LOS C	37,500	0.412	A	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	4	Divided	13,752	LOS C	37,500	0.367	A	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	4	Divided	13,016	LOS C	37,500	0.347	A	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	2	Undivided	5,441	LOS C	12,500	0.435	A	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	4	Divided	5,832	LOS C	37,500	0.156	A	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	2	Undivided	5,176	LOS C	12,500	0.414	A	No

Weekday daily, AM and PM peak hour trip generation estimates for the proposed project were developed using trip rates provided in the *Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, 2017*.[114] Summaries of the trip generation rates and resulting vehicle trips for the proposed project are presented in Table 3-10.

[113] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[114] Ibid.

Table 3-10
Proposed Project Trip Generation

	LU	Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates									
Shopping Center	Code 820	TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Business Park	Code 770	TSF	12.44	0.24	0.16	0.40	0.19	0.23	0.42
Project Trip Generation									
Planning Area 1									
Business Park	135.000	TSF	1,679	33	21	54	26	31	57
Subtotal			*1,679*	*33*	*21*	*54*	*26*	*31*	*57*
Planning Area 2									
Business Park	35.000	TSF	435	9	5	14	7	8	15
Subtotal			*435*	*9*	*5*	*14*	*7*	*8*	*15*
Planning Area 3									
Business Park	178.000	TSF	2,214	43	28	71	34	40	75
Retail	15.000	TSF	566	9	5	14	27	30	57
Subtotal			*2,781*	*52*	*33*	*85*	*62*	*70*	*132*
Planning Area 4									
Retail	255.000	TSF	9,626	149	91	240	466	505	972
Subtotal			*9,626*	*149*	*91*	*240*	*466*	*505*	*972*
Planning Area 6									
Retail	35.000	TSF	1,321	20	13	33	64	69	133
Subtotal			*1,321*	*20*	*13*	*33*	*64*	*69*	*133*
Planning Area 7									
Retail	40.000	TSF	1,510	23	14	38	73	79	152
Subtotal			*1,510*	*23*	*14*	*38*	*73*	*79*	*152*
Planning Area 8									
Retail	20.000	TSF	755	12	7	19	37	40	76
Subtotal			*755*	*12*	*7*	*19*	*37*	*40*	*76*
Total Trip Generation			18,108	298	185	482	735	802	1,537
Internal Trip Capture[1]			-724	-21	-13	-34	-29	-32	-61
Pass-By Trips[2]			-2,342	-29	-29	-58	-236	-237	-473
Net Trip Generation With Internal Trip Capture and Pass By			**15,041**	**248**	**142**	**390**	**469**	**533**	**1,003**
Existing Land Uses (includes Internal Trip Capture and Pass-By Reductions)[5]			7,429	269	199	468	238	238	476
Net New Trips (Project – Existing)			**7,612**	**-21**	**-56**	**-78**	**231**	**295**	**527**

Note: TSF = Thousand Square Feet
1. Internal capture calculated using methodology from NCHRP 684 Mixed Use Spreadsheet (AM = 7%, PM/Daily = 4%)
2. Pass-by trip rate for Retail Uses (34% during PM peak hour, 17% during the AM peak hour and Daily based on weekend mid-day) from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center.

The total trip generation of the project (before accounting for internal capture, pass-by or existing uses) was found to be 18,108 daily trips with 482 trips in the AM Peak (298 inbound and 185 outbound) and 1,537 trips in the PM Peak (735 inbound and 802 outbound). These trip generation numbers are compared to the approved Festival at Moreno Valley Specific Plan 205 trip generation numbers (Greiner Engineering

Study 1986) and the results are illustrated in Table 3-11. As shown in Table 3-11, the current proposed specific plan generates less trips than the Specific Plan 205 to the order of 214 trips Daily and 900 trips in the PM Peak (note that AM Peak period was not assessed in the Greiner Engineering Study).[115]

Table 3-11
Proposed Project Trip Generation Versus Greiner Engineering (SP 205)

	LU	Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Proposed Project Total Traffic (No Internal Trip Capture or Pass-by Reductions)			18,108	298	185	482	735	802	1,537
Greiner Engineering Study (Table 3) (No Internal Trip Capture or Pass-by Reductions)			18,322	--	--	--	1,081	1,356	2,437
Trip Generation With Internal Trip Capture and Pass By			**-214**	**--**	**--**	**--**	**-346**	**-554**	**-900**

1. Greiner Engineering – Specific Plan 205 Site Specific Analysis – December 1986
Greiner Engineering Study did not evaluate the AM Peak Hour as PM is the time with the highest number of trips

Internal capture was calculated using methodology from NCHRP 684 Mixed Use Spreadsheet which yields an internal trip capture of 7% in the AM peak and 4% in PM Peak and Daily. Pass-by trip rates for the retail component of the project were estimated at 34% during PM peak hour and 17% during the AM peak hour and Daily based on the *Institute of Transportation Engineers (ITE), Trip Generation, 10th Edition, 2017.*[116]

The net new trips of the project are calculated by accounting for the existing uses as shown in Table 3-12. The net new trips generated by the project are calculated to be 7,612 daily trips with 527 trips in the PM Peak (231 inbound and 295 outbound). During the AM peak the project would produce less trips than existing conditions whereby the project is forecasted to remove 78 trips from the street system (21 inbound and 56 outbound).

Regional and local trip distribution percentages for the proposed project were based on logical peak hour commute patterns and approved in the City's Scoping Agreement. Exhibit 3-16 and Exhibit 3-17 illustrate the retail outbound and inbound trip distribution percentages respectively, while Exhibit 3-18 and Exhibit 3-19 illustrate the outbound and inbound trip distribution percentages for the Business Park component of the project respectively. The trip distribution percentages at each intersection were applied to the proposed project's weekday AM and PM peak hour trip generation estimates to calculate the project trip assignment.[117] The resulting weekday AM, and PM peak hour trip assignments are also shown on Exhibit 3-20.

[115] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[116] Ibid.

[117] Ibid.

Table 3-12
Existing Project Site Trip Generation

	LU	Units	Daily	AM Peak Hour			PM Peak Hour		
				IN	OUT	TOTAL	IN	OUT	TOTAL
Trip Rates[1]									
Shopping Center	820	TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Fast Food Restaurant With Drive Through	934	TSF	470.95	20.50	19.69	40.19	16.99	15.68	32.67
Fast Food Restaurant Without Drive Through	933	TSF	346.23	15.06	10.04	25.10	14.17	14.17	28.34
High-Turnover Sit-down Restaurant	932	TSF	112.18	5.47	4.47	9.94	6.06	3.71	9.77
Automobile Service	941	SP	40.00	2.01	0.99	3.00	2.72	2.13	4.85
Project Trip Generation									
Planning Area 1	Vacant								
Planning Area 2	Vacant								
Planning Area 3	Vacant								
Planning Area 4									
Shopping Center (Retail Center)	162.250	TSF	6,125	95	58	153	297	321	618
Fast Food Restaurant With Drive Through (Yoshinoya)	3.900	TSF	1,837	80	77	157	66	61	127
Subtotal			*7,962*	*174*	*135*	*309*	*363*	*383*	*746*
Planning Area 6									
Fast Food Restaurant With Drive Through (Arby's)	2.700	TSF	1,272	55	53	109	46	42	88
Fast Food Restaurant Without Drive Through (KFC)	2.700	TSF	935	41	27	68	38	38	77
Auto Service (Jiffy Lube)	3	SP	120	6	3	9	8	6	15
High-Turnover Sit-down Restaurant (Centanario)	8.800	TSF	987	48	39	87	53	33	86
Subtotal			*3,314*	*150*	*123*	*273*	*146*	*120*	*265*
Planning Area 7									
Shopping Center (Retail Center)	33.675	TSF	1,271	20	12	32	62	67	128
Subtotal			*1,271*	*20*	*12*	*32*	*62*	*67*	*128*
Planning Area 8	*Vacant*								
Total Trip Generation			12,546	344	269	614	570	569	1,139
Internal Trip Capture[2]			-2,886	-17	-13	-31	-131	-131	-262
Pass-By Trips For Shopping Center[3]			-1,257	-16	-15	-31	-131	-130	-261
Pass-By Trips For Fast Food With Drive Through[4]			-777	-33	-33	-66	-53	-53	-106
Pass-By Trips For High-Turnover Sit-down Restaurant[5]			-197	-9	-8	-17	-17	-17	-34
Total Pass-by Trips			*-2,232*	*-58*	*-57*	*-115*	*-201*	*-200*	*-401*
Net Trip Generation With Internal Trip Capture and Pass By			**7,429**	**269**	**199**	**468**	**238**	**238**	**476**

Traffic Conditions prior to the time that the proposed development is completed will be estimated by increasing the existing traffic counts by a growth rate of 2% per year. The ambient growth rate will be applied from 2017 till 2022. The cumulative project list includes reasonably foreseeable development projects which are either approved or being processed concurrently in the study.[118] A list of these projects was compiled in collaboration with the City's Planning Department (Economic Development) and location of each cumulative project is shown in Exhibit 3-21, while the trip generation of each cumulative project is shown in Table 3-13. The cumulative project trips where then distributed and assigned on the study area intersections as shown in Exhibit 3-22.

[118] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

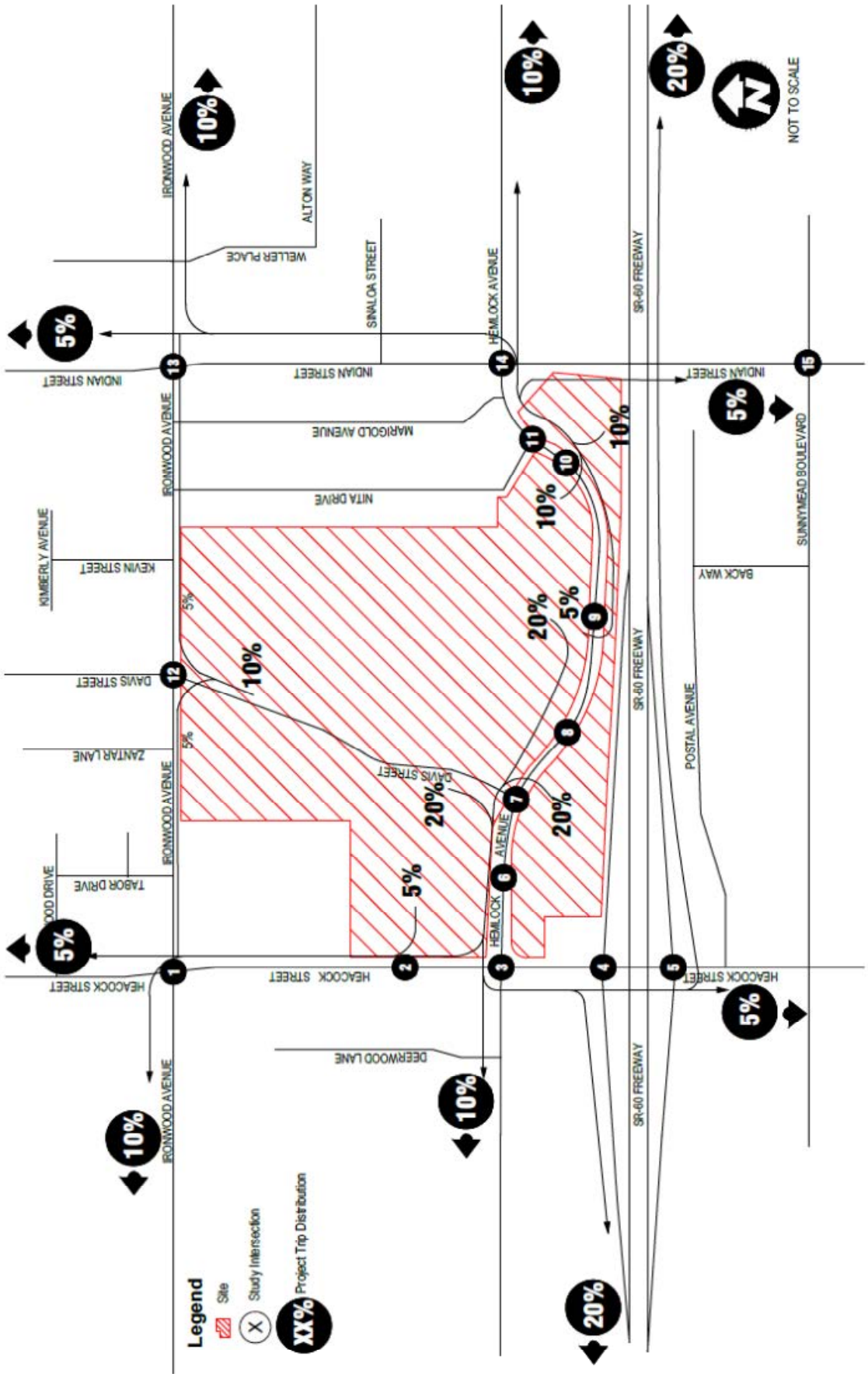


EXHIBIT 3-16
RETAIL DISTRIBUTION OUTBOUND

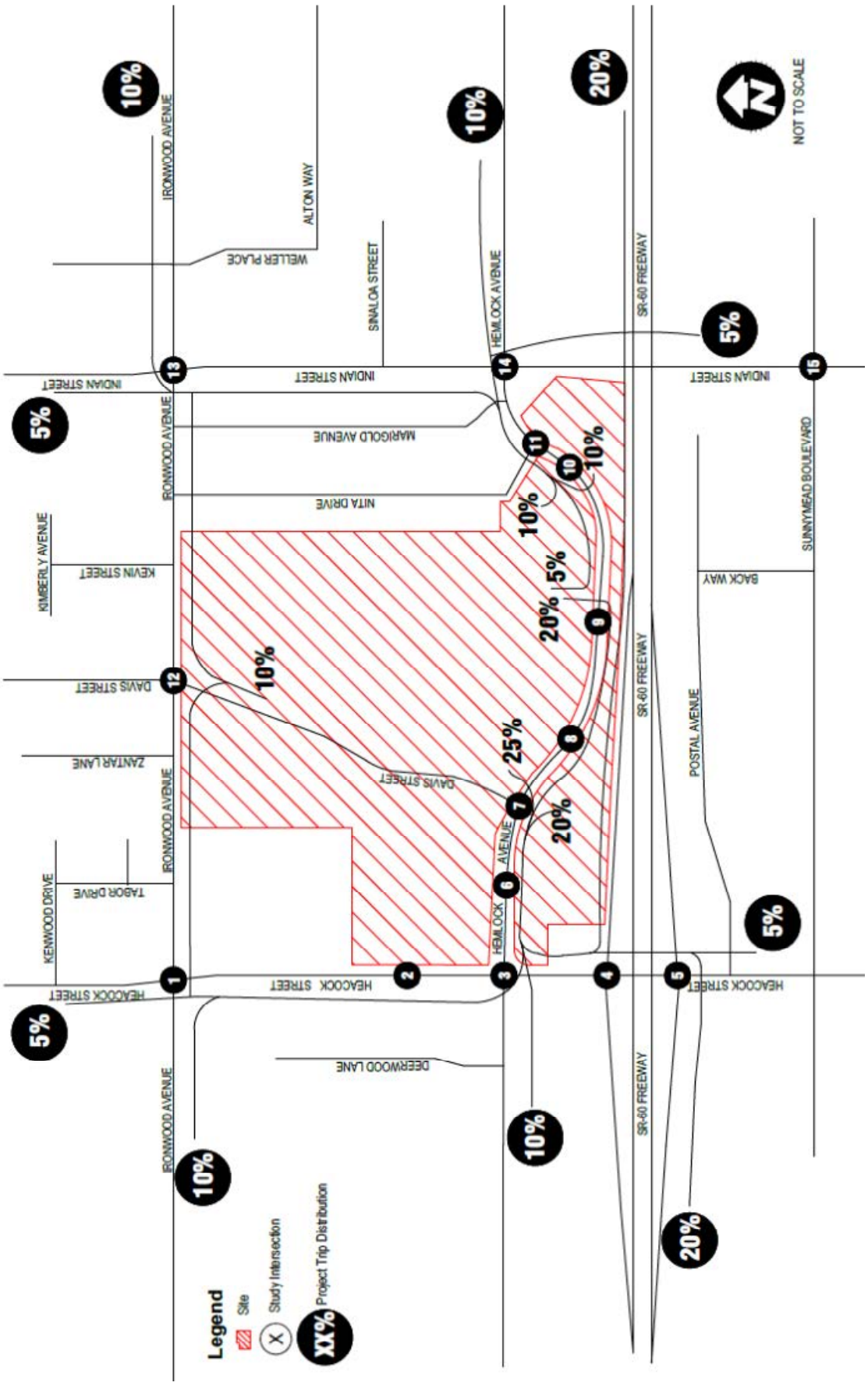


EXHIBIT 3-17
RETAIL DISTRIBUTION INBOUND

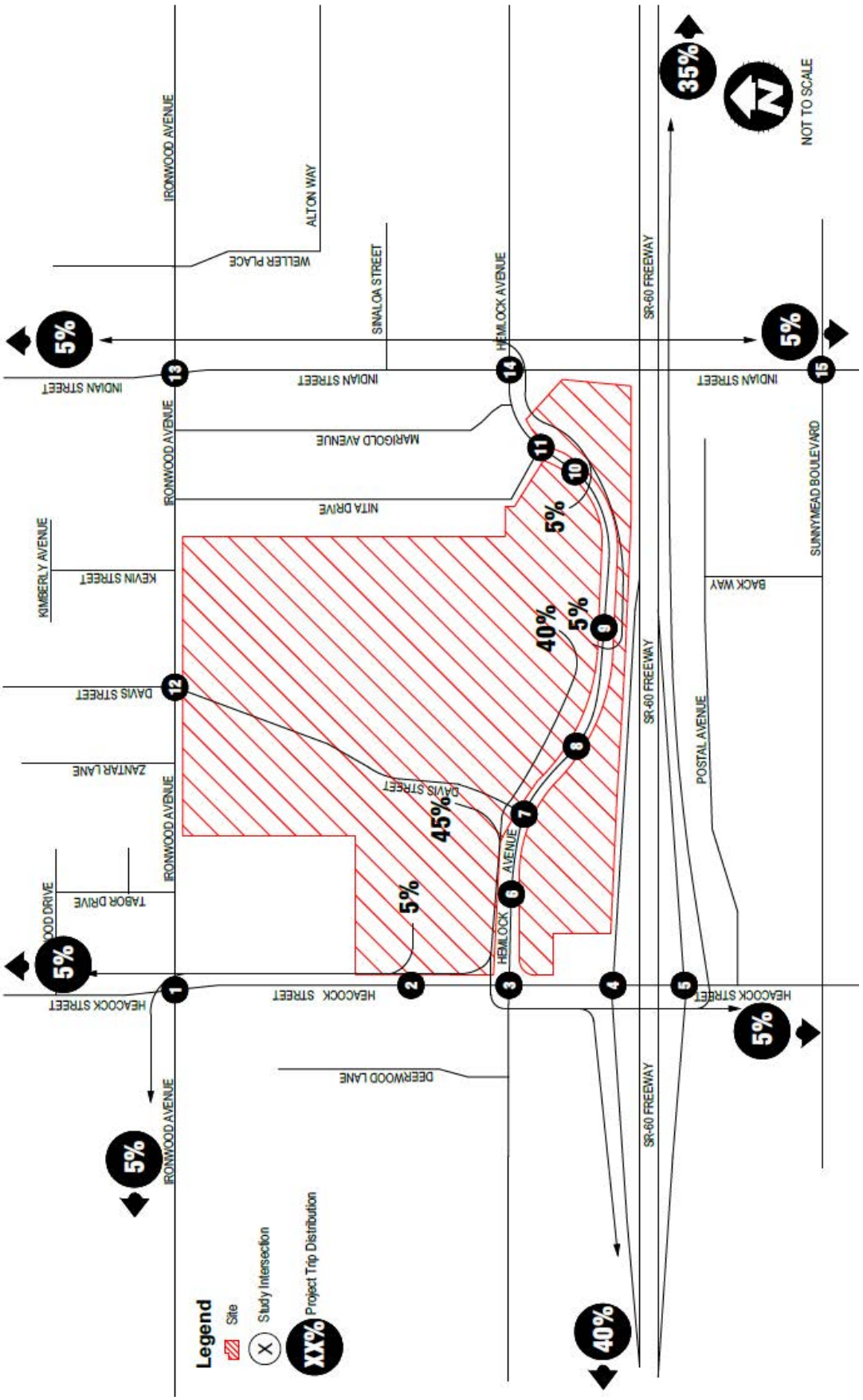


EXHIBIT 3-18
BUSINESS PARK DISTRIBUTION OUTBOUND
Source: Traffic Impact Analysis

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

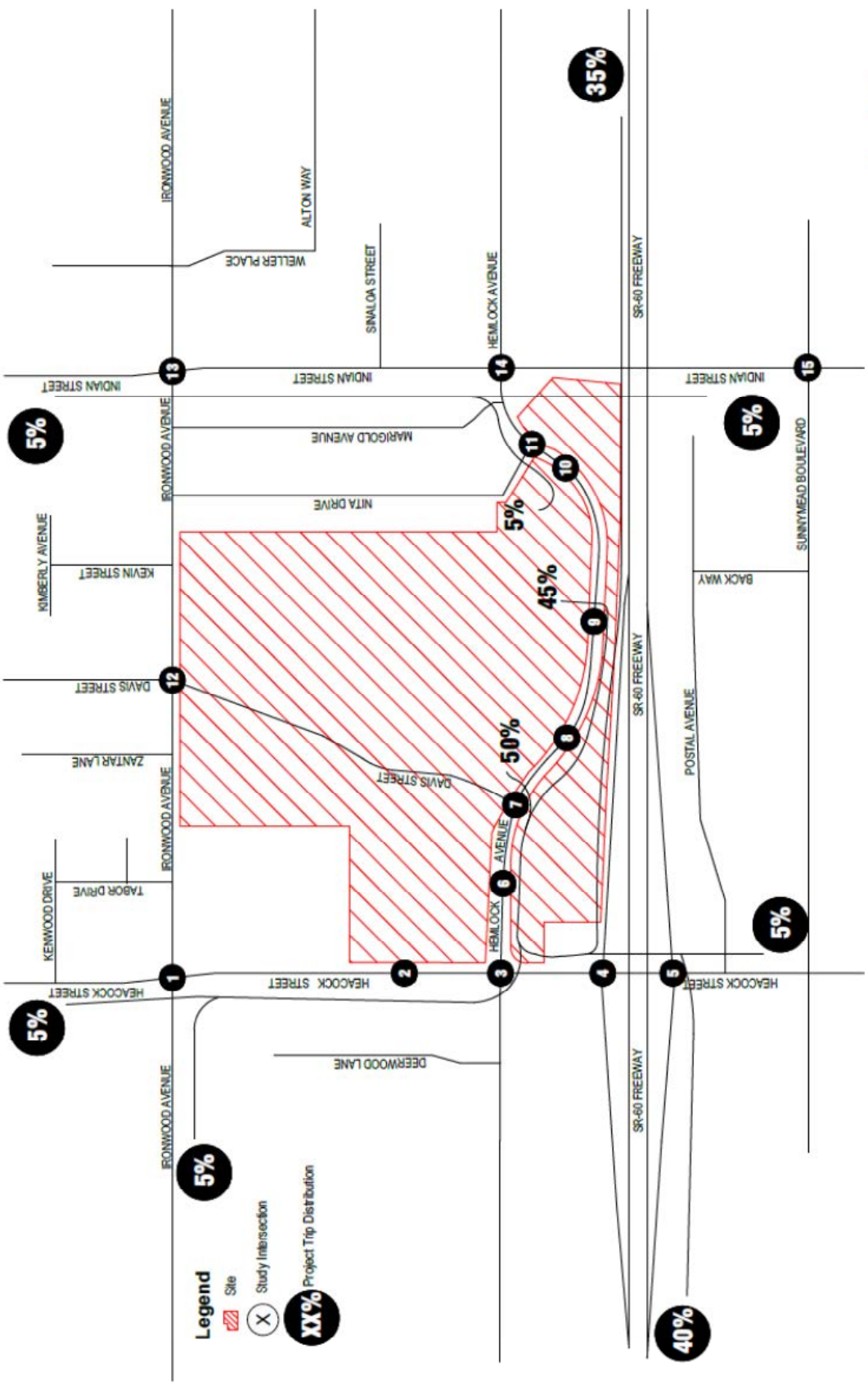


EXHIBIT 3-19
BUSINESS PARK DISTRIBUTION INBOUND

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

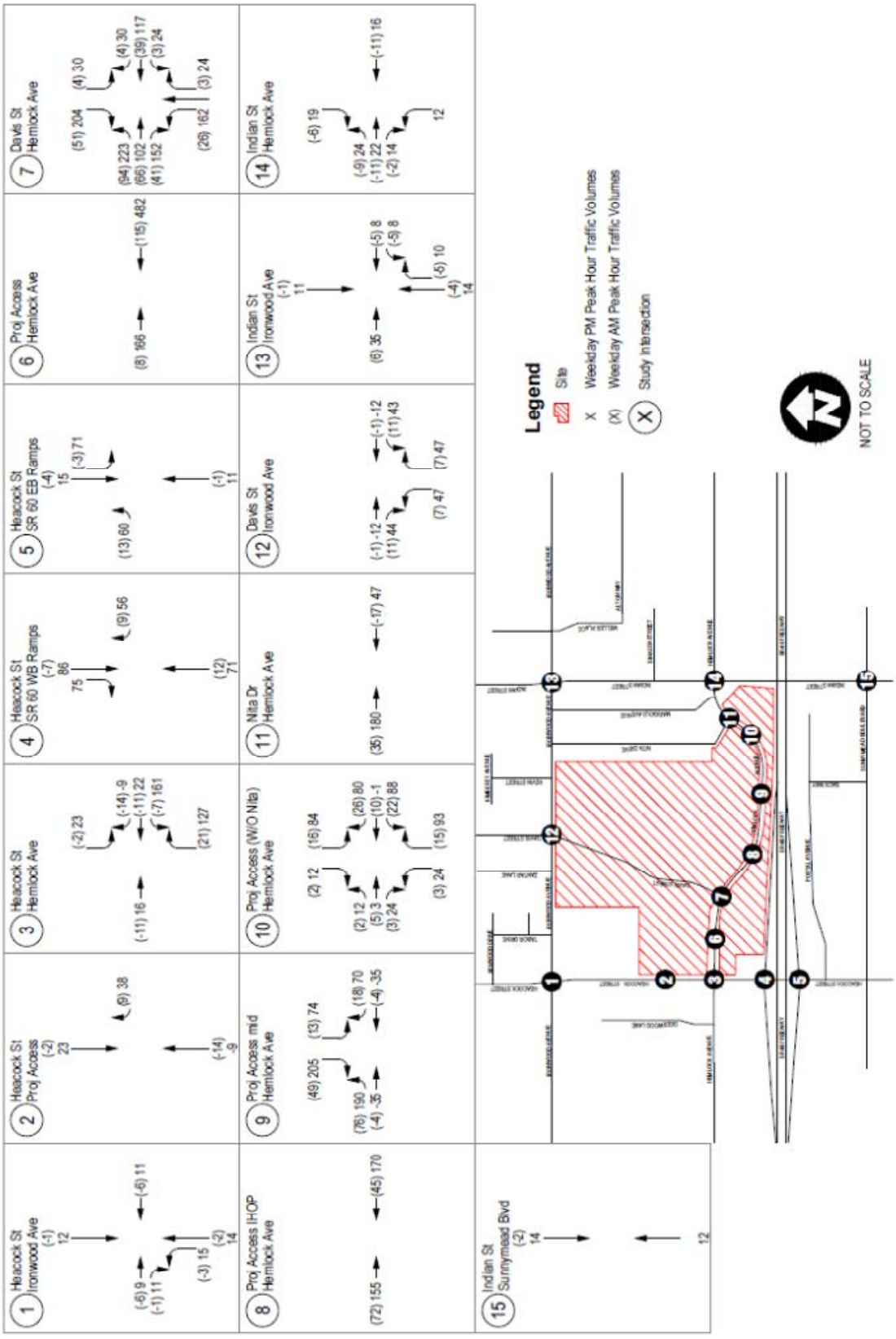


EXHIBIT 3-20
PROJECT TRIP ASSIGNMENT

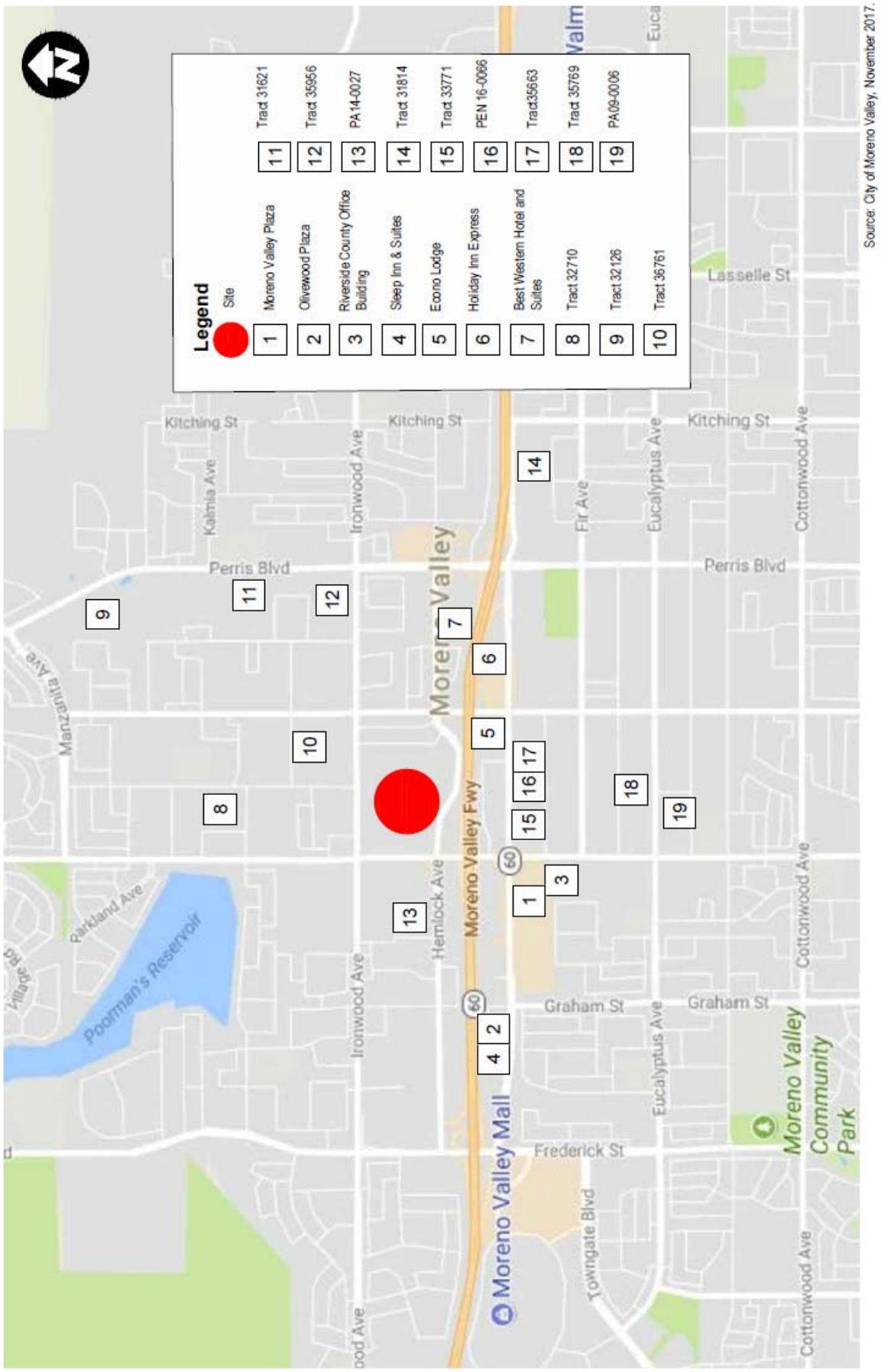


EXHIBIT 3-21
CUMULATIVE PROJECTS (LOCATION MAP)

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

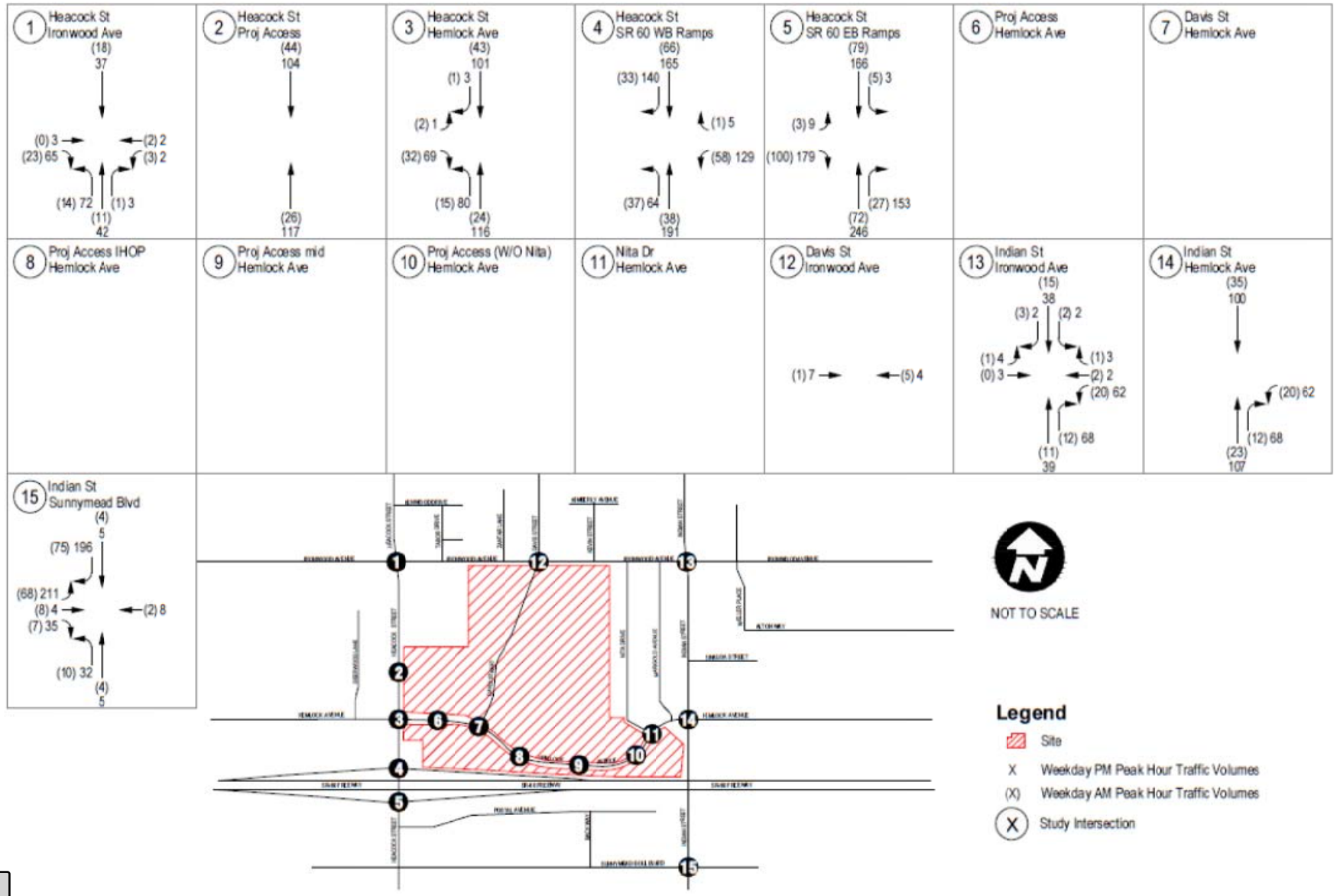


EXHIBIT 3-22
CUMULATIVE PROJECTS TRIP ASSIGNMENT

A "buildup" and "buildout" analysis were carried out as part of this traffic analysis. The "buildup" scenario corresponds to Near Term Year 2022 and was used to approximate the Opening Year Cumulative traffic forecasts. The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast the Near Term Year 2022 background traffic conditions. The Opening Year Cumulative traffic forecasts include background traffic, traffic generated by other cumulative development projects within the study area, and the traffic generated by the proposed project. The 2022 roadway network is similar to the existing conditions roadway network with the exception of future roadways and intersections proposed to be developed by the project. The "build-out" approach is used to forecast the General Plan build-out without and with project conditions of the study area. The Moreno Valley Transportation Analysis Model (based on RivTam) was used for this analysis.[119]

Intersection with-project traffic volumes were obtained by adding the project trip assignments during the AM and PM peak hours to the existing volumes at the intersection. Exhibit 3-23 illustrates the existing with-project traffic volumes at the study area intersections. An intersection operations analysis was conducted for the study area to evaluate the existing with-project weekday AM and PM peak hour conditions with the project. Intersection operations were calculated using the LOS methodology described previously. Table 3-13 provides a comparison between the Existing without and with-project conditions for the weekday AM and PM peak hours.

Table 3-13
Existing and Existing with-Project Peak Hour Intersection LOS

Intersection	Traffic Control	City LOS Standard	Existing				Existing with-Project				Delay Change		Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak					
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	AM	PM	AM	PM
1. Heacock Street/Ironwood Avenue	Signal	LOS D	C	26.9	C	28	C	26.7	C	28.9	-0.2	0.9	NO	NO
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0	A	0	B	10.5	B	12.6	10.5	12.6	NO	NO
3. Heacock Street/Hemlock Avenue	Signal	LOS D	B	18.1	C	21.7	B	17.2	C	30.6	-0.9	8.9	NO	NO
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	21.8	B	19.6	C	21.7	C	22.6	-0.1	3.0	NO	NO
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	21.9	C	21.8	C	21.9	C	23.8	0.0	2.0	NO	NO
6. Project Access/Hemlock Avenue	OWSC	LOS C	A	8.7	A	9.9	A	8.7	A	9.7	0.0	-0.2	NO	NO
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.1	B	13.5	C	18.4	**F**	**1371.9**	7.3	1358.4	NO	**YES**
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.1	B	10	A	9.4	B	11.7	0.3	1.7	NO	NO
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.7	B	10.3	B	10.2	C	18.1	0.5	7.8	NO	NO
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.1	B	11.6	C	22.8	2.4	13.7	NO	NO
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.2	A	9.1	A	9.4	-0.1	0.2	NO	NO
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	25.8	C	33	C	25.9	C	28.4	0.1	-4.6	NO	NO
13. Indian Street/Ironwood Avenue	Signal	LOS D	C	32.1	C	25.9	C	32.0	C	26.3	-0.1	0.4	NO	NO

[119] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

Table 3-13
Existing and Existing with-Project Peak Hour Intersection LOS (continued)

Intersection	Traffic Control	City LOS Standard	Existing				Existing with-Project				Delay Change		Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak					
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	AM	PM	AM	PM
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	22.3	C	22.1	C	21.4	C	23.6	-0.9	1.5	NO	NO
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	21.2	C	27.3	C	21.2	C	27.2	0.0	-0.1	NO	NO

As shown in the Table 3-13, the Davis Street/Hemlock Avenue intersection is forecast to operate at LOS F during the PM peak hour with the project. The addition of project traffic is expected to increase the delay at the intersection leading to a LOS F under Existing with-Project PM peak hour conditions. This increase is considered a significant impact per the City's unsignalized intersection significance criteria (LOS C). Mitigation measures are discussed in the following section. The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization.

Based on the analysis methodology described previously, the existing with-project traffic daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values (presented in Table 3-5) and the existing traffic daily volumes LOS values. Table 3-14 presents the results of the existing with-project roadway segment LOS analysis. Based on the existing with-project roadway segment analysis, all study area roadway segments currently operate with LOS D or better.[120]

Table 3-14
Existing Condition Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT[3]	Existing ADT[1]	Existing V/C Ratio	Existing LOS[2]	Existing with-Project ADT[5]	Existing with-Project V/C Ratio	Existing with Project LOS[2]	V/C Ratio Change	Impact
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	23,701	0.632	B	24,768	0.660	B	0.028	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	26,802	0.715	C	33,124	0.883	D	0.169	No
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	6,632	0.531	A	7,483	0.599	A	0.068	No
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	7,667	0.613	B	8,202	0.656	B	0.043	No
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	15,447	0.412	A	16,299	0.435	A	0.023	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	13,752	0.367	A	14,070	0.375	A	0.008	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	13,016	0.347	A	13,527	0.361	A	0.014	No

[120] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

Table 3-14
Existing Condition Roadway Segment LOS Summary (continued)

Roadway Segment	Existing Classification	Maximum Capacity ADT	Existing ADT	Existing V/C Ratio	Existing LOS	Existing with-Project ADT	Existing with-Project V/C Ratio	Existing with Project LOS	V/C Ratio Change	Impact
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	5,441	0.435	A	6,077	0.486	A	0.051	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	5,832	0.156	A	13,715	0.366	A	0.210	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	5,176	0.414	A	5,812	0.465	A	0.051	No

Traffic volumes for the Near Term Year (2022) without-project (baseline) scenario were obtained by adding existing traffic, ambient growth (assuming 2 percent growth per year) and cumulative traffic volumes. Exhibit 3-24 shows the AM and PM Near Term Year (2022) AM and PM traffic volumes at study area intersections and Table 3-15 illustrates the Peak Hour Level of Service Analysis.

Table 3-15
Near Term Year Without-Project Weekday Peak Hour Intersection LOS

Intersection	Traffic Control	City's LOS Standard	AM Peak		PM Peak	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. Heacock Street/Ironwood Avenue	Signal	LOS D	C	30.3	D	35.1
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0
3. Heacock Street/Hemlock Avenue	Signal	LOS D	C	21.1	C	31.5
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	34.8	**E**	**58.6**
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	34.3	D	42.0
6. (new) Project Access/Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.0
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.5	B	14.2
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.2	B	10.2
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.9	B	10.6
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.2
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.3
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	27.5	D	36.5
13. Indian Street/Ironwood Avenue	Signal	LOS D	D	36.0	C	28.4
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	23.7	C	24.6
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	23.4	**E**	**61.0**

As shown in the table, the Heacock Street/State Route (SR 60) WB Ramps intersection as well as the Indian Street/Sunnymead Boulevard intersection are forecast to operate at LOS E during the PM peak hour with-out the project. Both intersections are considered to be sub-standard per the City's guidelines.[121]

[121] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

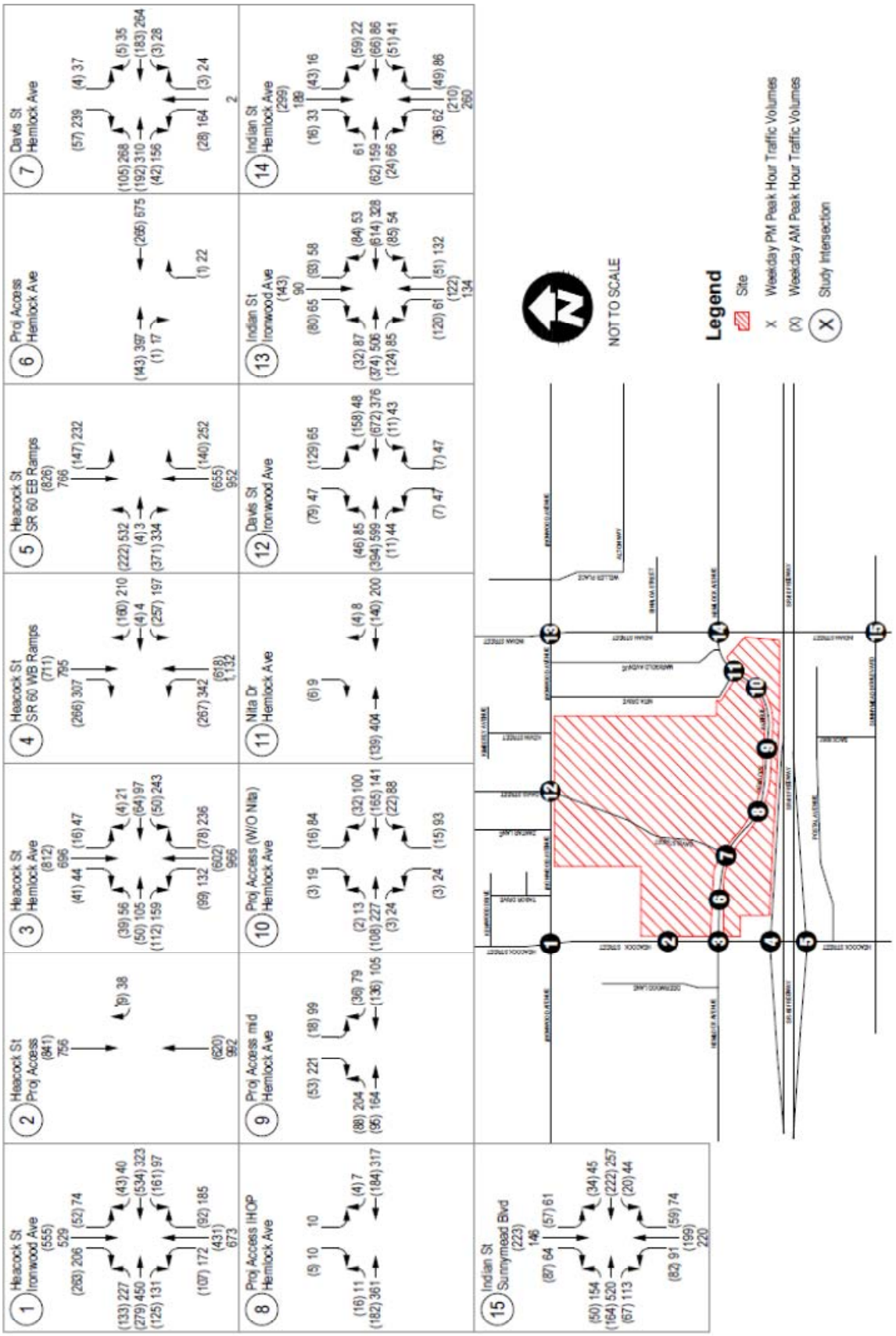


EXHIBIT 3-23
EXISTING WITH-PROJECT PEAK HOUR TRAFFIC VOLUMES

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

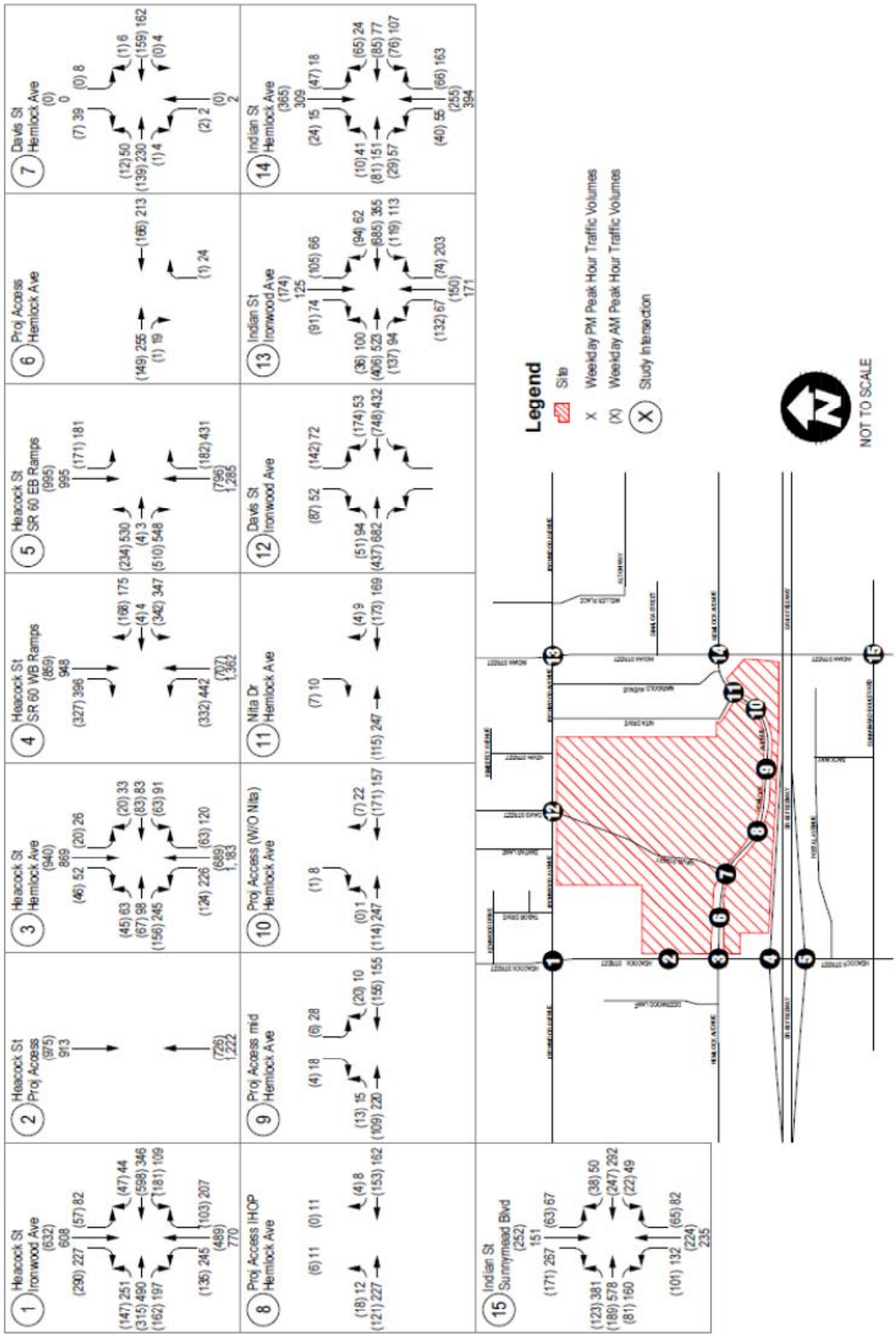


EXHIBIT 3-24

NEAR TERM YEAR (2022) WITHOUT-PROJECT PEAK HOUR TRAFFIC VOLUMES

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table 17 with detailed calculation in Appendix C of the traffic study. As shown in the Appendix, the existing 95th percentile queue lengths exceed storage space under existing with-project conditions.[122] The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization.

Roadway traffic volumes were calculated by adding existing volumes to ambient growth and cumulative projects daily volumes. Based on the analysis methodology described previously, the Near Term Year (2022) without-project traffic daily traffic volumes at the study area roadway segments yield the LOS values illustrated in Table 3-16.

Table 3-16
Near Term Year With-out Project Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT	LOS Standard	ADT	V/C	LOS	Exceeds Threshold?
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	LOS D	29,320	0.782	C	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	LOS D	34,101	0.909	**E**	**Yes**
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	LOS D	9,206	0.737	C	No
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	LOS D	11,507	0.921	**E**	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	LOS C	18,329	0.489	A	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	LOS C	15,284	0.408	A	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	LOS C	15,618	0.416	A	No
8. Hemlock Avenue - West of Heacock Street	Minor Arterial	12,500	LOS C	7,450	0.596	A	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	LOS C	6,439	0.172	A	No
10. Hemlock Avenue - East of Indian Street	Minor Arterial	12,500	LOS C	6,873	0.550	A	No

Based on the Near Term Year (2022) without-project segment analysis, all study area roadway segments currently operate with LOS D or better with the exception of Heacock Street between Hemlock and the SR 60 WB Ramps and Indian Street South of Hemlock Avenue which operate at a LOS E.[123]

Traffic volumes for the Near Term Year (2022) with-project scenario where obtained by adding project traffic volumes to the Near Term (2022) without-project volumes. Exhibit 3-25 shows the AM and PM Near Term Year (2022) with-project AM and PM traffic volumes at study area intersections and Table 3-17 illustrates the Peak Hour intersection Level of Service Analysis.

[122] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[123] Ibid.

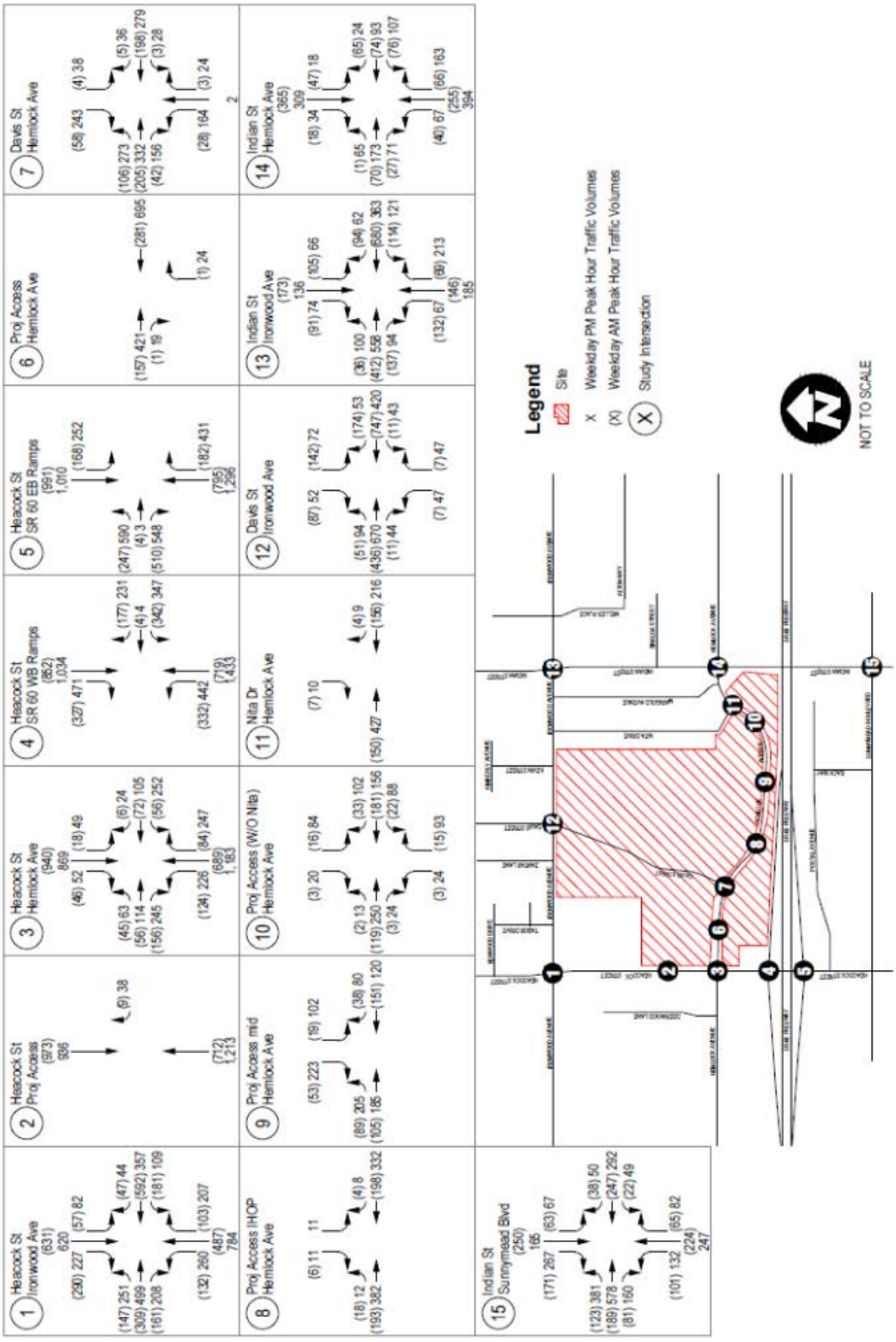


EXHIBIT 3-25

NEAR TERM YEAR (2022) WITH PROJECT PEAK HOUR TRAFFIC VOLUMES

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

Table 3-17
Near Term with-Project Peak Hour Intersection LOS

Intersection	Traffic Control	City LOS Standard	Near Term (2022) without-Project				Near Term (2022) with-Project				Delay Change		Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak					
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	AM	PM	AM	PM
1. Heacock Street/ Ironwood Avenue	Signal	LOS D	C	30.3	D	35.1	C	30.0	D	36.7	-0.3	1.6	NO	NO
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0	B	10.9	B	14.2	10.9	14.2	NO	NO
3. Heacock Street/ Hemlock Avenue	Signal	LOS D	C	21.1	C	31.5	C	20.3	D	46.4	-0.8	14.9	NO	NO
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	34.8	**E**	**58.6**	C	34.4	**F**	**81.1**	-0.4	22.5	NO	**YES**
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	34.3	D	42.0	C	34.2	D	46.1	-0.1	4.1	NO	NO
6. Project Access/ Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.0	A	8.8	B	10.7	0.0	0.7	NO	NO
7. Davis Street/ Hemlock Avenue	TWSC	LOS C	B	11.5	B	14.2	C	19.4	**F**	**1617.9**	7.9	1603.7	NO	**YES**
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.2	B	10.2	A	9.5	B	11.9	0.3	1.7	NO	NO
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.9	B	10.6	B	10.4	C	19.5	0.5	8.9	NO	NO
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.2	B	11.9	C	24.7	2.6	15.5	NO	NO
11. Nita Drive/ Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.3	A	9.2	A	9.5	-0.1	0.2	NO	NO
12. Davis Street/ Ironwood Avenue	Signal	LOS C	C	27.5	D	36.5	C	27.7	**D**	**35.7**	0.2	-0.8	NO	**YES**
13. Indian Street/ Ironwood Avenue	Signal	LOS D	D	36.0	C	28.4	D	35.8	C	29.1	-0.2	0.7	NO	NO
14. Indian Street/ Hemlock Avenue	Signal	LOS D	C	23.7	C	24.6	C	22.9	C	26.2	-0.8	1.6	NO	NO
15. Indian Street/ Sunnymead Boulevard	Signal	LOS D	C	23.4	**E**	**61.0**	C	23.4	**E**	**60.6**	0.0	-0.4	NO	**YES**

As shown in the table, the Heacock Street/State Route (SR 60) WB Ramps intersection as well as the Davis Street/Hemlock Avenue is forecast to operate at LOS F during the PM peak hour with project. Davis Street/Ironwood Avenue are Indian Street/Sunnymead Boulevard are forecast to operate at LOS D and LOS E respectively during the PM peak hour with project. All these intersections are considered to be sub-standard per the City's guidelines.[124]

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table in Appendix C of the traffic study. The existing 95th percentile queue lengths exceed storage space under near term with-project conditions.[125] The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization.

[124] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[125] Ibid.

Based on the analysis methodology described previously, the Near Term Year (2022) with-project traffic daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values and the with-out project traffic daily volumes LOS values.[126] Table 3-18 presents the results of the Near Term Year (2022) with-project roadway segment LOS analysis.

Table 3-18
Near Term Year Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT	Near Term With-out Project ADT	Near Term With-out Project V/C Ratio	Near Term With-out Project LOS	Near Term With Project ADT	Near Term with-Project V/C Ratio	Near Term with-Project LOS	V/C Ratio Change	Impact
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	29,320	0.782	C	30,387	0.810	D	0.028	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	34,101	0.909	E	40,423	1.078	**F**	0.169	**Yes**
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	9,206	0.737	C	10,057	0.805	**D**	0.068	**Yes**
4. Indian Street - South of Hemlock Avenue	Minor Arterial	**12,500**	11,507	0.921	E	12,042	0.963	**E**	0.043	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	18,329	0.489	A	19,181	0.511	A	0.023	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	15,284	0.408	A	15,602	0.416	A	0.008	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	15,618	0.416	A	16,129	0.430	A	0.014	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	7,450	0.596	A	8,086	0.647	B	0.051	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	6,439	0.172	A	14,322	0.382	A	0.210	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	6,873	0.550	A	7,509	0.601	B	0.051	No

Table 3-18 shows that, all study area roadway segments operate with an acceptable LOS except Heacock Street (Hemlock Avenue to SR 60 WB Ramps), Indian Street (Ironwood Avenue to Hemlock Avenue and also South of Hemlock Avenue).[127]

Traffic volumes for the General Plan Buildout Year (2035) without-project (baseline) scenario where obtained from the Moreno Valley Transportation Analysis Model. The model results were post-processed using the 2007 model data, the existing 2017 traffic counts, and the 2035 model outputs. Exhibit 3-26 shows the AM and PM General Plan Buildout Year (2035) without-project AM and PM traffic volumes at study area intersections and Table 3-19 illustrates the Peak Hour Level of Service Analysis.

[126] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[127] Ibid.

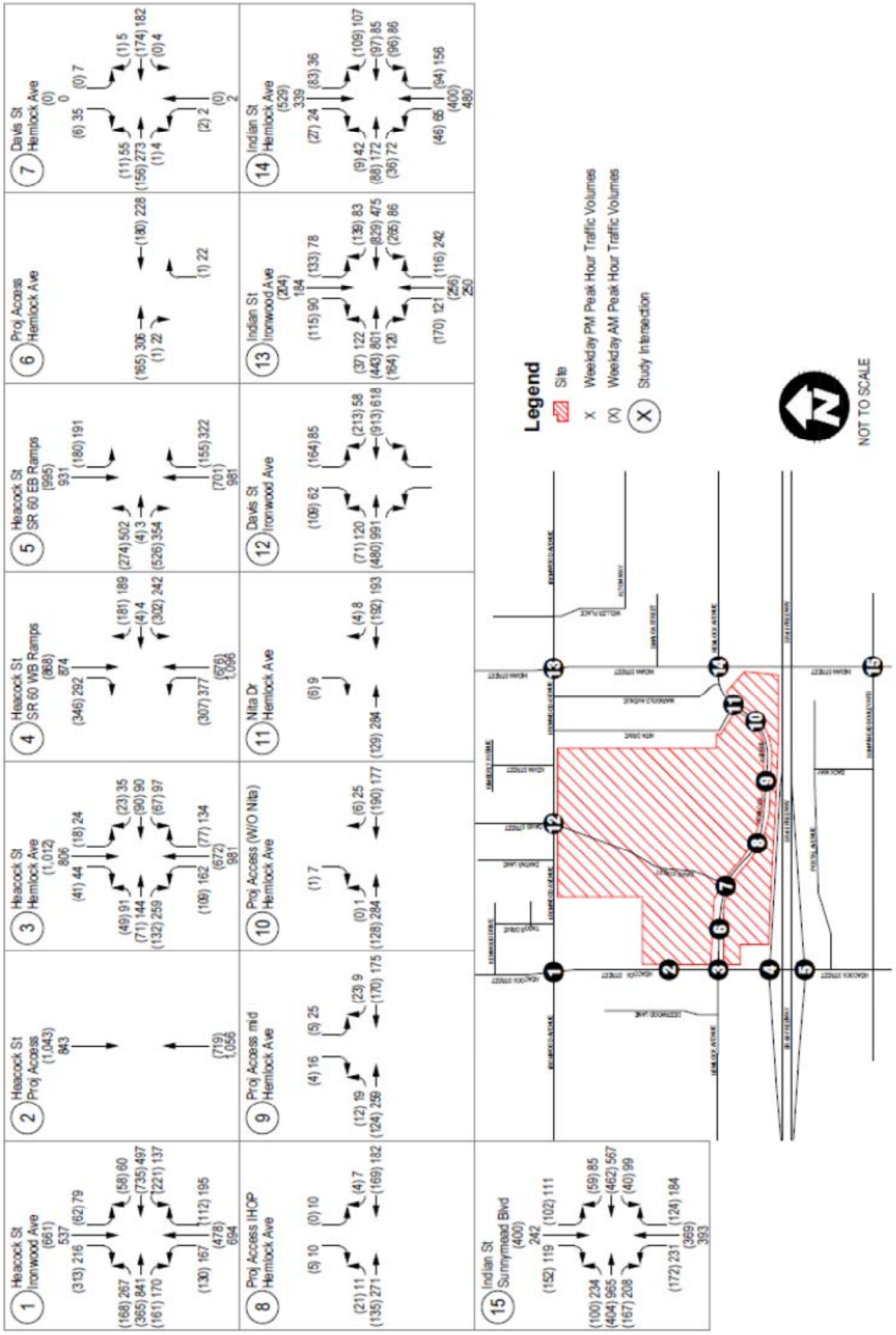


EXHIBIT 3-26

GENERAL PLAN BUILD YEAR WITHOUT PROJECT PEAK HOUR TRAFFIC VOLUMES

Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

Table 3-19
General Plan Build-out Year Without-Project Peak Hour Intersection LOS

Intersection	Traffic Control	City's LOS Standard	AM Peak		PM Peak	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. Heacock Street/Ironwood Avenue	Signal	LOS D	D	35.9	D	37.8
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0
3. Heacock Street/Hemlock Avenue	Signal	LOS D	C	20.6	C	30.9
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	30.2	C	26.9
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	D	37.6	C	23.2
6. (new) Project Access/Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.2
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.8	C	15.5
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.3	B	10.4
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	B	10.0	B	10.9
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.4	A	9.3
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.4	A	9.4
12. Davis Street/Ironwood Avenue	Signal	LOS C	**D**	**37.1**	**D**	**47.1**
13. Indian Street/Ironwood Avenue	Signal	LOS D	**E**	**63.3**	D	38.6
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	33.3	C	32.5
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	**C**	**31.6**	**E**	**74.9**

As shown in the table, the Davis Street/Ironwood Avenue intersection is forecast to operate at LOS D during the AM and PM peak hour with-out the project (City's LOS Standard is C). Indian Street/Ironwood Avenue is forecast to operate at LOS E during the AM peak hour without the project (City's LOS Standard is D). Indian Street/Sunnymead Boulevard is forecast to operate at LOS E during the PM peak hour with-out the project (City's LOS Standard is D).[128]

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Appendix C. The existing 95th percentile queue lengths exceed storage space under Existing with-Project conditions. As mentioned earlier, the 95th percentile queue is not necessarily ever observed, it is simply based on statistical calculations. It is however used by many jurisdictions as the basis for calculating storage lengths.[129] The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization.

Roadway traffic volumes were also obtained from the Moreno Valley Transportation Analysis Model. The model plots are presented in Appendix D. Based on the analysis methodology described previously, the General Plan Buildout Year (2035) without-project traffic daily traffic volumes at the study area roadway segments yield the LOS values illustrated in Table 3-20.

[128] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[129] Ibid.

Table 3-20
General Plan Without Project Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT[3]	LOS Standard[2]	ADT[1]	V/C	LOS	Exceeds Threshold?
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	LOS D	25,951	0.692	B	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	LOS D	31,311	0.835	D	No
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	LOS D	14,795	1.184	**F**	**Yes**
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	LOS D	16,539	1.323	**F**	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	LOS C	22,495	0.600	A	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	LOS C	19,237	0.513	A	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	LOS C	20,601	0.549	A	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	LOS C	5,076	0.406	A	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	LOS C	15,932	0.425	A	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	LOS C	5,642	0.451	A	No

Table 3-20 shows that, all study area roadway segments operate with an acceptable LOS except for Indian Street between Ironwood and Hemlock and south of Hemlock. Traffic volumes for the General Plan Buildout Year (2035) with-project scenario where obtained by adding project traffic volumes to the General Plan Buildout Year (2035) without-project volumes.[130]

Exhibit 3-27 shows the AM and PM General Plan Buildout Year (2035) with-project AM and PM traffic volumes at study area intersections and Table 3-21 illustrates the Peak Hour intersection Level of Service Analysis.

[130] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

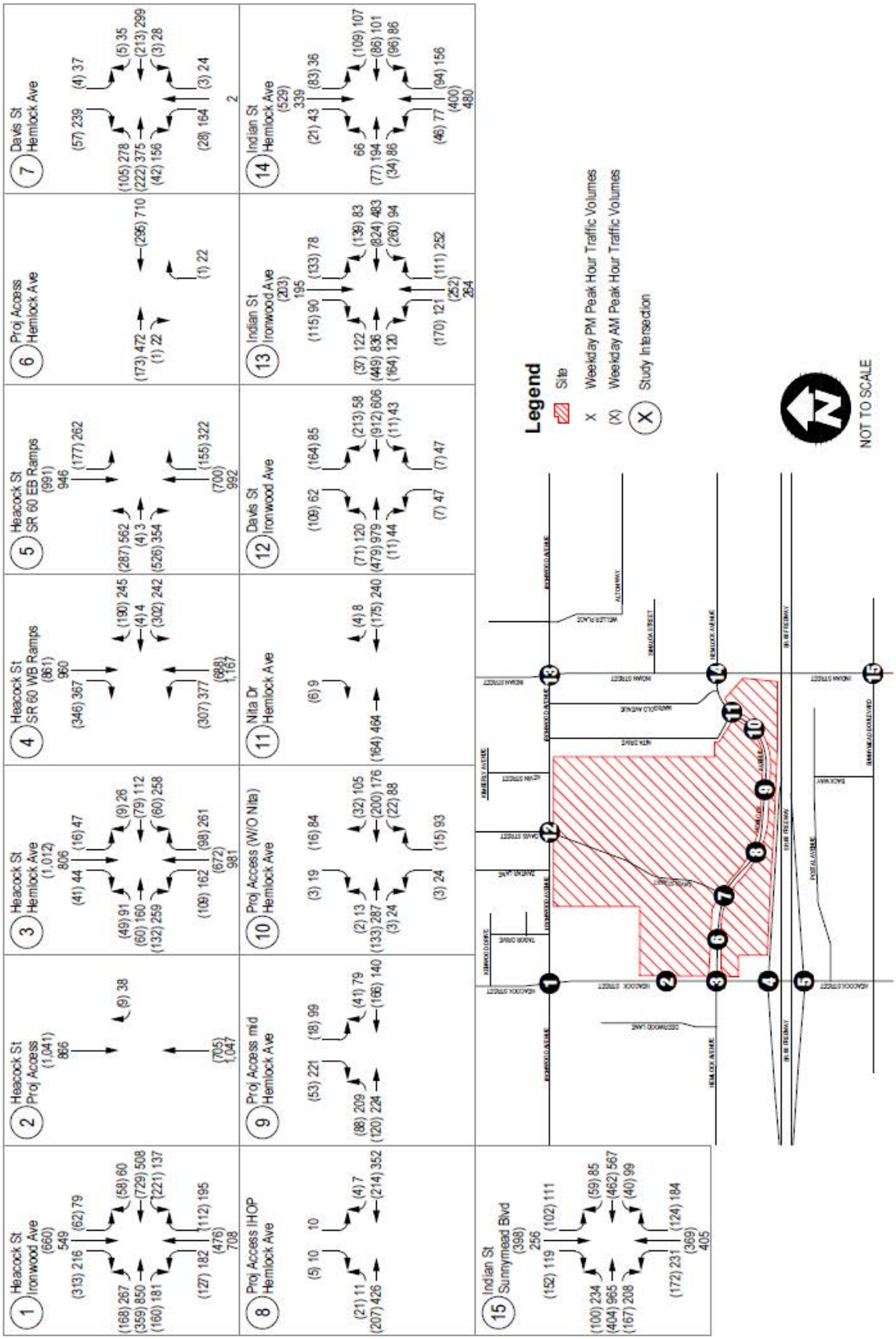


EXHIBIT 3-27
GENERAL PLAN BUILDOUT YEAR WITH-PROJECT PEAK HOUR TRAFFIC VOLUMES
Attachment: Exhibit A - Initial Study and Mitigated Negative Declaration [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

Table 3-21
General Plan Build-out with-Project Peak Hour Intersection LOS

Intersection	Traffic Control	City LOS Standard	General Plan Buildout without-Project				General Plan Buildout with-Project				Delay Change		Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay				
1. Heacock Street/Ironwood Avenue	Signal	LOS D	D	35.9	D	37.8	D	35.5	D	339.0	-0.4	301.2	D	35.9
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0	B	10.9	B	13.0	10.9	13.0	A	0.0
3. Heacock Street/Hemlock Avenue	Signal	LOS D	C	20.6	C	30.9	B	19.8	D	45.5	-0.8	14.6	C	20.6
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	30.2	C	26.9	C	29.9	D	39.1	-0.3	12.2	C	30.2
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	D	37.6	C	23.2	D	37.6	C	25.3	0.0	2.1	D	37.6
6. Project Access/Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.2	A	8.8	B	11.0	0.0	0.8	A	8.8
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.8	C	15.5	C	20.4	**F**	**1997.3**	8.6	1981.8	B	11.8
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.3	B	10.4	A	9.6	B	12.2	0.3	1.8	A	9.3
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	B	10.0	B	10.9	B	10.5	C	20.9	0.5	10.0	B	10.0
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.4	A	9.3	B	12.3	**D**	**28.6**	2.9	19.3	A	9.4
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.4	A	9.4	A	9.3	A	9.7	-0.1	0.3	A	9.4
12. Davis Street/Ironwood Avenue	Signal	LOS C	**D**	**37.1**	**D**	**47.1**	**D**	**37.5**	**D**	**47.4**	0.4	0.3	D	37.1
13. Indian Street/Ironwood Avenue	Signal	LOS D	**E**	**63.3**	D	38.6	**E**	**62.0**	D	41.6	-1.3	3.0	E	63.3
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	33.3	C	32.5	C	31.9	C	35.0	-1.4	2.5	C	33.3
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	31.6	**E**	**74.9**	C	31.6	**E**	**74.6**	0.0	-0.3	C	31.6

As shown in the table, the Davis Street/Hemlock Avenue intersection is forecast to operate at LOS F during the PM peak hour with project. Davis Street/Ironwood Avenue, Ironwood Avenue/Indian Street and Indian Street/Sunnymead Blvd are also forecast to operate at sub-standard levels of services during the peak hour periods with project.[131]

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Appendix C of the traffic study. The existing 95th percentile queue lengths exceed storage space under the General Plan with-Project conditions.[132]

[131] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[132] Ibid.

The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization.[133]

Based on the analysis methodology described previously, the General Plan Buildout Year (2035) with-project traffic daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values in Table 3-5 and the with-out project traffic daily volumes LOS values. Table 3-22 presents the results of the General Plan Buildout Year (2035) with-project roadway segment LOS analysis.

Table 3-22
General Plan Buildout Condition Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT	Buildout With-out Project ADT	Buildout With-out Project V/C Ratio	Buildout With-out Project LOS[2]	Buildout With Project ADT[5]	Buildout with-Project V/C Ratio	Buildout with-Project LOS	V/C Ratio Change	Impact
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	25,951	0.692	B	27,018	0.720	C	0.03	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	31,311	0.835	D	37,633	1.004	F	0.17	**Yes**
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	14,795	1.184	**F**	15,646	1.252	F	0.07	**Yes**
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	16,539	1.323	**F**	17,074	1.366	F	0.04	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	22,495	0.600	A	23,347	0.623	B	0.02	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	19,237	0.513	A	19,555	0.521	A	0.01	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	20,601	0.549	A	21,112	0.563	A	0.01	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	5,076	0.406	A	5,712	0.457	A	0.05	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	15,932	0.425	A	23,815	0.635	B	0.21	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	5,642	0.451	A	6,278	0.502	A	0.05	No

Based on the capacity analysis, all study area roadway segments operate with an acceptable LOS except for Indian Street (south and north of Hemlock) as well as Heacock St between Hemlock Ave and SR-60 westbound Ramps.[134]

[133] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[134] Ibid.

Based on the traffic analysis presented in the earlier sections, the following four intersections were observed to perform at a LOS below the City's standards:[135]

- Davis Street and Hemlock Avenue under all with-Project scenarios in the PM Peak Hour. A warrant analysis was performed for this intersection and it was found that it does not meet the warrant conditions for signalization under the current geometric configuration. Adding lanes (with at least two lanes on each approach) still yields a LOS D versus the City's standard of LOS C.

- Heacock Street and SR 60 westbound ramps under near term with-project scenario in the PM Peak Hour.

- Davis Street and Ironwood Avenue under the near term PM peak hour scenarios and the General Plan AM and PM peak scenarios.

- Indian Street and Sunnymead Blvd under the near term PM peak and the General Plan PM peak hour scenarios.

As a result, the following mitigation is required:[136]

- For the Heacock Street and Westbound SR-60 ramps, the Applicant must optimize the cycle length (90 second cycle length), splits, and offsets and restripe the defacto right-turn lane to a southbound right-turn lane with 50-foot storage and a southbound through lane. This mitigation will improve the LOS to C;

- The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Davis Street and Ironwood Avenue. This mitigation will yield a LOS B;

- The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Indian Street and Sunnymead Boulevard. This mitigation will yield a LOS C.

Based on the queuing analysis, Table 3-23 presents a set of recommended measures to address storage lengths at the various approaches of the study area intersections. It is important to note that much of the analysis is based on the 95th percentile queue lengths which has a low (5%) probability of occurring.[137]

[135] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[136] Ibid.

[137] Ibid.

Table 3-23
General Plan Build-out With-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	Maximum Queue Length[1] (ft)	Proposed Mitigation
1. Heacock Street/Ironwood Avenue	EBL	90	149	Restripe left turn lanes to provide 150ft storage to accommodate 95th percentile queues.
	WBL	135	189	Restripe left turn lanes to provide 190ft storage to accommodate 95th percentile queues.
	NBL	140	208	Restripe left turn lanes to provide 210ft storage to accommodate 95th percentile queues.
3. Heacock Street/Hemlock Avenue	EBL	70	104	Restripe left turn lanes to provide 105ft storage to accommodate 95th percentile queues.
	NBL	100	170	Restripe left turn lanes to provide 170ft storage to accommodate 95th percentile queues.
	SBL	95	148	Restripe left turn lanes to provide 150ft storage to accommodate 95th percentile queues.
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	264	A storage lane is provided south of the Heacock/ SR60 EB ramps intersection. No further mitigation is recommended.
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	272	Length of the left turn lane is over 600ft. No further mitigation is recommended.
	SBL	190	232	Restripe 50ft of the TWLT lane north of the Heacock/ SR60 WB ramps intersection as “Freeway Only” lane.
12. Davis Street/Ironwood Avenue	EBL	150	219	Restripe left turn lanes to provide 220ft storage to accommodate 95th percentile queues.
	SBL	40	141	Restripe left turn lanes to provide 145ft storage to accommodate 95th percentile queues.
13. Indian Street/Ironwood Avenue	EBL	95	142	Restripe left turn lanes to provide 145ft storage to accommodate 95th percentile queues.
	WBL	100	140	Restripe left turn lanes to provide 140ft storage to accommodate 95th percentile queues.
	NBL	110	162	Restripe left turn lanes to provide 165ft storage to accommodate 95th percentile queues.
	SBL	80	153	Restripe left turn lanes to provide 155ft storage to accommodate 95th percentile queues.
14. Indian Street/Hemlock Avenue	WBL	80	109	Restripe left turn lanes to provide 110ft storage to accommodate 95th percentile queues.
	NBL	145	177	Restripe left turn lanes to provide 180ft storage to accommodate 95th percentile queues.
15. Indian Street/Sunnymead Boulevard	EBL	90	138	Restripe left turn lanes to provide 140ft storage to accommodate 95th percentile queues. This might require replacing the concrete island with stripping.
	WBL	100	114	Restripe left turn lanes to provide 115ft storage to accommodate 95th percentile queues.
	NBL	145	197	Restripe left turn lanes to provide 200ft storage to accommodate 95th percentile queues.
	SBL	90	126	Restripe left turn lanes to provide 125ft storage to accommodate 95th percentile queues.

As shown in Table 3-23 the following mitigation measures are required:

- For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues;
- For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 190 feet of storage to accommodate 95th percentile queues;
- For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 210 feet of storage to accommodate 95th percentile queues;
- For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 105 feet of storage to accommodate 95th percentile queues;
- For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 170 feet of storage to accommodate 95th percentile queues;
- For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues;
- For the Heacock Street/State Route (SR 60) eastbound ramps, the Applicant must restripe 50 feet of the two-way left turn lane north of the Heacock/ SR-60 westbound ramps intersection as a "Freeway Only" lane;
- For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 220 feet of storage to accommodate 95th percentile queues;
- For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 145 of feet storage to accommodate 95th percentile queues;
- For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 145 feet of storage to accommodate 95th percentile queues;
- For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues;
- For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 165 feet of storage to accommodate 95th percentile queues;
- For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 155 feet of storage to accommodate 95th percentile queues;
- For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 110 feet of storage to accommodate 95th percentile queues;

- For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 180 feet of storage to accommodate 95th percentile queues;

- For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the eastbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues. This might require replacing the concrete island with stripping;

- For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the westbound left turn lanes to provide 115 feet of storage to accommodate 95th percentile queues;

- For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the northbound left turn lanes to provide 200 feet of storage to accommodate 95th percentile queues; and,

- For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the southbound left turn lanes to provide 125 feet of storage to accommodate 95th percentile queues.[138]

Adherence to the mitigation provided above will reduce potential impacts to levels that are less than significant.

B. *Would the project result in a conflict with an applicable congestion management program, including but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways? ● Less than Significant Impact.*

The Congestion Management Program (CMP) was first established in 1990 under Proposition 111. Proposition 111 established a process for each metropolitan county in California to designate a Congestion Management Agency (CMA) that would be responsible for development and implementation of the CMP within county boundaries. The Riverside County Transportation Commission (RCTC) was designated as the CMA in 1990, and therefore, prepares the CMP updates in consultation with the Technical Advisory Committee (TAC), which consists of local agencies, the County of Riverside, transit agencies, and sub regional agencies.

The intent of the CMP is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related impacts, and improve air quality. Counties within California have developed CMPs with varying methods and strategies to meet the intent of the CMP legislation. The Riverside County CMP was significantly modified in 1997 to focus on federal Congestion Management System (CMS) requirements as well as incorporate elements of the State CMP requirements. The 1997 CMP also focused on development of an Enhanced Traffic Monitoring System in which real-time traffic count data can be accessed by RCTC to evaluate the condition of the CMS, as well as meet other monitoring requirements at the state and federal levels. This monitoring effort was completed in 2004, which consisted of installing Smart Call Boxes (traffic counters in Call Box equipment) and traffic counters at Caltrans' Traffic

[138] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

Management Center (TMC) sites along the state highway system. Monitoring of the CMP system on local arterials will continue to occur through the Coachella Valley Association of Governments' (CVAG) monitoring program and through local agency monitoring efforts in Western Riverside County. RCTC's adopted minimum Level of Service (LOS) threshold is LOS "E". Therefore, when a CMP street or highway segment falls to "F", a deficiency plan must be required. Preparation of a deficiency plan will be the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency will also be required to coordinate with the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management (TDM) strategies and transit alternatives, and a schedule for mitigating the deficiency.[139]

A list of CMP arterials and highways is presented in Table 2-1 of the 2011 Riverside County Congestion Management Program.[140] According to the Traffic Study prepared for the proposed project, the project will not affect any CMP monitored arterial or highway to the extent that would require the completion of a deficiency plan.[141] As a result, the potential impacts will be less than significant.

C. *Would the project results in a change in air traffic patterns, including either an increase in traffic levels or a change in the location that results in substantial safety risks? ● No Impact.*

The development contemplated under the Moreno Valley Festival Specific Plan will not result in a change or disturbance in traffic air traffic patterns. As a result, no impacts will result.[142]

D. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ●Less than Significant Impact.

The mitigation provided in subsection 3.16.2.A will improve intersection performance and safety. This mitigation will also improve site access. Trucks travelling to and from the project site will not travel down local residential streets. All trucks will be required to use existing truck routes. The Specific Plan Amendment contains minimum distance requirements for street trees and landscaping. These distance requirements will ensure that no trees obstruct the line-of-sight between a driveway and the adjacent roadways. Trees will be planted on each side of the street within the 12 foot parkway. Examples of the requirements include the following:

- All trees shall be planted at least 10 feet from sidewalks and driveways; and,
- A minimum of 25 feet shall be allowed from any street intersection or street lighting standard, and shall defer to line of sight requirements for distance from intersection per Public Works Standard No. 125 and 126). (Ord. 786 § 2, 2009).

[139] Riverside County Transportation Commission. *2011 Riverside County Congestion Management Program*. Report dated December 14, 2011.

[140] Ibid.

[141] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[142] P and D Consultants. *Final Environmental Impact Report - City of Moreno Valley General Plan SCH# 200091075*. Report dated July 2006.

Adherence to the design guidelines contained in the Specific Plan Amendment will reduce potential impacts to levels that are less than significant.

E. Would the project result in inadequate emergency access? ● No Impact.

The future development supported by the Moreno Valley Festival Specific Plan would comply with applicable regulations established by the Riverside County Fire Department and the Moreno Valley Division of Building and Safety, in addition to the standard design requirements of the Uniform Building Code. The Fire Department will review any development plan including all buildings, fences, drive gates, or other features that might affect Fire Department access. This review process, along with the proponent's compliance with the applicable regulations and standards, would ensure that adequate emergency access would be provided. Therefore, no impacts will occur.

F. Would the project result in a conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? ● Less than Significant Impact.

Characteristics of the existing street system in the proposed project vicinity are summarized in Table 3-24. The roadway classifications are as per the City of Moreno Valley General Plan Circulation Element. Cross-sections described are those in the vicinity of the project and they might vary at intersections to accommodate turning lanes.[143]

Heacock Street is a muti-modal corridor with pedestrian, bicycle, auto, and transit uses. It is also designated as a truck route while at the same time having Class 2 bicycle lanes on both sides between Ironwood Avenue and the SR-60 ramps. Riverside Transit Agency (RTA) Bus 11 runs on Heacock Street south of Hemlock Avenue, Hemlock Avenue, and Ironwood Avenue. Bus stops are in the vicinity of the Hemlock/Davis, Hemlock/Indian, Indian/Ironwood, and Ironwood/Heacock intersections. Service frequencies are about one bus every hour on both weekdays and weekends.

Bicycle lanes described in Table 3-24 are as per the City's Bicycle Master Plan. Class 2 paths are on-street paths that are located along the edge of a street with a striped lane denoting this bike path. Class 3 paths also are located along a street edge, but are not striped. These paths are identified by street signs only.[144]

[143] Transpogroup. *Draft Traffic Impact Analysis – Festival at Moreno Valley*. Report dated December 2017.

[144] Ibid.

Table 3-24
Street Characteristics

	Heacock St	Ironwood Ave	Indian St	Hemlock Ave	Davis St
Classification	Arterial	Minor Arterial	Minor Arterial	-	-
Traffic Cross-section	4 lanes + TWLT	4 lanes + TWLT	2 lanes	Varies[3]	2 lanes + TWLT[4]
Posted Speed Limit	35	40	35	30	-
Truck Route	Yes	Yes[5]	No	No	No
Transit	RTA 11	RTA 11	-	RTA 11	-
Bicycle Lanes	Class 2	Class 3	Class 3	-	-
Sidewalks	Both Sides	Both Sides	SB Only	Both Sides	Both Sides

To estimate potential transit use, the project's trip generation (without the pass-by reduction) was adjusted by values set forth in the CMP (i.e., person trips equal 1.4 times vehicle trips, and transit trips equal 3.5 percent of the total person trips) to estimate transit trip generation. Pursuant to the CMP guidelines, the proposed project is forecast to generate demand for two transit trips during the weekday AM peak hour and four transit trips during the weekday PM peak hour. Over a 24-hour period, the proposed project is forecast to generate demand for 737 weekday daily transit trips. The calculations are as follows:

- Weekday AM Peak Hour = 68 × 1.4 × 0.035 = 19 transit patron trips;
- Weekday PM Peak Hour = 40 × 1.4 × 0.035 =49 transit patron trips; and,
- Weekday Daily Trips = 548 × 1.4 × 0.035 = 737 transit patron trips.

Therefore, given the number of transit trips generated by the project and the existing transit routes in the project vicinity, it is concluded that the existing public transit system would not be significantly impacted by the proposed project and any potential impacts are expected to be less than significant. The project's implementation will not require the removal of the existing bicycle lanes. Furthermore, no pedestrian facilities (sidewalks, crosswalks, etc) will be removed to accommodate the project. As a result, the potential impacts are considered to be less than significant.

3.16.3 MITIGATION MEASURES

The traffic report indicated that the following mitigation measures will be required:

Mitigation Measure No. 29 (Transportation & Circulation Impacts). For the Heacock Street and Westbound SR-60 ramps, the Applicant must optimize the cycle length (90 second cycle length), splits, and offsets and restripe the defacto right-turn lane to a southbound right-turn lane with 50-foot storage and a southbound through lane. This mitigation will improve the LOS to C;

Mitigation Measure No. 30 (Transportation & Circulation Impacts). The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Davis Street and Ironwood Avenue. This mitigation will yield a LOS B;

Mitigation Measure No. 31 (Transportation & Circulation Impacts). The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Indian Street and Sunnymead Boulevard. This mitigation will yield a LOS C.

Mitigation Measure No. 32 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 33 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 190 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 34 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 210 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 35 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 105 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 36 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 170 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 37 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 38 (Transportation & Circulation Impacts). For the Heacock Street/State Route (SR 60) eastbound ramps, the Applicant must restripe 50 feet of the two-way left turn lane north of the Heacock/ SR-60 westbound ramps intersection as a "Freeway Only" lane;

Mitigation Measure No. 39 (Transportation & Circulation Impacts). For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 220 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 40 (Transportation & Circulation Impacts). For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 145 of feet storage to accommodate 95th percentile queues;

Mitigation Measure No. 41 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 145 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 42 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 43 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 165 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 44 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 155 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 45 (Transportation & Circulation Impacts). For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 110 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 46 (Transportation & Circulation Impacts). For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 180 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 47 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the eastbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues. This might require replacing the concrete island with stripping;

Mitigation Measure No. 48 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the westbound left turn lanes to provide 115 feet of storage to accommodate 95th percentile queues;

Mitigation Measure No. 49 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the northbound left turn lanes to provide 200 feet of storage to accommodate 95th percentile queues; and,

Mitigation Measure No. 50 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the southbound left turn lanes to provide 125 feet of storage to accommodate 95th percentile queues.

3.17 TRIBAL CULTURAL RESOURCES

3.17.1 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project may be deemed to have a significant adverse impact on tribal cultural resources if it results in any of the following:

- A substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the

California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).

- A substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is a resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the Lead Agency shall consider the significance of the resource to a California Native tribe.

3.17.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project cause a substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? ● Less than Significant Impact.

A Tribal Resource is defined in Public Resources Code section 21074 and includes the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: included or determined to be eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

- A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

- A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

As part of the AB-52 consultation with the tribal representatives, review of the project was completed. AB-52 consultation was mailed out to seven individuals indentified by the NAHC. The project team has received five responses from various tribes including the San Manuel Band of Mission Indians; the Morongo Band of Mission Indians; the Soboba Band of Luiseno Indians; the Pechanga Band of Luiseno

Indians; and the Rincon Band of Luiseño Indians. The tribes each requested consultation and separate mitigation measures. As a result, the project team contacted Mrs. Gayle Totton, Associate Governmental Program Analyst for the Native American Heritage Commission. According to Mrs. Totton, when conflicting mitigation is provided by different tribes, it is ultimately up to the lead agency to determine which mitigation to use. The decision to use a particular mitigation over another must be clarified in the Tribal Cultural Resources Section of an MND/EIR.

The mitigation provided in Subsection 3.5.2.B was drafted by the City of Moreno Valley in coordination with the Pechanga and the Soboba. This mitigation was ultimately selected because it is comprehensive and calls for an archaeologist to monitor all mass grading and trenching activities. A summary of the AB-52 responses is provided in Appendix E. Adherence to the aforementioned mitigation will minimize the potential impacts to levels that are less than significant.

Two of the responses to the AB-52 consultation, Morongo Band of Mission Indians and the Rincon Band of Luiseño Indians requested that a copy of the Cultural Resources Report that included the results of a records search at the Riverside County Archaeological Information Center (AIC) at the University of California, Riverside. A comprehensive survey of the entire City was undertaken as part of the Citywide General Plan Update which included the preparation of an Environmental Impact Report and Master Environmental Assessment. The General Plan EIR included a citywide inventory of both historic and archaeological resources. The proposed project site was not identified as being either historically or culturally significant and the California Historic Resources Inventory Search (CHRIS) for the City. The citywide inventory is included in Appendix E. The mitigation identified in Section 3.5.2.B will mitigate any potentially significant impacts related to the disturbance of soils and the potential impact on cultural resources.

B. *Would the project cause a substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is a resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the Lead Agency shall consider the significance of the resource to a California Native tribe? ● Less than Significant Impact.*

As part of the AB-52 consultation with the tribal representatives, review of the project was completed. AB-52 consultation was mailed out to seven individuals indentified by the NAHC. The project team has received five responses from various tribes including the San Manuel Band of Mission Indians; the Morongo Band of Mission Indians; the Soboba Band of Luiseno Indians; the Pechanga Band of Luiseno Indians; and the Rincon Band of Luiseño Indians. The tribes each requested consultation and separate mitigation measures. The mitigation provided in Subsection 3.5.2.B was drafted by the City of Moreno Valley in coordination with the Pechanga and the Soboba. This mitigation was ultimately selected because it is comprehensive and calls for an archaeologist to monitor all mass grading and trenching activities. A

summary of the AB-52 responses is provided in Appendix E. Adherence to the aforementioned mitigation will minimize the potential impacts to levels that are less than significant.

3.17.3 MITIGATION MEASURES

According to the City's General Plan EIR, at least 190 prehistoric archaeological locations have been reported within the City of Moreno Valley. Approximately 29 acres (excluding the 12.9-acre stormwater detention basin) of the Specific Plan Amendment Planning Area is presently undeveloped. Therefore, there is a possibility that mass grading and trenching operations could unearth previously unidentified tribal resources. The possibility of encountering tribal resources was taken into account during the consultation with the Pechanga and the Soboba. As a result, mitigation was provided in Subsection 3.5.2.B to minimize the risk of disturbance to tribal cultural resources.

3.18 UTILITIES IMPACTS

3.18.1 THRESHOLDS OF SIGNIFICANCE

According to the City of Moreno Valley, acting as Lead Agency, a project may be deemed to have a significant adverse impact on utilities if it results in any of the following:

- An exceedance of the wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- The construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts;
- The construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- An overcapacity of the storm drain system causing area flooding;
- A determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand;
- The project will be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Non-compliance with federal, state, and local statutes and regulations relative to solid waste;
- A need for new systems, or substantial alterations in power or natural gas facilities; or,
- A need for new systems, or substantial alterations in communications systems.

3.18.2 ANALYSIS OF ENVIRONMENTAL IMPACTS

A. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? ● Less than Significant Impact.

Wastewater service in Moreno Valley is provided by the Eastern Municipal Water District (EMWD), which serves most of the City and surrounding areas, and the Edgemont Community Services District, which provides service to a small area in southwestern Moreno Valley. The EMWD operates over 356 miles of sewer mains (12 inches and above) and six sewage lift stations to provide wastewater collection services within the City. All wastewater is collected and conveyed to the Moreno Valley Regional Water Reclamation Facility (MVRWRF) located in the southwestern portion of the City. The MVRWRF presently handles 10.6 million gallons per day. The facility has a capacity of 16 million gallons per day, with a maximum capacity of 41 million gallons per day. This facility has the ability to divert about 2 million gallons per day to the Perris facility.

The primary trunk sewer line serving the Moreno Valley Festival area is located in Heacock Street. This trunk sewer line continues in a southerly direction in Heacock Street and the east along Mariposa Avenue conveying wastewater to the MVRWRF. As individual projects are proposed, review of the local sewer lines' capacity will be undertaken. A preliminary analysis of the amount of sewage that will be generated by the development envisioned under the Specific Plan is included in Table 3-25. According to the Table, future development is anticipated to result in the generation of 65,792 gallons of wastewater per day.

Table 3-25
Wastewater (Effluent) Generation (gals/day)

Use	Unit	Factor	Generation
Business Park	348,000 sq.ft.	0.11 gal/day/sq.ft	39,532 gals/day
Retail/Mix of Uses	325,000 sq.ft.	0.08 gal/day/sq.ft	26,260 gals/day
Total	**673,000 sq.ft.**		**65,792 gals/day**

Source: Blodgett Baylosis Environmental Planning.

As indicated previously, a review of the local sewer lines will be completed as individual projects are proposed. The Eastern Municipal Water District (EMWD) may then recommend mitigation including but not limited to the expansion or replacement of the existing sewer lines. As a result, the potential impacts are expected to be less than significant.

B. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts? ● Less than Significant Impact.

Eastern Municipal Water District (EMWD) provides water service to the Moreno Valley Festival, receiving its water from Metropolitan Water District (MWD) and local groundwater wells. Future development undertaken within the Planning Area will have adequate water supply from Eastern Municipal Water District. There is an existing 16 inch water main along Hemlock Avenue, a 16 inch water main along Davis

Street, and a 12 inch water main passes through current Festival Development.[145] The implementation of the Specific Plan and any subsequent development that may result will not require the construction of new water treatment facilities or the expansion of existing facilities. The amount of water that will be consumed by the development envisioned under the Specific Plan will be adequately handled by the EMWD (refer to subsection 3.18.2.D).

Furthermore, there is adequate treatment capacity available at the Moreno Valley Regional Water Reclamation Facility (MVRWRF). The MVRWRF presently handles 10.6 million gallons per day. The Facility has a capacity of 16 million gallons per day, with a maximum capacity of 41 million gallons per day.[146] This Facility has the ability to divert about two million gallons per day to the Perris facility. Therefore, the implementation of the Specific Plan and the development of the land uses envisioned under the Specific Plan will not require the construction of new wastewater treatment facilities or the expansion of existing facilities. As a result, the potential impacts are expected to be less than significant.

C. *Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ● Less than Significant Impact.*

The Moreno Valley Festival Specific Plan area is within the Middle and Lower San Jacinto River watershed which is part of the larger Santa Ana River watershed. The stormwater runoff within the Sunnymead Drainage Area generally flows in a southeasterly direction and the subarea boundary ends at the Perris Valley Storm Drain. The Riverside County Flood Control and Water Conservation District (RCFCWCD) is the responsible agency for the project area's regional flood control system. The Planning Area flanks an existing City-owned detention basin located in the eastern portion of the Planning Area. An earthen channel extends southeast which collects stormwater runoff north of Ironwood Avenue and conveys this water through the corner of Ironwood Avenue and Heacock Boulevard before ultimately discharging to the aforementioned detention basin. There are two 102 inch Storm Drain Lines that extend along Ironwood Avenue and south along Davis Street which also discharge to the detention basin. The detention basin outlet is conveyed by a 12 foot by 4.5 foot Reinforced Concrete Box which connects to Perris Storm Drain and discharges into Canyon Lake. The watershed drainage continues southwest to Lake Elsinore downstream and eventually flows northwest to the Santa Ana River.[147]

The implementation of the Specific Plan will result in an increase in the amount of impervious surfaces within the Planning Area. In the absence of mitigation, the impervious surfaces (internal driveways, parking areas, etc.) that would be constructed as part of the site's development could lead to the presence of debris, leaves, soils, oil/grease, and other pollutants within the vicinity. Thus, future development proposals must include Water Quality Management Plan (WQMP). The WQMP shall include measures designed to control pollutants, pollutant loads, and runoff volume to the maximum extent feasible by minimizing impervious surface area and controlling runoff from impervious surfaces through infiltration, evapotranspiration, bioretention, and/or rainfall harvest and use. The project applicant shall prepare a

[145] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

[146] Eastern Municipal Water District. *Moreno Valley Regional Water Reclamation Facility*. https://www.emwd.org/home/showdocument?id=1423

[147] National Engineering Consultants. *Amendment to Specific Plan 205*. Draft dated December 29th, 2015.

WQMP which implements set standards and practices for stormwater pollution mitigation and provides documentation to demonstrate compliance with the municipal NPDES permit on the plans and permit application submitted to the City.

Additional storm drain improvements will need to be added for the project. A system of underground drainage lines and detention basins will convey the storm water runoff and manage the increased flow due to the proposed development. At each stage of development, the peak flows at downstream discharge points at the southerly project boundary will not exceed the peak flows for the existing condition.

Prior to approval of any subdivision or Plot Plan including or adjacent to the detention basin, a concept plan for the entire drainage feature shall be submitted to and approved by the City. The concept plan shall include proposed grading, improvements, landscaping, drainage facilities, signage, vehicular/pedestrian access, and any other proposed improvements. Site specific projects shall be consistent with this concept plan. The construction of new storm drains and stormwater BMPs would not cause any adverse impacts to the environment that have not already been analyzed in this document. Since the inclusion of site specific BMPs is mandatory, these BMPs are included in the overall analysis of future development. As a result, the potential impacts are considered to be less than significant.

D. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? ● Less than Significant Impact.

As indicated previously, the EMWD provides potable water, recycled water, and wastewater services to an area of approximately 555 square miles in western Riverside County. EMWD is both a retail and wholesale agency, serving a retail population of 546,146 people and a wholesale population of 215,075 people. The majority of EMWD's supplies are imported water purchased through MWD from the State Water Project (SWP) and the Colorado River Aqueduct (CRA). Imported water is delivered to EMWD either as potable water treated by MWD, or as raw water that EMWD can either treat at one of its two local filtration plants or deliver as raw water for non-potable uses.[148]

EMWD's local supplies include groundwater, desalinated groundwater, and recycled water. Groundwater is pumped from the Hemet/San Jacinto and West San Jacinto areas of the San Jacinto Groundwater Basin. Groundwater in portions of the West San Jacinto Basin is high in salinity and requires desalination for potable use. EMWD owns and operates two desalination plants that convert brackish groundwater from the West San Jacinto Basin into potable water.[149]

Table 3-26, shows the projected water demand for the future development envisioned under the Specific Plan. According to the Table, future development is anticipated to consume approximately 82,241 gallons of water on a daily basis, or 91 acre-feet per year.

[148] RMC Water and Environment. *Eastern Municipal Water District 2015 Urban Water Management Plan*. Plan dated June 2016.

[149] Ibid.

Table 3-26
Water Consumption (gals/day)

Use	Unit	Factor	Generation
Business Park	348,000 sq.ft.	0.14 gal/day/sq.ft	49,416 gals/day
Retail/Mix of Uses	325,000 sq.ft.	0.10 gal/day/sq.ft	32,825 gals/day
Total	**673,000 sq.ft.**		**82,241 gals/day**

Source: Blodgett Baylosis Environmental Planning.

According to the 2015 Urban Water Management Plan, demand for water will reach 197,901 acre-feet per year by the year 2020. The EMWD is estimated to have a projected supply of 197,901 acre-feet per year of water. The projected supply of water will be just enough to meet the projected demand. As a result, all future development proposals must include water efficient appliances and fixtures, drought tolerant landscaping, and the use of drip irrigation. These methods of water conservation were reiterated as mitigation in Section 3.7. Thus, the potential impacts are considered to be less than significant.

E. Would the project result in a determination by the provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? ● Less than Significant Impact.

As indicated previously, the project will result in a generation of 65,792 gallons of wastewater per day. The proposed development will connect with an existing sewer line in Davis Street and Hemlock Avenue. The future wastewater generation will be within the treatment capacity of the Moreno Valley Regional Water Reclamation Facility. In addition, this projected effluent generation does not take into account the water conserving plumbing fixtures that will be installed. No new treatment facilities or expanded entitlements will be required. As a result, the impacts are anticipated to be less than significant.

F. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? ● Less than Significant Impact.

According to the City's General Plan, solid waste generated within the planning area is primarily deposited in the Riverside County Waste Management Department's (RCWMD) Badlands Landfill, located approximately 6.43 miles northeast of the Planning Area. However, the City's trash hauler can also use other County landfills in the area such as the Lamb Canyon Landfill and El Sobrante landfill. Waste Management of Inland Empire currently provides waste pickup in Moreno Valley. The Badlands Landfill presently accepts up to 4,800 tons per day of solid waste. This landfill has a remaining capacity of 15,749,799 cubic yards of waste.[150] The El Sobrante Landfill is a Class-III landfill that currently accepts up to 70,000 tons per week. This landfill has a remaining capacity of 209 million cubic yards.[151] Table 3-27 shows the solid waste generation anticipated under the Specific Plan Amendment.

[150] CalRecycle. *Facility/Site Summary Details: Bandlands Sanitary Landfill.* http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0006/Detail/

[151] Waste Management. *El Sobrante Landfill.* https://www.wmsolutions.com/pdf/factsheet/El_Sobrante_Landfill.pdf

Table 3-27
Solid Waste Generation (gals/day)

Use	Unit	Factor	Generation
Business Park	348,000 sq.ft.	6 lbs/day/sq.ft	2,088 gals/day
Retail/Mix of Uses	325,000 sq.ft.	6 lbs/day/sq.ft	1,950 gals/day
Total	**673,000 sq.ft.**		**4,038 gals/day**

Source: Blodgett Baylosis Environmental Planning.

As indicated in the Table, future development envisioned under the Plan is anticipated to result in the generation of approximately 4,038 pounds of solid waste per day. The potential impacts are anticipated to be less than significant since the goals, policies, and implementation programs contained within the Plan will also further mitigate the potential impacts from future development within the Planning Area.

G. *Would the project comply with Federal, State, and local statutes and regulations related to solid waste?* ● *No Impact.*

The future development supported by the Moreno Valley Festival Specific Plan, like all other development in Moreno Valley, will be required to adhere to city and county ordinances with respect to waste reduction and recycling. As a result, no impacts related to State and local statutes governing solid waste are anticipated.

3.18.3 MITIGATION MEASURES

The adoption and subsequent implementation of the Moreno Valley Festival Specific Plan will not lead to any impacts not already identified in the certified EIR that was prepared for the City of Moreno Valley General Plan. In addition, the goals, policies, and implementation programs contained within the Specific Plan will also further mitigate the potential impacts from new development contemplated as part of the implementation of the General Plan and the Moreno Valley Festival Specific Plan.[152] As a result, no additional mitigation beyond that which may be required for individual development projects is required.

3.19 MANDATORY FINDINGS OF SIGNIFICANCE

The following findings can be made regarding the mandatory findings of significance set forth in Section 15065 of the CEQA Guidelines based on the results of this environmental assessment:

- The approval and subsequent implementation of the Moreno Valley Festival Specific Plan *will not* have the potential to degrade the quality of the environment, with the implementation of the mitigation measures included herein.

[152] P and D Consultants. *Final Environmental Impact Report - City of Moreno Valley General Plan SCH# 200091075*. Report dated July 2006.

- The approval and subsequent implementation of the Moreno Valley Festival Specific Plan *will not* have the potential to achieve short-term goals to the disadvantage of long-term environmental goals, with the implementation of the mitigation measures referenced herein.

- The approval and subsequent implementation of the Moreno Valley Festival Specific Plan *will not* have impacts that are individually limited, but cumulatively considerable, when considering planned or proposed development in the immediate vicinity, with the implementation of the mitigation measures contained herein.

- The approval and subsequent implementation of the Moreno Valley Festival Specific Plan *will not* have environmental effects that will adversely affect humans, either directly or indirectly.

- The Initial Study indicated there is no evidence that the Moreno Valley Festival Specific Plan will have an adverse effect on wildlife resources or the habitant upon which any wildlife depends.

SECTION 4 CONCLUSIONS

4.1 FINDINGS

The initial study determined that the proposed project is not expected to have significant adverse environmental impacts, with the implementation of the mitigation measure. The following findings can be made regarding the mandatory findings of significance set forth in Section 15065 of the CEQA Guidelines based on the results of this initial study:

- The Moreno Valley Festival Specific Plan *will not* have the potential to degrade the quality of the environment, with the implementation of the mitigation measures included herein.

- The Moreno Valley Festival Specific Plan *will not* have the potential to achieve short term goals to the disadvantage of long-term environmental goals, with the implementation of the mitigation measures referenced herein.

- The Moreno Valley Festival Specific Plan *will not* have impacts that are individually limited, but cumulatively considerable, when considering planned or proposed development in the immediate vicinity, with the implementation of the mitigation measures contained herein.

- The Moreno Valley Festival Specific Plan *will not* have environmental effects that will adversely affect humans, either directly or indirectly, with the implementation of the mitigation measures contained herein.

THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK.

SECTION 5 REFERENCES

5.1 PREPARERS

BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
2211 South Hacienda Boulevard, Suite 107
Hacienda Heights, California 91745
(626) 336-0033

Marc Blodgett, Project Manager
Bryan Hamilton, Project Planner
Liesl Sullano, Project Planner

5.2 REFERENCES

Bugliarello, et. al., *The Impact of Noise Pollution*, Chapter 127, 1975.

California Administrative Code, *Title 24, Energy Conservation*.

California Department of Fish and Wildlife, *Natural Diversity Database*, 2010.

California Division of Mines and Geology, *Seismic Hazards Mapping Program*, 2008.

California Department of Parks and Recreation, *California Historical Landmarks,* 2004.

California Office of Planning and Research, *California Environmental Quality Act and the CEQA Guidelines*, as amended 2016.

California, State of California Public Resources Code Division 13, *The California Environmental Quality Act. Chapter 2.5, Section 21067 and Section 21069*.

Federal Emergency Management Agency, *Flood Insurance Rate Map,* 2010.

Moreno Valley, City of. *Moreno Valley General Plan*.

Moreno Valley, City of. *Zoning Ordinance*.

Southern California Association of Governments, *Population, Housing, and Employment Projections*, 2016.

South Coast Air Quality Management District, *CEQA Air Quality Handbook*.

South Coast Air Quality Management District, *Air Quality Management Plan*, 2016.

U.S. Geological Survey, *Evaluating Earthquake Hazards in the Los Angeles Region - An Earth Science Perspective, USGS Professional Paper 1360*, 1985.

THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK.

APPENDICES (PROVIDED UNDER A SEPARATE COVER)

APPENDIX A – AIR QUALITY WORKSHEETS

APPENDIX B – BIOLOGICAL RESOURCES REFERENCES

APPENDIX C – NOISE MEASUREMENTS

APPENDIX D – TRAFFIC STUDY

APPENDIX E – CULTURAL RESOURCES INVENTORY

APPENDIX F - UTILITIES WORKSHEETS

THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK.

MITIGATION MONITORING AND REPORTING PROGRAM

MORENO VALLEY FESTIVAL SPECIFIC PLAN AMENDMENT
MORENO VALLEY, CALIFORNIA

LEAD AGENCY:

CITY OF MORENO VALLEY
COMMUNITY DEVELOPMENT DEPARTMENT
14177 FREDERICK STREET
P. O. BOX 88005
MORENO VALLEY, CALIFORNIA 92552

REPORT PREPARED BY:

BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
2211 HACIENDA BOULEVARD, SUITE 107
HACIENDA HEIGHTS, CALIFORNIA 91745

MARCH 13, 2018

MORV 003

TABLE OF CONTENTS

1. OVERVIEW OF THE PROJECT

The proposed project involves the adoption and subsequent implementation of the Moreno Valley Festival Specific Plan Amendment (also referred to hereinafter as "the Plan Amendment"). The Specific Plan Amendment that is the focus of this Initial Study and Mitigated Negative Declaration (IS/MND) is an amendment to the adopted *Moreno Valley Festival Specific Plan/EIR (SP-205)*. The original Specific Plan was adopted and the Environmental Impact Report (EIR) was certified by the City Council of Moreno Valley on October 27, 1987. The purpose of this Amendment is to modify the Adopted Specific Plan as a means to promote a wider range of land uses and development to address current development trends. The expanded range of allowable uses will include a Mix of Uses Development (MU), Commercial/Retail Development (CR), Retail Mix of Uses (RMU) and Open Space (OS) designation. The plan amendment will also facilitate the extension of Davis Street in a northerly direction to ultimately re-connect with the segment of Davis Street that extends north of Ironwood Avenue. The overall placement, design, and phasing of future development will be responsive to the employment and community service needs while mitigating the potential impacts on sensitive development that will be located both within and in close proximity to the Planning Area.

During the preparation of the adopted Moreno Valley Festival Specific Plan (SP 205), consideration was given to all public utility and infrastructure needed to serve the future development contemplated as part of the adopted Specific Plan's implementation. The majority of the needed infrastructure has been installed pursuant to the requirements of the adopted Plan. All *future* public utility and infrastructure shall be installed according to Title 9 (Land Use and Planning) 0f the City of Moreno Valley Municipal Code and the requirements of this Plan Amendment. The installation of new infrastructure will be phased as part of the area-wide master planned facilities. The implementation of roadways and infrastructure to service the Planning Area will occur according to development needs.

The adopted Moreno Valley Festival Specific Plan was prepared pursuant to Government Code Section 65450, which grants authority to cities to adopt specific plans for purposes of implementing the goals and policies of their general plans. The Government Code sets forth the minimum requirements and review procedures for specific plans including the provision of a land use plan, infrastructure and public services plan, criteria and standards for development, and implementation measures. This Specific Plan Amendment complies with the City of Moreno Valley's Municipal Code (Chapter 9.13) governing amendments of the specific plans content and procedures for their adoption and enforcement.

2. FINDINGS OF THE ENVIRONMENTAL ASSESSMENT

The Initial Study prepared for the project indicated that the project's construction and subsequent occupation are not expected to result in significant adverse environmental impacts upon implementation of the required mitigation measures. The following Mandatory Findings of Significance can be made as set forth in Section 15065 of the CEQA Guidelines, as amended, based on the results of this environmental assessment:

- The proposed project *will not* have the potential to degrade the quality of the environment;

- The proposed project *will not* have the potential to achieve short-term goals to the disadvantage of long-term environmental goals;

- The proposed project *will not* have impacts, that are individually limited, but cumulatively considerable; and,

- The proposed project *will not* have environmental effects that will adversely affect humans, either directly or indirectly.

3. FINDINGS RELATED TO MITIGATION MONITORING

Section 21081(a) of the Public Resources Code states that findings must be adopted by the decision-makers coincidental to the approval of a Mitigated Negative Declaration. These findings shall be incorporated as part of the decision-maker's findings of fact, in response to AB-3180. In accordance with the requirements of Section 21081(a) and 21081.6 of the Public Resources Code, the following additional findings may be made:

- A mitigation reporting or monitoring program will be required;

- Site plans and/or building plans, submitted for approval by the responsible monitoring agency, shall include the required standard conditions; and,

- An accountable enforcement agency or monitoring agency shall be identified for the mitigations adopted as part of the decision-maker's final determination.

4. MITIGATION MEASURES

The analysis indicated that the proposed project may result in impacts to protected species and habitat. As a result, the following mitigation is required:

Mitigation Measure No. 1 (Biological Resources Impacts). The proposed project must be consistent with the Western Riverside MSHCP. Payment of the appropriate development mitigation fees will mitigate any impacts to these species.

Mitigation Measure No. 2 (Biological Resources Impacts). Prior to any land disturbance, a focused pre-construction burrowing owl survey shall be conducted prior to construction in accordance with the Burrowing Owl Survey instructions of the Western Riverside County MSHCP. This survey is to be conducted within 30 days prior to ground disturbance. After the pre-construction burrowing owl survey has been completed, a survey report will be prepared in accordance with the MSHCP 30-day Pre-construction Burrowing Owl Survey Report Format.

Mitigation Measure No. 3 (Biological Resources Impacts). Future developers must consult with the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Santa Ana Regional Water Quality Control Board to determine the need for permits that must be obtained prior to initiation of construction of a proposed project.

Mitigation Measure No. 4 (Biological Resources Impacts). Prior to the start of construction activity, developers must prepare a Multiple Species Habitat Conservation Program (MSHCP) Determination of Biologically Equivalent or Superior Preservation (DBESP) should a future project affect Western Riverside MSHCP riverine resources.

Mitigation Measure No. 5 (Biological Resources Impacts). Vegetation removal shall be conducted outside of the nesting season for migratory birds to avoid direct impacts. The migratory bird nesting season is between February 1 and September 15.

Mitigation Measure No. 6 (Biological Resources Impacts). If active nests are found during nesting bird surveys, they shall be flagged and a 200-foot buffer shall be fenced around the nests.

Mitigation Measure No. 7 (Biological Resources Impacts). If vegetation removal will occur during the migratory bird nesting season, between February 1 and September 15, pre-construction nesting bird surveys must be performed within three days prior to vegetation removal.

The following mitigation will be effective in minimizing potential impacts to possible cultural resources:

Mitigation Measure No. 8 (Cultural Resources Impacts). Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The project archaeologist must have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. The project archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, must develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB-52 to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB-52 tribal consultation process for the project, has not opted out of the AB-52 consultation process, and has completed AB-52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

- Project grading and development scheduling;

- The project archeologist and the Consulting Tribes(s) as defined in this mitigation must attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training will include a brief review of the cultural sensitivity of the project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial training must take the Cultural Sensitivity Training prior to beginning work and the project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

- The protocols and stipulations that the contractor, City, Consulting Tribe(s) and project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

Mitigation Measure No. 9 (Cultural Resources Impacts). Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians, the Soboba Band of Luiseño Indians, and the Morongo Band of Mission Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the project archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the project archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

Mitigation Measure No. 10 (Cultural Resources Impacts). In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

- One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

  i. Preservation-in-place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

  ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to the initial mitigation. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in the first mitigation identified in Section 3.5.2.B.

- The City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the project archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal Representatives to the site to assess the significance of the find."

Mitigation Measure No. 11 (Cultural Resources Impacts). If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61), Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in previously identified mitigation before any further work commences in the affected area.

Mitigation Measure No. 12 (Cultural Resources Impacts). If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within five-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

Mitigation Measure No. 13 (Cultural Resources Impacts). If previously unidentified paleontological resources are unearthed during construction, work shall cease within 50 feet of the find and the project Applicant must retain a qualified paleontologist, approved by the City, to assess the significance of the find. If a find is determined to be significant, the Lead Agency and the paleontologist will determine appropriate avoidance measures or other appropriate mitigation. All significant fossil materials recovered will be, as necessary and at the discretion of the qualified paleontologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.

The following mitigation is required to further reduce future projects greenhouse gas emissions impacts:

Mitigation Measure No. 14 (Greenhouse Gases Emissions Impacts). The Applicant must install ENERGY STAR appliances wherever appliances are installed.

Mitigation Measure No. 15 (Greenhouse Gases Emissions Impacts). The Applicant shall install ENERGY STAR rated light emitting diodes (LEDs) for traffic, street, and outdoor lighting.

Mitigation Measure No. 16 (Greenhouse Gases Emissions Impacts). The Applicant must install ENERGY STAR rated Compact Florescent Lights (CFLs) in all indoor areas that require continuous lighting. CFLs should not be used in rooms or areas that are subject to frequent on/off cycling, as the lifespan of CFLs diminishes when there are frequently turned off.

Mitigation Measure No. 17 (Greenhouse Gases Emissions Impacts). The Applicant must install sky-lights as part of the shopping center's revitalization.

Mitigation Measure No. 18 (Greenhouse Gases Emissions Impacts). The Applicant must install light colored "cool" roofs.

Mitigation Measure No. 19 (Greenhouse Gases Emissions Impacts). The Applicant must install "cool" pavement (lighter colored) throughout the parking areas.

Mitigation Measure No. 20 (Greenhouse Gases Emissions Impacts). All landscape planted on-site must be watered by water dispensed through drip irrigation.

Mitigation Measure No. 21 (Greenhouse Gases Emissions Impacts). The building contractors shall install bicycle racks consistent with the City's Municipal Code adjacent to each building.

Mitigation Measure No. 22 (Greenhouse Gases Emissions Impacts). The building contractors shall install electric vehicle charging stations in the parking areas. Preferential parking spaces for electric vehicles must be provided.

The following mitigation will be effective in reducing potential impacts in regards to construction noise:

Mitigation Measure No. 23 (Noise Impacts). The Applicant shall ensure that the contractors conduct demolition and construction activities between the hours of 7:00 AM and 6:00 PM on weekdays and 9:00 AM to 12:00 PM on Saturdays, with no construction permitted on Sundays or Federal holidays.

Mitigation Measure No. 24 (Noise Impacts). The Applicant shall ensure that the contractors use construction equipment that includes working mufflers and other sound suppression equipment as a means to reduce machinery noise.

Mitigation Measure No. 25 (Noise Impacts). Signs must be installed around the perimeter of the Planning Area that display the name and phone number of the local contact person residents may call to complain about noise. Upon receipt of a complaint, the contractor must respond immediately by reducing noise to meet Code requirements. In addition, copies of all complaints and subsequent communication between the affected residents and contractors must be forwarded to the City's Community Development Department.

Mitigation Measure No. 26 (Noise Impacts). Construction vehicles will be prohibited from traveling along Ironwood Avenue. This mitigation is designed to minimize the number of residential units that may be exposed to noise and vibration.

Mitigation Measure No. 27 (Noise Impacts). The use of any such equipment which is capable of causing ground shaking is not permitted without prior written approval from the Public Works Director, or designee. If ground shaking vibratory equipment is requested and approved, the Contractor is responsible for making any repairs or replacements to facilities damaged due to nearby soils settling or other impacts of vibrating. The Contractor must install vibratory monitoring equipment to monitor for any settlement/damage caused.

Mitigation Measure No. 28 (Noise Impacts). Construction staging must occur over 200 feet from the nearest residential use. The location of staging and queuing areas will be subject to the approval of the Community Development Department prior to the issuance of any building or grading permit.

The traffic report indicated that the following mitigation measures will be required:

Mitigation Measure No. 29 (Transportation & Circulation Impacts). For the Heacock Street and Westbound SR-60 ramps, the Applicant must optimize the cycle length (90 second cycle length), splits, and offsets and restripe the defacto right-turn lane to a southbound right-turn lane with 50-foot storage and a southbound through lane. This mitigation will improve the LOS to C.

Mitigation Measure No. 30 (Transportation & Circulation Impacts). The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Davis Street and Ironwood Avenue. This mitigation will yield a LOS B.

Mitigation Measure No. 31 (Transportation & Circulation Impacts). The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Indian Street and Sunnymead Boulevard. This mitigation will yield a LOS C.

Mitigation Measure No. 32 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 33 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 190 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 34 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 210 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 35 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 105 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 36 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 170 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 37 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 38 (Transportation & Circulation Impacts). For the Heacock Street/State Route (SR 60) eastbound ramps, the Applicant must restripe 50 feet of the two-way left turn lane north of the Heacock/ SR-60 westbound ramps intersection as a "Freeway Only" lane.

Mitigation Measure No. 39 (Transportation & Circulation Impacts). For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 220 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 40 (Transportation & Circulation Impacts). For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 145 of feet storage to accommodate 95th percentile queues.

Mitigation Measure No. 41 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 145 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 42 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 43 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 165 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 44 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 155 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 45 (Transportation & Circulation Impacts). For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 110 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 46 (Transportation & Circulation Impacts). For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 180 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 47 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the eastbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues. This might require replacing the concrete island with stripping.

Mitigation Measure No. 48 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the westbound left turn lanes to provide 115 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 49 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the northbound left turn lanes to provide 200 feet of storage to accommodate 95th percentile queues.

Mitigation Measure No. 50 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the southbound left turn lanes to provide 125 feet of storage to accommodate 95th percentile queues.

5. MITIGATION MONITORING

The monitoring and reporting on the implementation of these measures, including the period for implementation, monitoring agency, and the monitoring action are identified in Table 1 provided on the following pages.

Table 1
Mitigation-Monitoring Program

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 1 (Biological Resources Impacts). The proposed project must be consistent with the Western Riverside MSHCP. Payment of the appropriate development mitigation fees will mitigate any impacts to these species.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of Building Permits.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 2 (Biological Resources Impacts). Prior to any land disturbance, a focused pre-construction burrowing owl survey shall be conducted prior to construction in accordance with the Burrowing Owl Survey instructions of the Western Riverside County MSHCP. This survey is to be conducted within 30 days prior to ground disturbance. After the pre-construction burrowing owl survey has been completed, a survey report will be prepared in accordance with the MSHCP 30-day Pre-construction Burrowing Owl Survey Report Format.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*Prior to the start of ground disturbing activities.* ● Mitigation ends at the completion of the construction phase.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 3 (Biological Resources Impacts). Future developers must consult with the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Santa Ana Regional Water Quality Control Board to determine the need for permits that must be obtained prior to initiation of construction of a proposed project.	Community Development Department and the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Santa Ana Regional Water Quality Control Board. ● *(The Applicant is responsible for implementation)*	*Prior to the start of ground disturbing activities.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 4 (Biological Resources Impacts). Prior to the start of construction activity, developers must prepare a Multiple Species Habitat Conservation Program (MSHCP) Determination of Biologically Equivalent or Superior Preservation (DBESP) should a future project affect Western Riverside MSHCP riverine resources.	Community Development Department and the Western Riverside County Regional Conservation Authority. ● *(The Applicant is responsible for implementation)*	*Prior to the start of ground disturbing activities.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 5 (Biological Resources Impacts). Vegetation removal shall be conducted outside of the nesting season for migratory birds to avoid direct impacts. The migratory bird nesting season is between February 1 and September 15.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*Prior to the start of ground disturbing activities.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 6 (Biological Resources Impacts). If active nests are found during nesting bird surveys, they shall be flagged and a 200-foot buffer shall be fenced around the nests.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*Prior to the start of ground disturbing activities.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 7 (Biological Resources Impacts). If vegetation removal will occur during the migratory bird nesting season, between February 1 and September 15, pre-construction nesting bird surveys must be performed within three days prior to vegetation removal.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*Three days prior to the start of vegetation removal.* ● Mitigation ends at the completion of the construction phase.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 8 (Cultural Resources Impacts). Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The project archaeologist must have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. The project archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, must develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB-52 to address the details, timing, and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB-52 tribal consultation process for the project, has not opted out of the AB-52 consultation process, and has completed AB-52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include: ● Project grading and development scheduling; ● The project archeologist and the Consulting Tribes(s) as defined in this mitigation must attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training will include a brief review of the cultural sensitivity of the project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial training must take the Cultural Sensitivity Training prior to beginning work and the project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis; ● The protocols and stipulations that the contractor, City, Consulting Tribe(s) and project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.	Community Development Department ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a grading permit.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 9 (Cultural Resources Impacts). Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians, the Soboba Band of Luiseño Indians, and the Morongo Band of Mission Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the project archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the project archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2	Community Development Department, Pechanga Band of Luiseño Indians, Soboba Band of Luiseño Indians, and Morongo Band of Mission Indians. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a grading permit.* ● Mitigation ends at the completion of the construction phase.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 10 (Cultural Resources Impacts). In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries: ● One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department: i. Preservation-in-place of the cultural resources, if feasible. Preservation in place means avoiding the resources; leaving them in the place they were found with no development affecting the integrity of the resources. ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to the initial mitigation. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in the first mitigation identified in Section 3.5.2.B. ● The City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the project archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal Representatives to the site to assess the significance of the find."	Community Development Department. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 11 (Cultural Resources Impacts). If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61), Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in previously identified mitigation before any further work commences in the affected area.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 12 (Cultural Resources Impacts). If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within five-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).	Community Development Department. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 13 (Cultural Resources Impacts). If previously unidentified paleontological resources are unearthed during construction, work shall cease within 50 feet of the find and the project Applicant must retain a qualified paleontologist, approved by the City, to assess the significance of the find. If a find is determined to be significant, the Lead Agency and the paleontologist will determine appropriate avoidance measures or other appropriate mitigation. All significant fossil materials recovered will be, as necessary and at the discretion of the qualified paleontologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 14 (Greenhouse Gases Emissions Impacts). The Applicant must install ENERGY STAR appliances wherever appliances are installed.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 15 (Greenhouse Gases Emissions Impacts). The Applicant shall install ENERGY STAR rated light emitting diodes (LEDs) for traffic, street, and outdoor lighting.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 16 (Greenhouse Gases Emissions Impacts). The Applicant must install ENERGY STAR rated Compact Florescent Lights (CFLs) in all indoor areas that require continuous lighting. CFLs should not be used in rooms or areas that are subject to frequent on/off cycling, as the lifespan of CFLs diminishes when there are frequently turned off.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 17 (Greenhouse Gases Emissions Impacts). The Applicant must install sky-lights as part of the shopping center's revitalization.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 18 (Greenhouse Gases Emissions Impacts). The Applicant must install light colored "cool" roofs.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 19 (Greenhouse Gases Emissions Impacts). The Applicant must install "cool" pavement (lighter colored) throughout the parking areas.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 20 (Greenhouse Gases Emissions Impacts). All landscape planted on-site must be watered by water dispensed through drip irrigation.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 21 (Greenhouse Gases Emissions Impacts). The building contractors shall install bicycle racks consistent with the City's Municipal Code adjacent to each building.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 22 (Greenhouse Gases Emissions Impacts). The building contractors shall install electric vehicle charging stations in the parking areas. Preferential parking spaces for electric vehicles must be provided.	Community Development Department and the Building Official. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 23 (Noise Impacts). The Applicant shall ensure that the contractors conduct demolition and construction activities between the hours of 7:00 AM and 6:00 PM on weekdays and 9:00 AM to 12:00 PM on Saturdays, with no construction permitted on Sundays or Federal holidays.	Community Development Department and Code Enforcement. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 24 (Noise Impacts). The Applicant shall ensure that the contractors use construction equipment that includes working mufflers and other sound suppression equipment as a means to reduce machinery noise.	Community Development Department and Code Enforcement. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 25 (Noise Impacts). Signs must be installed around the perimeter of the Planning Area that display the name and phone number of the local contact person residents may call to complain about noise. Upon receipt of a complaint, the contractor must respond immediately by reducing noise to meet Code requirements. In addition, copies of all complaints and subsequent communication between the affected residents and contractors must be forwarded to the City's Community Development Department.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 26 (Noise Impacts). Construction vehicles will be prohibited from traveling along Ironwood Avenue. This mitigation is designed to minimize the number of residential units that may be exposed to noise and vibration.	Community Development Department and Code Enforcement. ● *(The Applicant is responsible for implementation)*	*During project construction.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 27 (Noise Impacts). The use of any such equipment which is capable of causing ground shaking is not permitted without prior written approval from the Public Works Director, or designee. If ground shaking vibratory equipment is requested and approved, the Contractor is responsible for making any repairs or replacements to facilities damaged due to nearby soils settling or other impacts of vibrating. The Contractor must install vibratory monitoring equipment to monitor for any settlement/damage caused.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a grading permit.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 28 (Noise Impacts). Construction staging must occur over 200 feet from the nearest residential use. The location of staging and queuing areas will be subject to the approval of the Community Development Department prior to the issuance of any building or grading permit.	Community Development Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a grading permit.* ● Mitigation ends at the completion of the construction phase.
Mitigation Measure No. 29 (Transportation & Circulation Impacts). For the Heacock Street and Westbound SR-60 ramps, the Applicant must optimize the cycle length (90 second cycle length), splits, and offsets and restripe the defacto right-turn lane to a southbound right-turn lane with 50-foot storage and a southbound through lane. This mitigation will improve the LOS to C.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 30 (Transportation & Circulation Impacts). The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Davis Street and Ironwood Avenue. This mitigation will yield a LOS B.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 31 (Transportation & Circulation Impacts). The Applicant must optimize the cycle length (60 second cycle length), splits, and offsets for the intersection of Indian Street and Sunnymead Boulevard. This mitigation will yield a LOS C.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 32 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 33 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 190 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 34 (Transportation & Circulation Impacts). For the Heacock Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 210 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 35 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 105 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 36 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 170 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 37 (Transportation & Circulation Impacts). For the Heacock Street/Hemlock Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 150 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 38 (Transportation & Circulation Impacts). For the Heacock Street/State Route (SR 60) eastbound ramps, the Applicant must restripe 50 feet of the two-way left turn lane north of the Heacock/ SR-60 westbound ramps intersection as a "Freeway Only" lane.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 39 (Transportation & Circulation Impacts). For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 220 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 40 (Transportation & Circulation Impacts). For the Davis Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 145 of feet storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 41 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the eastbound left turn lanes to provide 145 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 42 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 43 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 165 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 44 (Transportation & Circulation Impacts). For the Indian Street/Ironwood Avenue intersection, the Applicant must restripe the southbound left turn lanes to provide 155 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 45 (Transportation & Circulation Impacts). For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the westbound left turn lanes to provide 110 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 46 (Transportation & Circulation Impacts). For the Indian Street/Hemlock Avenue intersection, the Applicant must restripe the northbound left turn lanes to provide 180 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.

Table 1
Mitigation-Monitoring Program (continued)

Measure	Enforcement Agency	Monitoring Phase
Mitigation Measure No. 47 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the eastbound left turn lanes to provide 140 feet of storage to accommodate 95th percentile queues. This might require replacing the concrete island with stripping.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 48 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the westbound left turn lanes to provide 115 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 49 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the northbound left turn lanes to provide 200 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.
Mitigation Measure No. 50 (Transportation & Circulation Impacts). For the Indian Street/Sunnymead Boulevard intersection, the Applicant must restripe the southbound left turn lanes to provide 125 feet of storage to accommodate 95th percentile queues.	Public Works Department. ● *(The Applicant is responsible for implementation)*	*Prior to the issuance of a Certificate of Occupancy.* ● Mitigation to continue over the project's operational lifetime.

PLANNING COMMISSION RESOLUTION NO. 2018-14

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY RECOMMENDING THAT THE CITY COUNCIL APPROVE APPLICATION NO. PEN16-0013: AN AMENDMENT TO THE GENERAL PLAN LAND USE MAP, CHANGING THE LAND USE DESIGNATION FROM COMMERCIAL (C) TO BUSINESS PARK (BP) FOR VARIOUS PARCELS TOTALING APPROXIMATELY 63.78 LOCATED EAST OF HEACOCK STREET BETWEEN IRONWOOD AVENUE AND STATE HIGHWAY ROUTE 60

WHEREAS, the applicant, LCG MVF, LLC, filed application, PEN16-0013, requesting an amendment to the Moreno Valley General Plan, as described in the title of this Resolution and the attached Exhibit A; and

WHEREAS, the application has been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, the City has prepared an Initial Study and Mitigated Negative Declaration consistent with the California Environmental Quality Act (CEQA) based on a thorough analysis of potential environmental impacts; and

WHEREAS, upon completion of a thorough development review process the project was appropriately agendized and noticed for a public hearing before the Planning Commission of the City of Moreno Valley (Planning Commission); and

WHEREAS, the public hearing and environmental notice for this project was published in the local newspaper on February 18, 2018. In addition, the Notice of Intent to Adopt a Mitigated Negative Declaration was sent to the State Clearinghouse and other outside agencies more than 30 days prior to the public hearing on the project. Public notice was sent to all property owners of record within 300 feet of the project site on March 8, 2018. The public hearing notice for this project was also posted on the project site on March 9, 2018;

WHEREAS, on March 22, 2018, the Planning Commission held a public hearing to consider the application; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, pursuant to Government Code Section 66020(d)(1), **NOTICE IS HEREBY GIVEN** that this project is subject to certain fees, dedications, reservations and other exactions as provided herein.

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the Planning Commission as follows:

A. This Planning Commission hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this Planning Commission during the above-referenced meeting on March 22, 2018, including written and oral staff reports, public testimony and the record from the public hearing, this Planning Commission hereby specifically finds as follows:

1. **Conformance with General Plan Policies –** The proposed general plan amendment and zone change are consistent with the General Plan, and its goals, objectives, policies and programs.

   FACT: The proposed General Plan Amendment (PEN16-0013) will change the existing land use designation of Planning Areas I, II, III, IV, VI, VII and VIII of the Festival Specific Plan (SP 205). A total of twelve (12) parcels within Planning Areas I, III, IV, VII and VIII (APN(s): 481-020-017, 021, 022, 023, and 028 and 481-090-018, 019, 020, 021, 022 & 029) from Commercial (C) to Business Park (BP). Planning Area II will change from Office (O) to Business Park (BP) (APN: 481-020-019). The two (2) parcels within Planning Area VI (APN(s): 481-090-032 and 033) are to remain Commercial (C). The General Plan Amendment also changes the modification of the General Plan from Commercial to Business Park for the 1.84 acre parcel (APN 481-020-037) on the north side of Hemlock Avenue and westerly of Davis Street. This parcel is currently not within the boundaries of the Specific Plan, but will be included within the Specific Plan with the approval of the Specific Plan Amendment.

   With the adoption of this General Plan Amendment, the General Plan will be consistent with the proposed land uses proposed by the Specific Plan Amendment. The General Plan Amendment would be needed to facilitate the related Change of Zone (PEN16-0014) and accommodate the Specific Plan Amendment (PEN16-0015) proposal. The change in General Plan designation to Business Park does not preclude the development of commercial uses within the Specific Plan area. It provides the flexibility to create a mix of commercial, retail, office and business park uses in the Festival Specific Plan (SP 205) which are intended to revitalize an underperforming commercial area.

   General Plan Policy 2.5.1 states that the primary purpose of areas designated Business Park/Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. Changing the Festival Specific Plan (SP 205) land use designation to Business Park (BP) promotes a mix of business park uses which provide a sound and diversified

economic base and ample employment opportunities for the citizens of Moreno Valley, but continues to allow for commercial uses as specified in the Specific Plan.

General Plan Objective 2.8 states that the major purpose of specific plans is to encourage and promote the development of larger-scaled mixed-use developments for the purpose of providing adequate flexibility and innovation in residential building types, land use mixes, site design, and development concepts. An adopted specific plan is intended to address issues contained in the objectives, policies, and implementation programs of the Moreno Valley General Plan (Policy 2.8.2). With the adoption of the Specific Plan Amendment, this General Plan policy would be achieved for the proposed General Plan designations.

The goals and objectives of the Community Development Element of the General Plan strives to ensure that all development within the City of Moreno Valley is of high quality, yields a pleasant living and working environment for existing and future residents, and attracts business as the result of consistent exemplary design (Objective 2.10). The proposal is a comprehensive update to the Specific Plan, including updates to the design and architectural standards that are more contemporary and would further development under the current market conditions.

2. **Health, Safety and Welfare –** The proposed general plan amendment will not be detrimental to the public health, safety or welfare.

FACT: The proposed General Plan Amendment will not result in unacceptable levels of protection from natural and man-made hazards to life, health, and property and is therefore consistent with General Goal 9.6.1. The project site is located within approximately a mile of Fire Station #2 (Sunnymead FS) and within close proximity to emergency services which is consistent with General Plan Goal 9.6.2 which requires emergency services that are adequate to meet minor emergency and major catastrophic situations.

The Business Park designation will introduce the potential for business park uses within specified Planning Areas. Any development project will have to comply with all applicable General Plan and Specific Plan policies. In addition, the Specific Plan includes development standards that require enhanced buffering at edge treatments between residential uses and business park development, and also along Ironwood Avenue.

The proposed development within the area will be required to comply with all building, and health and safety codes. Development under the General Plan designation will encourage consistency with Objective

6.1 which is to minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage due to seismic ground shaking and secondary effects or General Plan Objective 6.2 to minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage, and to minimize nuisances due to flooding.

The California Environmental Quality Act (CEQA) is a statewide environmental law contained in Public Resources Code §§21000-21177. CEQA applies to most public agency decisions to carry out, authorize, or approve actions that have the potential to affect the environment. CEQA requires that public agencies analyze and acknowledge the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts to the environment when avoidance or reduction is feasible. The CEQA compliance process provides public agencies and the general public an opportunity to comment on a proposed project's environmental effects.

An Initial Study/Mitigated Negative Declaration was prepared, which assessed the potential of the proposed General Plan Amendment and the related Change of Zone and Specific Plan Amendment to the Festival Specific Plan (SP 205) applications to impact the environment. The Initial Study provided the documentation of the factual basis for the finding in the Mitigated Negative Declaration that the proposed project will not have a significant effect on the environment with the implementation of mitigation measures. The City as the Lead Agency has prepared a Mitigated Negative Declaration (MND) pursuant to Sections 15070 et seq. of the State CEQA Guidelines.

The Mitigated Negative Declaration has been considered by the Planning Commission and prepared as there is no evidence that the proposed project will have a significant impact on public health or be materially injurious to surrounding properties of the environment as a whole.

BE IT FURTHER RESOLVED that the Planning Commission **HEREBY RECOMMENDS** Resolution 2018-0014 that the City Council:

1. **APPROVE** General Plan Amendment Application No. PEN16-0013, based on the findings contained in this resolution, amending the Land Use Element Map as set forth in the attached Exhibit A.

APPROVED this 22th day of March, 2018.

AYES:
NOES:
ABSTAIN:

_____
Jeffrey Barnes
Chair, Planning Commission

ATTEST:

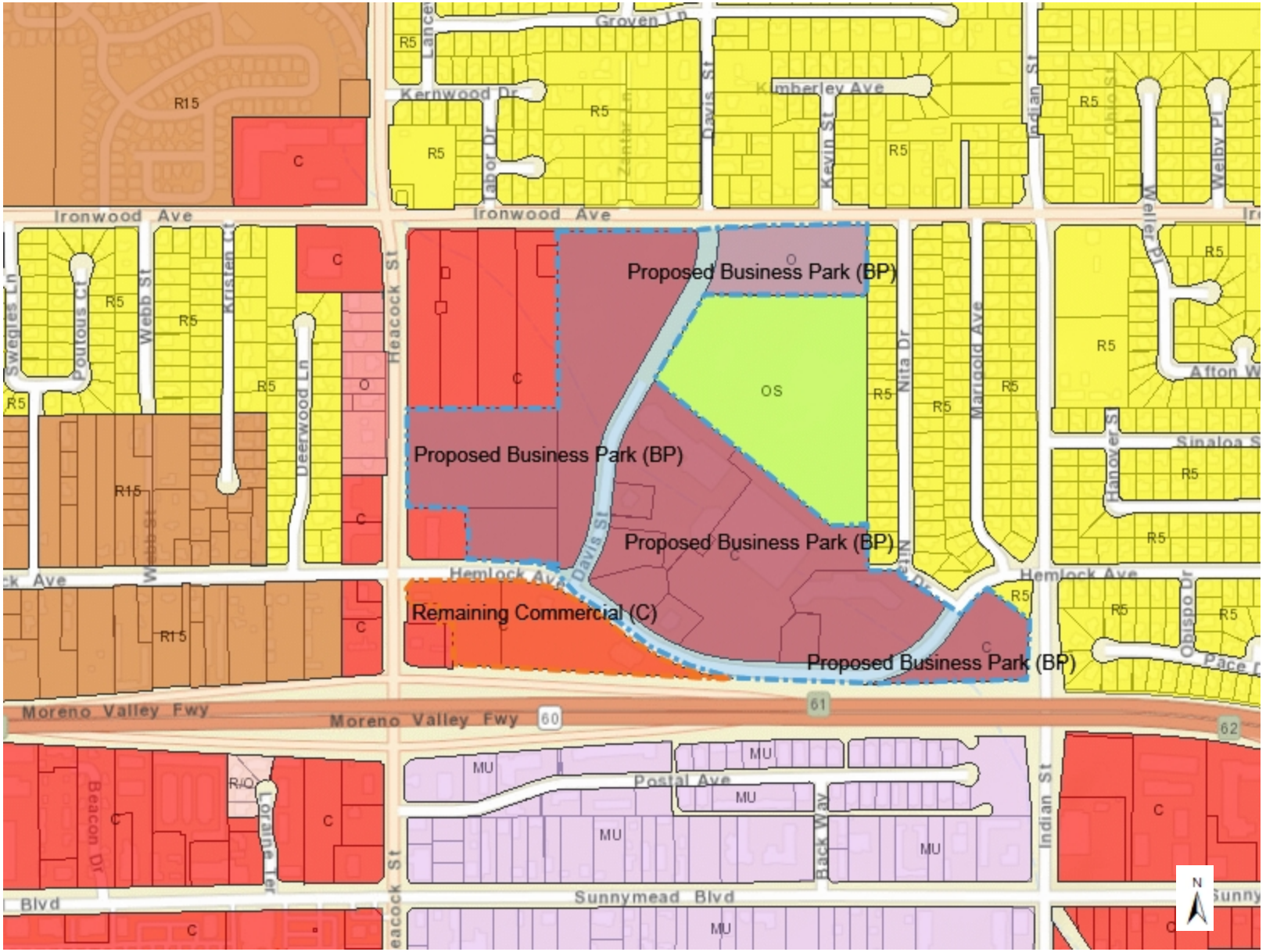
_____
Albert Armijo, Interim Planning Manager

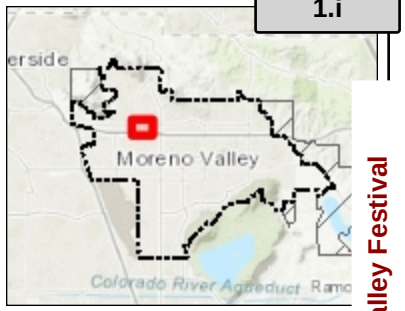
APPROVED AS TO FORM:

_____
City Attorney

ATTACHED: Exhibit A: General Plan Amendment Map

General Plan Amendment
PEN16-0013





Legend

Land Use

- Residential: Max. 1 du/ac
- Mixed Use
- Residential: Max. 2 du/ac
- Rural Residential: Max 2.5 du/ac
- Residential: Max. 3 du/ac
- Residential: Max. 5 du/ac
- Residential: Max. 5 or 15 du/ac
- Residential: Max. 10 du/ac
- Residential: Max.15 du/ac
- Residential: Max. 20 du/ac
- Residential: Max. 30 du/ac
- Hillside Residential
- Planned Residential
- Residential/Office
- Office
- Commercial
- Business Park/Light Industrial
- Open Space
- Public Facilities
- Floodplain

Parcels

Notes

Existing Land Use is Commercial (C) and Office (O), Proposed is Business Park (BP) and Commercial (C).

1,232.1 0 616.05 1,232.1 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Print Date: 3/9/2018

DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

PLANNING COMMISSION RESOLUTION NO. 2018-15

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY RECOMMENDING THAT THE CITY COUNCIL APPROVE APPLICATION NO. PEN16-0014: AN AMENDMENT TO THE OFFICIAL ZONING ATLAS, CHANGING THE ZONING CLASSIFICATION FROM SP 205 RETAIL COMMERCIAL (RC), COMMUNITY COMMERCIAL (CC) AND SP 205 COMMERCIAL/OFFICE PARK (C/OP) TO SP 205 MIX OF USES (MU), SP 205 RETAIL/MIX OF USES (RMU), AND SP 205 COMMERCIAL/RETAIL (CR) FOR VARIOUS PARCELS TOTALING APPROXIMATELY 63.78 ACRES IN THE FESTIVAL SPECIFIC PLAN AREA LOCATED EAST OF HEACOCK STREET BETWEEN IRONWOOD AVENUE AND STATE HIGHWAY ROUTE 60

WHEREAS, the applicant, LCG MVF, LLC, filed application, PEN16-0014, requesting an amendment to Page 47 of the Official Zoning Atlas to the zoning classification for Assessor Parcel Numbers (APN) 481-020-017, 019, 021, 022, 023, 028, 037 and 481-090-018, 019, 020, 021, 022, 029, 032 and 033, as described in the title of this resolution and the attached Exhibit A, Change of Zone Map; and

WHEREAS, the application has been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, the City has prepared an Initial Study and Mitigated Negative Declaration consistent with the California Environmental Quality Act (CEQA) based on a thorough analysis of potential environmental impacts; and

WHEREAS, upon completion of a thorough development review process the project was appropriately agendized and noticed for a public hearing before the Planning Commission of the City of Moreno Valley (Planning Commission); and

WHEREAS, the public hearing and environmental notice for this project was published in the local newspaper on February 18, 2018. Public notice was sent to all property owners of record within 300 feet of the project site on March 8, 2018. The public hearing notice for this project was also posted on the project site on March 9, 2018;

WHEREAS, on March 22, 2018, the Planning Commission held a public hearing to consider the application; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, pursuant to Government Code Section 66020(d)(1), **NOTICE IS HEREBY GIVEN** that this project is subject to certain fees, dedications, reservations and other exactions as provided herein.

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the Planning Commission as follows:

A. This Planning Commission hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this Planning Commission during the above-referenced meeting on March 22, 2018 including written and oral staff reports, public testimony and the record from the public hearing, this Planning Commission hereby specifically finds as follows:

1. **Conformance with General Plan Policies –** The proposed Change of Zone is consistent with the General Plan, and its goals, objectives, policies and programs.

   FACT: With the adoption of the General Plan Amendment and Specific Plan Amendment, the Change of Zone will be consistent with the General Plan. The Change of Zone (PEN16-0014) is required to be consistent with and accommodate the Specific Plan Amendment (PEN16-0015). The Zone Change will amend the Citywide zoning map with a change from Retail Commercial (SP 205 RC), Commercial/Office Park (SP 205 C/OP) and Community Commercial (CC) to Mix of Uses (SP 205 MU), Retail/Mix of Uses (SP 205 RMU) and Commercial/Retail (SP 205 CR). The proposed changes to the zoning designations allow for commercial and business park uses consistent with the proposed General Plan Amendment and Specific Plan Amendment.

   General Plan Policy 2.5.1 states that the primary purpose of areas designated Business Park/Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The Zone Change will be consistent with the proposed General Plan and Specific Plan Amendments, allowing for a mix of business park uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley. The proposal will continue to allow for commercial uses as specified in the Specific Plan.

   General Plan Objective 2.8 states that the major purpose of specific plans is to encourage and promote the development of larger-scaled mixed-use developments for the purpose of providing adequate flexibility and innovation in residential building types, land use mixes, site design, and development concepts. Policy 2.8.2 further states

that the extent that development policies, land use standards, design guidelines, and other provisions of an adopted specific plan is intended to address issues contained in the objectives, policies, and implementation programs of the Moreno Valley General Plan. With the adoption of the Specific Plan Amendment, this General Plan policy would be achieved for the proposed General Plan and zoning designations.

The goals and objectives of the Community Development Element of the General Plan strives to ensure that all development within the City of Moreno Valley is of high quality, yields a pleasant living and working environment for existing and future residents, and attracts business as the result of consistent exemplary design (Objective 2.10). The proposal is a comprehensive update to the Festival Specific Plan, including updates to the design and architectural standards would further development under the current market conditions.

2. **Conformance with the Zoning Regulations –** The proposed zoning is consistent with the purposes and intent of Title 9 of the City of Moreno Valley Municipal Code.

FACT: As proposed, the Change of Zone from Retail Commercial (SP 205 RC), Commercial/Office Park (SP 205 C/OP) and Community Commercial (CC) to Mix of Uses (SP 205 MU), Retail/Mix of Uses (SP 205 RMU) and Commercial/Retail (SP 205 CR) would be consistent with the General Plan and Specific Plan Amendments, and would continue to further the comprehensive and orderly development of the site and surrounding areas.

The Specific Plan area is approximately 50% developed with commercial related uses. The Change of Zone along with the Specific Plan Amendment will allow for development compatible with existing commercial development within the Specific Plan. The developed commercial areas are located south of Hemlock Avenue, and northeasterly of Hemlock Avenue and Davis Street. The anchor tenant and movie theaters remain vacant. The expanded range of commercial and business park uses provided for by the Specific Plan Amendment and Zone Change is intended to provide the opportunity to revitalize the project. The center is well-positioned on State Highway 60 allowing visibility and easy access for employers, service providers and small retailers.

The proposed zoning designations of Mix of Uses (SP 205 MU), Retail/Mix of Uses (SP 205 RMU) and Commercial/Retail (SP 205 CR) are compatible with the established land use designations of the parcels in the area, allowing for a mix of commercial, retail,

office and business park uses. The project provides opportunity for future flexibility and adaptability to changing market conditions. The change is reflective of a reconsideration of land use patterns in this area of the community.

3. **Health, Safety and Welfare –** The proposal will not be detrimental to the public health, safety or welfare.

FACT: The proposed Change of Zone will not result in unacceptable levels of protection from natural and man-made hazards to life, health, and property and is therefore consistent with General Goal 9.6.1. The project site is located within approximately a mile of Fire Station #2 (Sunnymead FS) and within close proximity to emergency services which is consistent with General Plan Goal 9.6.2 which requires emergency services that are adequate to meet minor emergency and major catastrophic situations. The proposed Change of Zone will not allow for development that would be inconsistent with General Plan Objective 6.1 to minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage due to seismic ground shaking and secondary effects or General Plan Objective 6.2 to minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage, and to minimize nuisances due to flooding.

The California Environmental Quality Act (CEQA) is a statewide environmental law contained in Public Resources Code §§21000-21177. CEQA applies to most public agency decisions to carry out, authorize, or approve actions that have the potential to affect the environment. CEQA requires that public agencies analyze and acknowledge the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts to the environment when avoidance or reduction is feasible. The CEQA compliance process provides public agencies and the general public an opportunity to comment on a proposed project's environmental effects.

An Initial Study/Mitigated Negative Declaration was prepared, which assessed the potential of the proposed Change of Zone and the related General Plan Amendment and Specific Plan Amendment to the Festival Specific Plan (SP 205) applications to impact the environment.

The Initial Study provided the documentation of the factual basis for the finding in the Mitigated Negative Declaration that the proposed project will not have a significant effect on the environment with the implementation of mitigation measures. The City as the Lead

Agency has prepared a Mitigated Negative Declaration (MND) pursuant to Sections 15070 et seq. of the State CEQA Guidelines.

The Mitigated Negative Declaration is an informational document that provides the City, other public agencies, and the public at-large with an objective assessment of the potential environmental impacts that could result from implementation of the proposed project. The preparation and review of the Initial Study/Mitigated Negative Declaration reflects the independent judgment of the City.

The MND has been considered by the Planning Commission and prepared as there is no evidence that the proposed project will have a significant impact on public health or be materially injurious to surrounding properties of the environment as a whole.

BE IT FURTHER RESOLVED that the Planning Commission **HEREBY RECOMMENDS** Resolution 2018-0015 that the City Council:

1. **APPROVE** Change of Zone Application No. PEN16-0015, based on the findings contained in this resolution as shown on the attachment included as Exhibit A.

APPROVED this 22th day of March, 2018**.**

AYES:
NOES:
ABSTAIN:

_____
Jeffrey Barnes
Chair, Planning Commission

ATTEST:

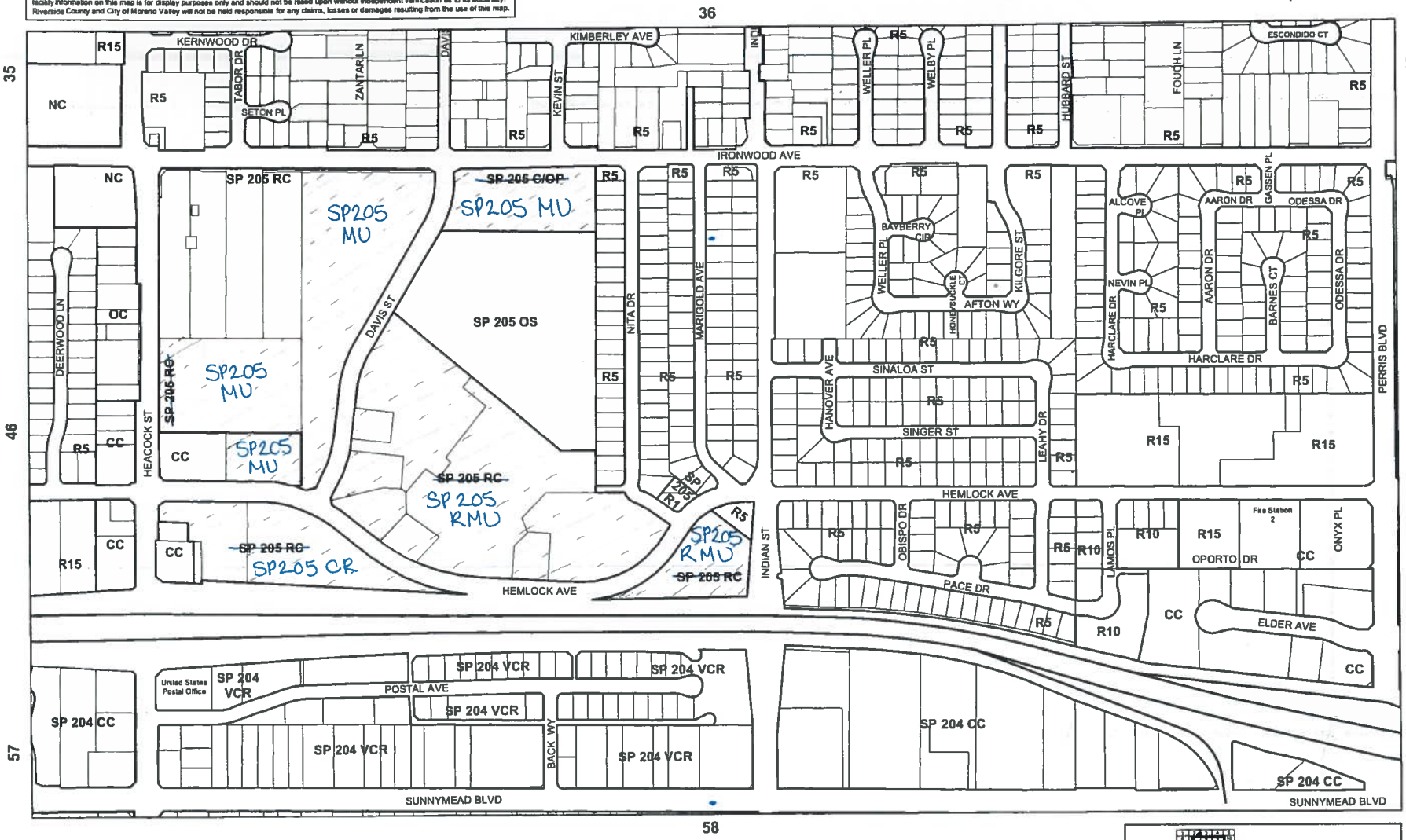
_____
Albert Armijo, Interim Planning Manager

APPROVED AS TO FORM:

_____
City Attorney

ATTACHED: Exhibit A: Proposed Changes to the Zoning Atlas and Exhibit B: Change of Zone Map.

Sep 18, 2012



MORENO VALLEY
WHERE DREAMS SOAR

1 inch equals 400 feet

0 200 400 600 800 Feet

City of Moreno Valley Zoning Atlas

N W E S

Attachment: Exhibit A - Change of Zone Map [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205

PLANNING COMMISSION RESOLUTION NO. 2018-16

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY RECOMMENDING THAT THE CITY COUNCIL ADOPT AN ORDINANCE APPROVING APPLICATION NO. PEN16-0015: AN AMENDMENT TO THE FESTIVAL SPECIFIC PLAN 205, TO UPDATE THE SPECIFIC PLAN TEXT FOR THE SPECIFIC PLAN AREA FOR VARIOUS PARCELS TOTALING APPROXIMATELY 63.78 ACRES, AND GENERALLY LOCATED EASTERLY OF HEACOCK STREET, AND BETWEEN IRONWOOD AVENUE AND STATE HIGHWAY 60

WHEREAS, the applicant, LCG MVF, LLC, filed Application No. PEN16-0015 (P15-036), requesting an amendment to the Moreno Valley Industrial Area Specific Plan 205, as described in the title of this resolution and the attached Exhibit A; and

WHEREAS, the application has been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, the City has prepared an Initial Study and Mitigated Negative Declaration consistent with the California Environmental Quality Act (CEQA) based on a thorough analysis of potential environmental impacts; and

WHEREAS, upon completion of a thorough development review process the project was appropriately agendized and noticed for a public hearing before the Planning Commission of the City of Moreno Valley (Planning Commission); and

WHEREAS, the public hearing and environmental notice for this project were published in the local newspaper on February 18, 2018. In addition, the Notice of Intent to Adopt a Mitigated Negative Declaration was sent to the State Clearinghouse and other outside agencies more than 30 days prior to the public hearing on the project. Public notice was sent to all property owners of record within 300 feet of the project site on March 8, 2018. The public hearing notice for this project was also posted on the project site on March 9, 2018; and

WHEREAS, on March 22, 2018, the Planning Commission of the City of Moreno Valley held a public hearing to consider the application; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred.

WHEREAS, a Mitigated Negative Declaration has been completed consistent the requirements of the California Environmental Quality Act and is being recommended for certification prior to action on the Specific Plan Amendment, the General Plan Amendment and the Change of Zone; and

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the Planning Commission of the City of Moreno Valley as follows:

A. This Planning Commission hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this Planning Commission during the above-referenced meeting, including written and oral staff reports, and the record from the public hearing, this Planning Commission hereby specifically finds as follows:

1. **Conformance with General Plan Policies –** The proposed specific plan amendment is consistent with the General Plan, and its goals, objectives, policies and programs.

   FACT: The proposed Specific Plan Amendment is a comprehensive update that applies to the Specific Plan text. The proposed Specific Plan amendment to the Festival Specific Plan (SP205) addresses all of the required elements of a Specific Plan. With the adoption of the General Plan Amendment as proposed, the Specific Plan text as proposed would be consistent with the General Plan.

   The proposed modifications to the standards of the Festival Specific Plan 205 do not conflict with the goals, objectives, policies or programs of the General Plan.

2. **Conformance with Specific Plan Policies –** The proposed Specific Plan Amendment is internally consistent with the Moreno Valley Festival Specific Plan.

   FACT: The proposed Specific Plan Amendment to the Festival Specific Plan (SP205) provides an update and modification to the standards for development included in the approved Specific Plan.

   The Specific Plan as modified by this amendment will be consistent with all of the Specific Plan requirements identified in Chapter 9.13 of the City's Municipal Code. The amendment to the Specific Plan development standards includes all the required elements of a Specific Plan as mandated in Section 65451 of the Government Code. The primary change to the Land Use exhibit is from retail commercial to a Mix of Uses category for Planning Areas I, II, and III, and Retail/Mix of Uses for Planning Areas IV, VII, and VIII, and to Commercial Retail for Planning Area IV. There is no change in designation for Planning Areas V.

   The Specific Plan Amendment will not apply to the parcels at the southeast of corner of Ironwood Avenue and Heacock Street as

identified in the Land Use Plan exhibit on page 21 of the Specific Plan Amendment text (Exhibit A).

3. **Health, Safety and Welfare –** The proposed specific plan amendment will not be detrimental to the public health, safety or welfare.

   FACT: The proposed Specific Plan Amendment will not result in unacceptable levels of protection from natural and man-made hazards to life, health, and property and is therefore consistent with General Goal 9.6.1.

   The Specific Plan Amendment, General Plan Amendment, and Change of Zone applications were considered and analyzed in the Initial Study/Mitigated Negative Declaration prepared for the project. The project includes an update to the Specific Plan text applying to approximately 64 acres of the Specific Plan. The Mitigated Negative Declaration has proposed mitigation measures in several areas including Biological Resources, Cultural and Tribal Resources, Greenhouse Gas Emissions, noise impacts, and Transportation and Circulation impacts. The mitigation measures for Greenhouse Gas emissions will also further the reduction of impacts on air quality.

   Based on the analysis, with the implementation of the mitigation measures, the Specific Plan will not have the potential to degrade the quality of the environment, or adversely affect humans, either directly or indirectly. Further, with the adoption of the mitigation measures, the project will not result in impacts that are individually limited, but cumulatively considerable, when considering planned or proposed development in the immediate vicinity, or to achieve short term goals to the disadvantage of long-term environmental goals.

BE IT FURTHER RESOLVED that the Planning Commission **HEREBY APPROVES** Resolution No. 2018-16, and **RECOMMENDS** that the City Council:

1. Adopt a City ordinance approving the Festival Specific Plan Amendment (SP205) document, attached as Exhibit A.

APPROVED this 22nd day of March, 2018.

_____
Jeffrey Barnes
Chair, Planning Commission

ATTEST:

_____
Albert Armijo, Interim Planning Manager
Secretary to the Planning Commission

APPROVED AS TO FORM:

_____
City Attorney

ATTACHED: Specific Plan Amendment text and map

THE MORENO VALLEY FESTIVAL ®

AMENDMENT TO SPECIFIC PLAN 205

February 15th, 2018

City of Moreno Valley
Riverside County, California

Adopted:

Date: _____

Ordinance: _____

PROJECT TEAM

CONSULTANTS:

Blodgett Baylosis Environmental Planning
Marc Blodgett
P.O. Box 5037
Hacienda Heights, CA91745
Bus: (626)-336-0033
E-mail: blodgett.marc@gmail.com

Thomas Breitkreuz – Owner's Development Consultant
711 Chestnut Ave
Redlands, CA 92373
Bus: (909) 2393482
E-mail:breitkreuz@roadrunner.com

ARCHITECT:

National Engineering & Consulting Inc.
Contact: Michael Santillan, Architect
27 Orchard
Lake Forest, CA 92630
Bus: (949) 716-9990
E-mail: *Michael.Santillan@nationaleng.com*

LANDSCAPE ARCHITECT:

Scott Peterson, ASLA
2883 Via Rancheros Way
Fallbrook, CA 92028
Bus: 760 842-8993
E-Mail: *scott@splainc.com*

CIVIL ENGINEER:

Jeff Meiter, LS, RCE
President
Valued Engineering, Inc.
180 N. Benson Avenue, Suite "A"
Upland, CA 91786
Bus: (909) 982-4601
E-mail: www.valued-eng.com

TRAFFIC CONSULTANT:

Rawad Hani & Rudy Garcia
Transpo Group
603 N Parkcenter Drive, Suite 108
Santa Ana, CA 92705
Bus: 949.656.7925
Email: rawad.hani@transpogroup.com | rudy.garcia@transpogroup.com

CONCEPT RENDERING

Note: The renderings, photographs, and illustrations contained herein present the general vision and intent for future development. As the project progresses to actual construction, precise plans, and design specifications consistent with these illustrations will be submitted to the City of Moreno Valley for review and approval prior to the issuance of construction permits.

TABLE OF CONTENTS

1.2 The "Moreno Valley Festival"

This specific plan document is a modification to the existing "Moreno Valley Festival" Specific Plan/EIR (SP-205) which was approved and certified by the City Council of Moreno Valley on October 27 1987.

A later Phase-III included in Amendment 3, with a "Specific Plan Boundary Area" of 81.5 acres was approved in 1991 where the land use was re-targeted to more commercial retail development uses.

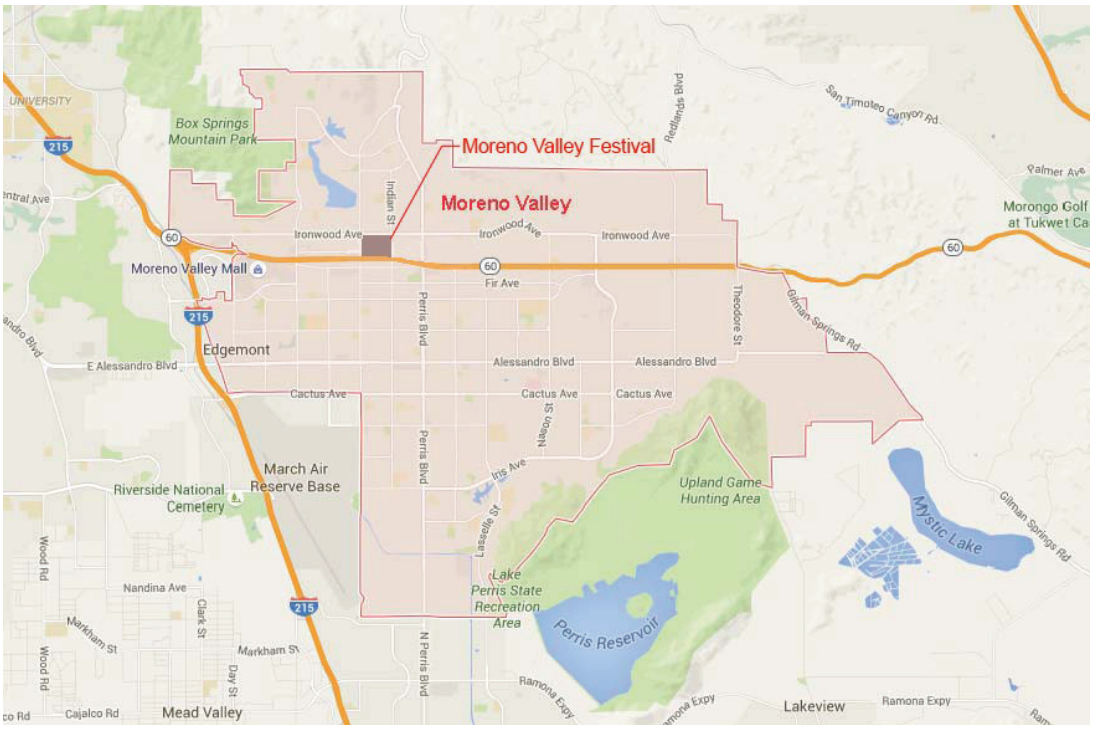
The purpose of this amendment is to modify the Adopted Specific Plan as a means to promote a wider range of land uses and development to address current development trends. The expanded range of allowable uses will include land use designations such as commercial, retail, business park, office and medical and related uses.

The "Moreno Valley Festival" Specific Plan **total boundary area** covers approximately **63.78 acres** in the City of Moreno Valley, California. The "Moreno Valley Festival" boundary plan is located;

- Easterly of Heacock Street;
- Between Ironwood Avenue and Hemlock Avenue; and
- One block West of Nita Dr.

The 9.96 acre privately owned property located at the southeast corner of Ironwood Avenue and Heacock Street is part of the original adopted Specific Plan (SP 205). This property is not part of the proposed Plan Amendment. The owner applicant shall work in a collaborative manner with the owner of the 9.96 acre privately owned site to ensure conformity and compatibility of access for a more efficient and uniform design, if the product type and uses create a mutually beneficial opportunity. In addition there are two parcels located within the Plan Amendment that are under separate public ownership. A smaller portion (1.84 acres) of Planning Area 3 is currently owned by the Eastern Municipal Water District (EMWD). Planning Area 5 in its entirety is owned by the City of Moreno Valley and is used for storm water retention. The Plan Amendment does not contemplate any change in the use of the Regional storm water retention basin.

Note:
For purposes of consistency, this document shall refer to this project as **"Moreno Valley Festival" ("MVF")** rather than "Festival at Moreno Valley" as it has been referred to in the Specific Plan and Specific Plan Amendments.



***Note** all maps and illustrations are shown enlarged in the appendix.

Figure 1-1 Regional Map

1.3 Specific Plan Overview

The "MVF" is a master planned development including State Highway oriented commercial, retail, business park, office and medical and other related uses. This high quality project includes a Mix of Uses that been phased to respond to the employment and community service needs of a growing local and regional population base. The different land uses of this development are being harmoniously designed, with care being taken to successfully mitigate any sensitive development issues.

The "Moreno Velley Festival" Specific Plan includes the following land uses;

- Retail Commercial
- Commercial Office and medical
- Business Park District
- Related Uses
- Detention Basin/Open Space

During the original planning process for the "MVF" (SP 205), consideration was given to all public utility and infrastructure needs associated with the proposed project. The majority of the infrastructure has been installed per the approved specific plan including all of Hemlock Avenue and approximately two-thirds of Davis Street. All future public utility and infrastructure shall be installed according to Title 9 and the requirements of this Specific Plan. These are being installed on

a phased basis as logical and orderly extensions of area-wide master planned facilities. Implementation of roadways and infrastructure to serve the project site will occur according to development needs.

The "MVF" Specific Plan has been adopted pursuant to Government Code Section 65450 which grants authority to cities to adopt specific plans for purposes of implementing the goals and policies of their General Plans. The Government Code sets forth the minimum requirements and review procedures for specific plans including the provision of a land use plan, infrastructure and public services plan, criteria and standards for development, and implementation measures.

The Specific Plan and Amendments complies with the City of Moreno Valley's Municipal Code (Chapter 9.13) governing amendments of the specific plans content and procedures for their adoption and enforcement.

1.4 Specific Plan Vision and Objectives

This document will provide a comprehensive description of specific guidelines for development within the "MVF" Specific Plan area as well as to establish a logical framework for the creation of a high quality Mix of Uses development. The goal is to ensure an aesthetically pleasing and integrated master planned project which shall create a desirable working and shopping, environment to enhance the community's overall image. Objectives to accomplish these goals are:

- Create a cohesive development by integrating commercial, retail, business park, office and medical and related uses;
- Provide opportunity for creativity within individual projects; and
- Establish an appropriate buffer relationship among potential land uses and between non-residential uses and existing residential neighborhoods.

The Specific Plan will establish the zoning criteria that will guide the orderly development of the "MVF" projects and carry out the goals of the City's General Plan. Included are development standards for integrated site planning, architecture, and landscaping. These standards establish a consistent design concept that produces a clear image and a sense of prestige, efficiency and integrity for the "MVF" and each project within.

This Specific Plan implements all applicable elements of the General Plan and includes detailed information about the area's infrastructure improvements such as roads, water, sewer, utilities and flood control facilities.

Figure 1-2 Specific Plan Edge Treatment Areas

1.3.1 Development Goals

The Specific Plan creates planning strategies and development standards specifically for the property to incorporate its unique advantages, adapt to its constraints, enhance the economic growth needs of the City, and create consistent and compatible land uses for the area in an environmentally responsible manner. Development of the "MVF":

- Provides the land use designations and infrastructure plan necessary to support the City's Economic Development Action Plan,
- Creates a project that will provide a balanced approach to the City's responsibilities of fiscal viability, economic opportunity and environmental integrity,
- Provides numerous ongoing employment opportunities,
- Provides hundreds of construction job opportunities during the project's build-out phase,
- Establishes architectural and landscape design guidelines for the project, and
- Provides appropriate transition between the project and adjacent uses.

1.3.2 Specific Plan Approval

The Specific Plan No. 205 was approved by the City of Moreno Valley on 1991-02-21COA (Amendment #3). The document will supersede the Specific Plan text and all previous amendments for the designated planning areas, which includes development standards for a cohesive user-friendly specific plan document.

All development proposed within the "MVF" will be developed consistent with the development standards and design guidelines contained herein. The review process shall be as specified in Title 9 of the Municipal code.

1.3.3 Green Building-Sustainable Development

Construction of the "MVF" will be in conformance with California's "Cal-Green" building regulations, the most stringent, environmentally-friendly building code in the United States. Cal-Green is a comprehensive, far-reaching set of regulations which mandate environmentally-advanced building practices and regulations designed to conserve natural resources and reduce greenhouse gas emissions, energy consumption and water use.

The project shall incorporate sustainable design features to further reduce its environmental footprint, including but not limited to:

- Reduced water use for landscape irrigation,
- Accommodate the use of alternative means of transportation,
- Use recycled building materials to the extent feasible,
- Use local sources of building materials to the extent feasible,
- Minimize the use of impervious paved surfaces throughout the project,

1.3.4 Sense of Place

The Specific Plan establishes a strong and unique identity for the "MVF" Site. The Specific Plan guides the establishment of the project's sense of place by:

- Applying comprehensive, overall project design guidelines for architecture and project landscaping,
- Using streetscapes, banners, entry monuments, and architecture to strengthen the project identity.

1.3.5 Project Infrastructure

The Specific Plan identifies the backbone infrastructure systems needed to serve the project. Preliminary plans illustrate the proposed expansion of water, sewer, drainage and utility facilities. The infrastructure plan also provides for vehicular (car, truck and bus) and non-vehicular (bicycle and pedestrian) circulation.

Figure 1-3 The Specific Plan provides for the establishment of conceptual design features for "MVF"
Corner of Hemlock Avenue and Davis Street

1.4 Existing Setting

1.4.1 Existing Land Use

"MVF" Specific Plan covers approximately **63.78 acres** in central Moreno Valley in Riverside County, California. The project is located between Heacock Street to the West; Indian Street to the East; State Highway 60 to the South; Ironwood Avenue to the North.

Figure 1-4 Surrounding Land Uses

Surrounding land uses include:
North: Single Family Residential.
South: SR-60, Commercial and a residential development.
East: Single Family Residential uses.
West: Retail Commercial development to the west including the northwest corner at Ironwood Ave and Heacock St. and on the southwest corner at Hemlock Ave and Heacock St.

1.4.2 Existing Fault Zones

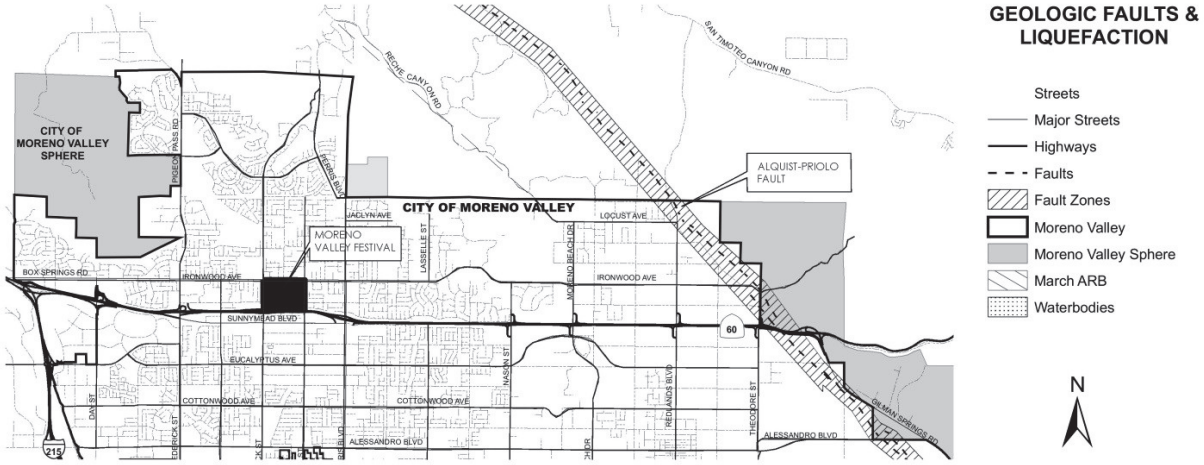


Figure 1-5 Existing Fault Zones

Based on the preliminary geotechnical studies conducted for "MVF" property ***Figure 1-5*** "Existing Fault Zones" illustrates the location of the Alquist-Priolo Fault Zone in relation to the site and shows where several concealed, inferred, and known faults are believed to exist. The Project Site is not in a fault zone.

Prior to the approval of all project-specific development proposals, detailed geotechnical investigation and analysis will be prepared and submitted to the City for review. The results of those studies will be incorporated into the detailed plans for each project.

2.2 "MVF" Land Use Designations

The "MVF" Specific Plan implements the development of a master-planned project specifically designed to support specified uses by incorporating landscape and architectural standards, project-wide criteria for streets, drainage, public infrastructure, lighting and signage, and project features responsive to the needs of the Moreno Valley community.

The Specific Plan includes a land use plan providing for the following land use designations: Mix of Uses Development (MU), Commercial/Retail Development (CR), Retail Mix of Uses (RMU) and Open Space (OS).

A Circulation Plan integrates a roadway network that moves cars and trucks into and through the "MVF" in a safe, efficient manner. An Infrastructure Plan is included that addresses the current status of local infrastructure services such as water, sewer, storm drain, and electricity and telephone/cable TV and outlines the backbone improvements necessary for these systems to serve the "MVF" project. Guidelines for landscaping and architectural design are included to ensure that a distinct consistent aesthetic theme is realized throughout the project.

The Plan also establishes an implementation program that defines the processes and procedures for the review and approval of project-specific development proposals, carrying out the purpose and intent of the Specific Plan. All of these elements function together in order to create a comprehensive development program which will help ensure that the "MVF" has a positive contribution to Moreno Valley.

Mix of Uses - (MU)

Various projects located within "MVF" for any or all of the areas I, II, III, VI, VII & VIII will have the potential to be developed as a Mix of Uses development.

The Mix of Uses development is a blend of one or more uses located in one planning area or within the MVF with the appropriate buffers and separations. Development of these areas will be in accordance with The Moreno Valley development standards per Title 9 of the Moreno Valley Municipal Code. These developments will be submitted to the City as part of a cohesive plan and may include commercial, retail, business park, office and medical and related uses, which will be individually developed as part of a cohesive integrated design.

Retail/ Mix of Uses - (RMU)

The projects along Hemlock Ave. will be characterized by retail/ commercial and related uses consistent with the existing development. This area shall comply with the City of Moreno Valley development standards and permitted uses.

The previous Specific Plan identified phases of the development, of which only the first phase was completed. This development occurred in the portion of the development identified as follows:

- A portion of area IV developed as commercial/retail
- Area VI developed as retail/restaurant
- Area VII developed as commercial/ retail

Some of the existing developed buildings are vacant and/or in need of renovation and repair. The existing retail area and signage within area VII will be redesigned per this plan. The specified areas can be developed in accordance with Title 9 Development Standards of the City of Moreno Valley Municipal Code, General Plan and according to this plan. Open Space - (OS)

The OS designation identifies approximately a **12.89 acre** area in the northeastern portion of the site. The OS designation is an existing City owned permanent, preserved, Open Space and detention basin for Storm Water Runoff. Any improvements to this space shall be initiated by the City. It is intended that the open space be undisturbed and used as a buffer to the residential and other development areas.

"MVF" Planning Areas

The below table illustrates the "approximate" overall land area for each "Planning Area" reflected in ***Figure 2-1 Land Plan Use***.

Planning Area I	Mix of Uses	+/- 7.36 acres
Planning Area II	Mix of Uses	+/- 3.84 acres
Planning Area III	Mix of Uses	+/- 9.81 acres
Planning Area IV	Retail/ Mix of Uses	+/- 13.92 acres
Planning Area V	Regional Detention Basin	+/- 12.89 acres
Planning Area VI	Retail/ Mix of Uses	+/- 6.08 acres
Planning Area VII	Retail/ Mix of Uses	+/- 6.44 acres
Planning Area VIII	Retail/ Mix of Uses	+/- 3.44 acres
Total Planning Areas		**+/- 63.78 acres**

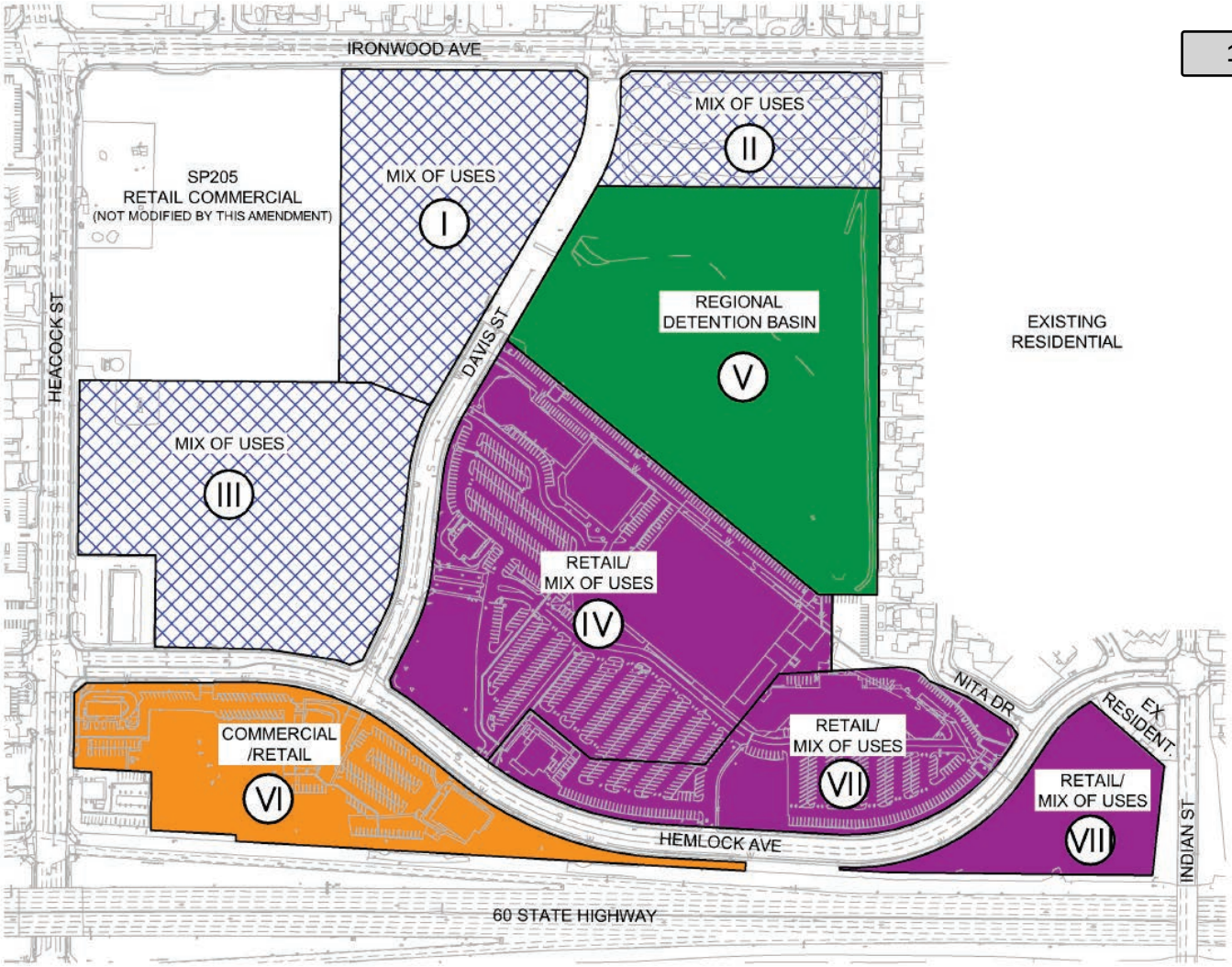


Figure 2-1 Land Use Plan

2.3 Approved Uses

Specific uses are identified in **Section 5.1.3.2** of this Specific Plan.

2.4 Special Edge Treatment Areas

The Specific Plan includes designated areas where special setbacks, facilities, grading and landscaping that creates special edge treatment areas between the "MVF" and adjacent, existing land uses. These edge areas are shown on ***Figure 4-2*** and detailed cross sections are shown in **Section 4.2.4.**

2.5 Proposed Land Use Plan

The Specific Plan includes a land use plan that will indicate the location and extent of permitted land uses and development within the geographic area governed by the Specific Plan Amendment. The Specific Plan Amendment facilitates the development of a master-planned project specifically designed to support specified uses by incorporating landscape and architectural standards, project-wide criteria for streets, drainage, public infrastructure, lighting and signage, and project features responsive to the needs of the Moreno Valley community. The Specific Plan Amendment and land use plan identifies the following land use designations described below and on the following pages:

Community Commercial (CC Zone) The primary purpose of the community commercial (CC) district is to incorporate development of general shopping needs of area residents and workers with a variety of business, retail, personal and related or similar services.

Office Commercial (OC Zone) The primary purpose of the office commercial (OC) district is to allow for the establishment of business, corporate and administrative office, as well as commercial services which are supportive to major business developments. Retail facilities which support the office developments are permitted, subject to limitations specified in this section.

Office (O Zone) The primary purpose of the office (O) district is to create areas for the establishment of park-like, office-based working environments for general business, corporate, professional and administrative offices. It is the further intent of the district to integrate setbacks, landscaping and architectural treatments that ensure the location of such uses is relatively compatible with residential development in the vicinity.

Light Industrial (LI Zone) The primary purpose of the light industrial (LI) district is to establish light manufacturing, light industrial, research and development, warehousing and distribution and multitenant industrial uses, as well as certain supporting administrative and professional offices and commercial uses on a limited basis. This district is intended as an area for light industrial uses that can meet high performance standards.

Business Park (BP Zone) The primary purpose of the business park (BP) district is to provide for light industrial, research and development, office-based firms and limited supportive commercial in an attractive and pleasant working environment and a prestigious location. This district is intended to provide a transition between residential and other sensitive uses and more intense uses.

Open Space (OS) The primary purposes of the open space (OS) district are to provide for low intensity, outdoor-oriented recreational facilities, preserve unique natural and environmentally sensitive areas, and protect and preserve the public health, safety and welfare.

3.1 INFRASTRUCTURE PLAN

The Infrastructure Plan serves as a guide for the development of detailed plans for roadways, domestic water, wastewater, storm water and utilities that will serve the Specific Plan area. The conceptual infrastructure plans generally identify the location of infrastructure facilities within the project. Subsequent subdivisions and site development plans will establish the exact size and location of all such facilities.

3.2 Circulation

The Circulation Plan dictates the standards and guidelines that ensure the safe and efficient movement of people and vehicles into and through the "MVF," addressing light trucks and passenger vehicles, heavy trucks, public transit, and non-vehicular circulation (pedestrians and bicycles). The Circulation Plan **Figure 3-1.2** includes new streets and the extension of existing streets.

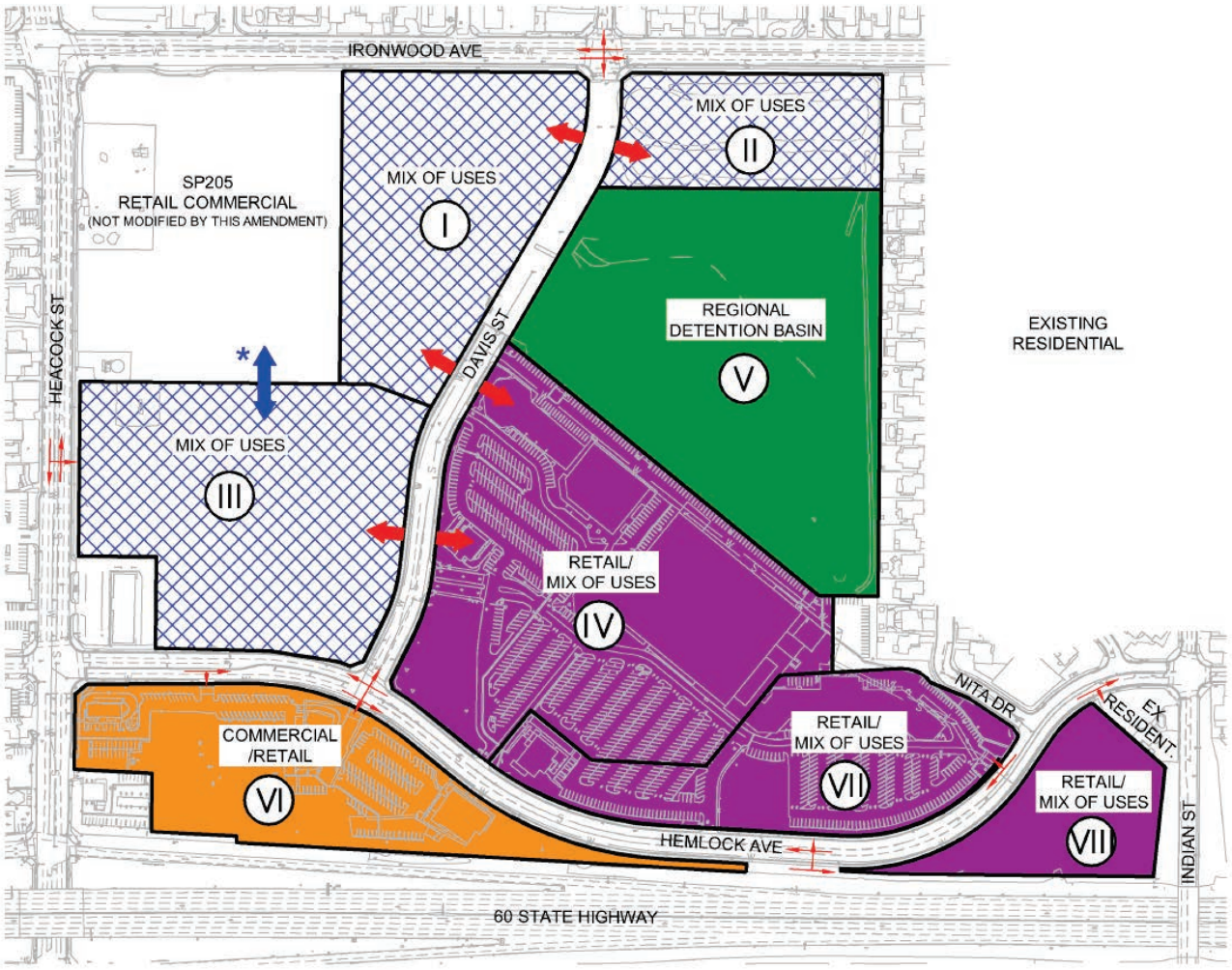


Figure 3-1.2 Circulation Plan

*Pedestrian and/ or vehicular access for the adjoining parcels will be determined in the future to ensure conformity and compatibility if the product type and uses create a mutually beneficial opportunity.

3.2.1 Traffic Analysis

Background

The proposed Specific Plan will review potential renovations to the approximately 200,000 square feet of existing retail and commercial land uses and the future development of the remaining land parcels. The trip generation for each alternative is provided with the highest trip generation scenario being analyzed for this site. The project site will have access to Ironwood Avenue from Davis Street, Hemlock Avenue from Davis Street, Heacock Avenue via Hemlock Avenue.

3.3 State Highway

State Route 60 (SR-60) parallels the Southerly border of the "MVF." An existing interchange is adjacent to the project and an off-ramp is located at Heacock Street. Heacock Street will be the primary connection to SR-60 for the "MVF."

3.4 Vehicular Circulation

3.4.1 Passenger Car and Truck Circulation

The "MVF" is designed to enhance easy vehicular access to the project via three main entry points around the site. "MVF" will be serviced by the existing roads with access from Heacock Street on the west (a City designated truck route) and Indian Street (a residential street) to the east via Hemlock Ave. To the north, the site is adjacent to Ironwood Ave (a City designated truck route) and will be accessed via Davis Street which will be continued from its proposed location on the previously approved Specific Plan. Access for cars and trucks is provided via the extension of Davis Street in the central portion of the project running North to South.

3.4.2 Street Designations

A network of arterial and collector streets serve the "MVF." Their primary function is to serve traffic within the project area, but some may augment regional connectivity through the project. Street sections within the project are shown on the following pages. Additional rights-of-way may be required for turn lanes. Turn lanes are provided in the median of all arterial streets, subject to City approval.

3.4.3 Mass Transit Circulation

All existing streets in the "MVF" are designed to accommodate bus service. Regional bus service in Western Riverside County is provided by the Riverside Transit Agency (RTA).

Route 11 currently circulates west to east along Hemlock Ave., and south to north to Perris Blvd with a stop at the corner of Perris Blvd. and Hemlock Ave. The bus then continues east to West along Ironwood Ave. This route is reversed for the return trip.

There are currently no stops within the area of the Specific Plan. RTA will determine if and when bus service will be modified. Facilities to support future bus stops to the project will be pursuant to RTA's "Design Guidelines for Bus

Transit" and will be incorporated, as needed, into street design in connection with site-specific development proposals. Covered shelters may be required if RTA plans a bus stop along the Specific Plan area. A standard design for shelters shall be reviewed and approved by RTA and the City prior to installation of the first shelter.

3.3.5 Emergency Access

An emergency vehicular access connection will be provided from "MVF" to public roads to the west. This connection will also be designed to accommodate pedestrian and bicycle use to facilitate non-vehicular circulation within the "MVF" project.

3.4 Non Vehicular Circulation

3.4.1 Pedestrian Circulation

The "MVF" incorporates a network of sidewalks on all project streets, as required to comply with ADA and other applicable codes, to connect all areas of the project to surrounding areas and to interconnect all buildings within the project. Details of these sidewalks will be reviewed and approved by the City in connection with subdivision and site development approvals.

3.4.2 Bicycle Circulation

Details of these facilities will be established with subdivision and site development approvals. Bikeways will be included only for the newly developed street improvement plans, if required, consistent with City requirements.

3.5 Utilities

3.5.1 Water

Eastern Municipal Water District (EMWD) provides water service to the "MVF," receiving its water from Metropolitan Water District (MWD) and local groundwater wells. Development of the proposed project site will have adequate water supply from Eastern Municipal Water District. There is an existing 16" A.C.P. water main along Hemlock Avenue, 16" PVC water main along Davis Street and 12" A.C.P. water main goes through the existing Festival development.

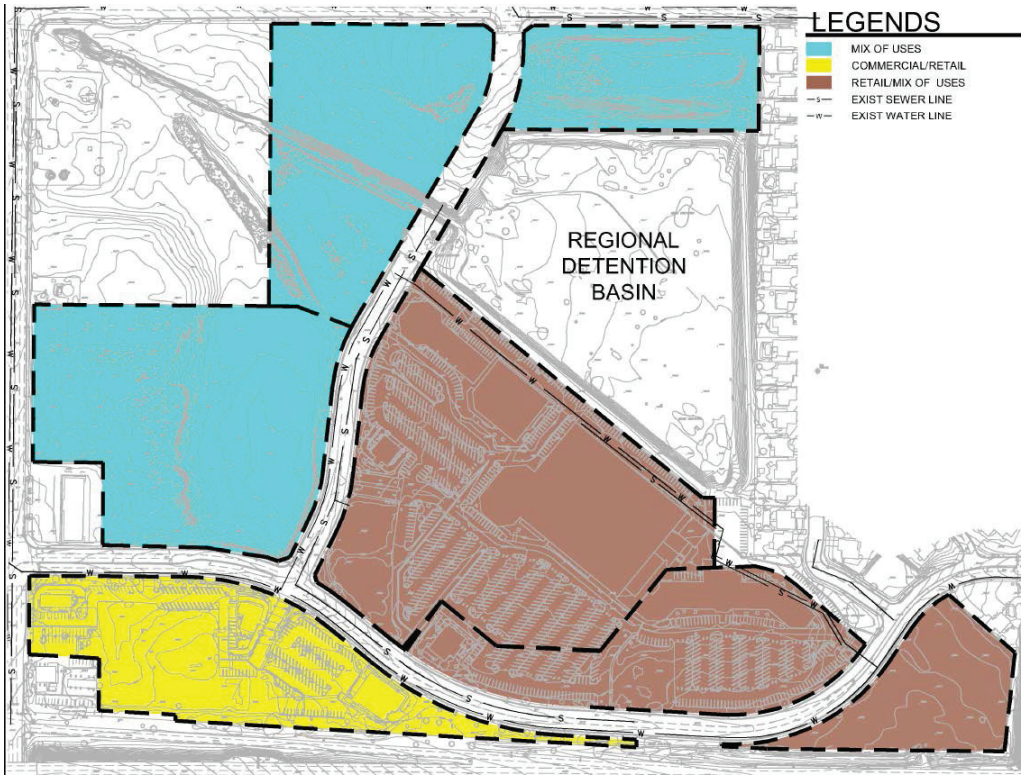


Figure 3-5.2 Water Service Site Plan for Development

3.5.2 Sewer

Eastern Municipal Water District (EMWD) provides wastewater service to the "MVF" area. Wastewater generated from the "MVF" area will be treated at EMWD's Moreno Valley Regional Water Reclamation Facility (MVRWRF). The MVRWRF, located in the southwestern portion of the City near Kitching Street and Mariposa Avenue, has the capacity to treat 16 million gallons per day (MGD) of wastewater, which will accommodate the needs of the "MVF" project. The primary trunk sewer line serving the "MVF" area is located in Heacock Street. This trunk sewer line continues in a southerly direction in Heacock Street and then east along Mariposa Avenue conveying wastewater to the MVRWRF.

3.5.3 Storm Drain

The "MVF" Specific Plan area is within the Middle and Lower San Jacinto River watershed which is part of the larger Santa Ana River watershed. The storm water runoff within the Sunnymead Drainage Area generally flows southeasterly and the subarea boundary ends at the Perris Valley Storm Drain.

The Riverside County Flood Control and Water Conservation District (RCFCWCD) is the responsible agency for the project area's regional flood control system. The Festival project is adjacent to the Indian Street Detention basin located near the eastern edge of the site. There are two 102" Storm Drain Line running along Ironwood Avenue and south on Davis Street which collects storm water north of Ironwood Avenue and discharges into the detention basin.

The detention basin outlet is conveyed by a 12' x 4.5' Reinforced Concrete Box that connects to Perris Storm Drain and discharges into Canyon Lake. The watershed drainage continues southwest to Lake Elsinore downstream and ultimately goes northwest to the Santa Ana River.

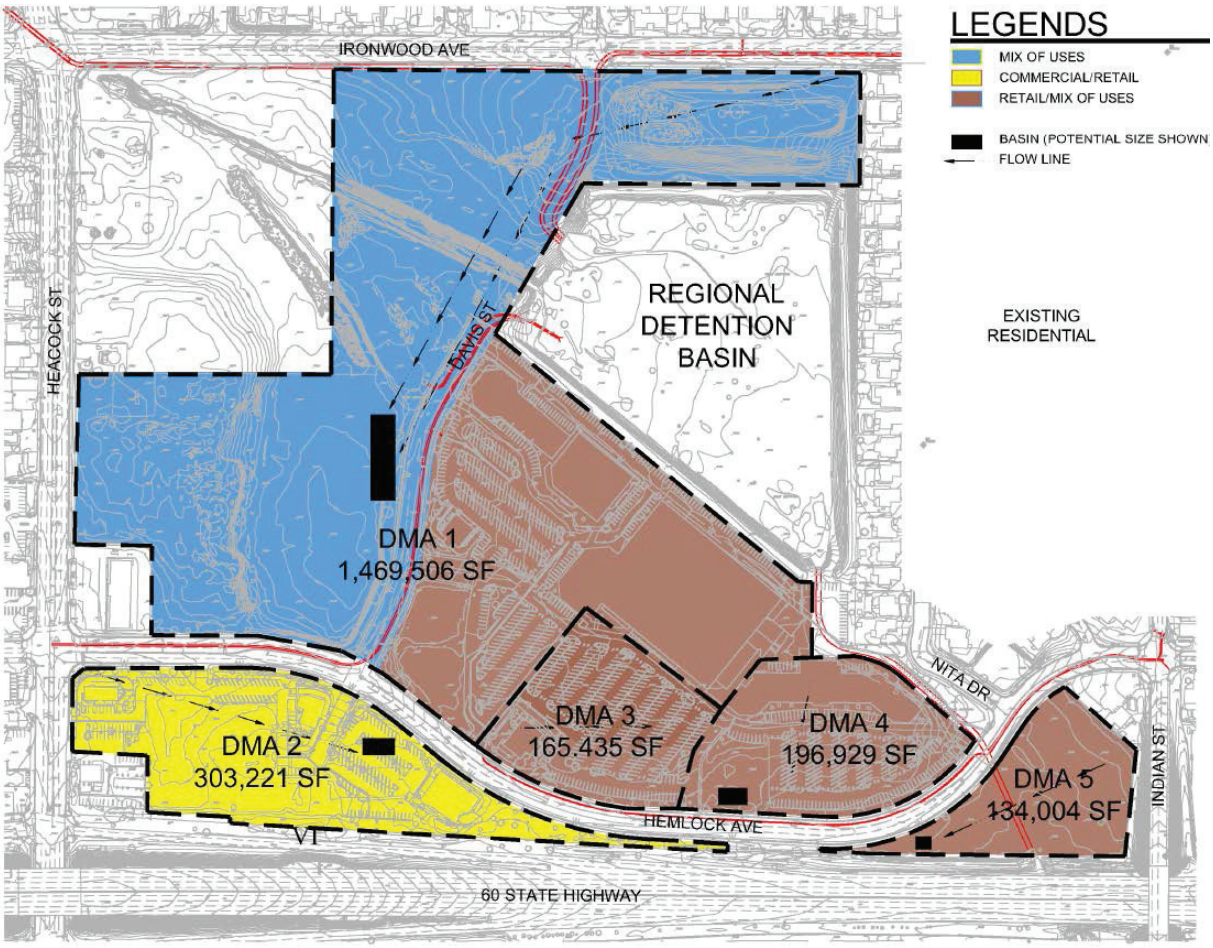


Figure 3-3 Storm Drain Plan

The Indian Street detention basin will not be part of the improvements. Additional site specific, storm drain improvements will need to be added for the project. A system of underground drainage lines and detention basins will convey the storm water runoff and manage the increased flow due to the proposed development. At each stage of development, the peak flows at downstream discharge points at the southerly project boundary will not exceed the peak flows for the existing condition.

Prior to approval of any subdivision or Plot Plan adjacent to Indian Street Detention Basin, a concept plan for the entire drainage feature shall be submitted to and approved by the City. The concept plan shall include proposed grading, improvements, landscaping, drainage facilities, signage, vehicular/pedestrian access, and any other proposed improvements. Site specific projects shall be consistent with this concept plan.

Based on the latest Flood Insurance Rate Map (FIRM) published by the Federal Emergency Management Agency (FEMA), the project site is not located within a 100-year floodplain.

3.5.4 Utility Conditions

Existing Electrical Service

Southern California Edison (SCE) is the electricity provider for the "MVF." SCE has an existing underground electrical service along Hemlock Avenue, Davis Street and Heacock Street. An electrical substation is located at the northeast corner of Heacock Avenue and Ironwood Avenue. The substation has an existing distribution of 2.63 Megawatt (MW) and queued generation of 0.21 MW. The projected load for Maxwell Substation is 100.4 MW. SCE has existing 12 kV and 115 kV overhead power lines on the north side of Ironwood Ave.

Existing Natural Gas

Southern California Gas Company (SCGC) is the natural gas provider for the "MVF."

Cable Television

Time Warner Cable currently provides cable television to the "MVF" and vicinity. Existing underground cable television facilities serve the residential area located along Nita Drive and Marigold Avenue. Underground facilities within Davis Street and Hemlock Avenue are in place. Overhead facilities are located along Ironwood Avenue on the north side of the street. Facilities for cable will be made available to all providers.

Proposed Cable and Telecommunications

As development proceeds, cable and telecommunications facilities located along Hemlock will be extended along Davis Street to serve the "MVF" project. These facilities will be underground and may be provided by a number of service franchises.

4.1 OFF-SITE DESIGN STANDARDS

These standards shall apply to those portions of the "MVF" property that are not within development sites; this includes common areas, open space, public areas, streetscapes, etc.

4.2 Off-site Architecture

4.2.1 Objectives

Off-site architecture includes buildings that house infrastructure or public use facilities that serve the "MVF." The architectural design should express the character of the proposed development in a manner that is consistent and enduring with the theme of the development. In order to establish a clear, unified image throughout the "MVF," these structures shall follow the guidelines set forth in Section 5.0 of this Specific Plan. These support buildings shall be designed to align with the "MVF" design guidelines and sense of place.

4.2.2 Ground-mounted Equipment

See Title 9 of the City Municipal code.

4.2.3 Roof-mounted Equipment

See Title 9 of the City Municipal Code.

4.2 Off-Site Landscaping Requirements

The following general criteria will apply to landscaping provided by the Master developer as well as landscaping provided by the individual project developers. The Project Design Guidelines section of this Design Manual offers more detailed information for individual project developers.

- See Title 9 of the City Municipal code.
- All landscape designs shall adhere to the concept depicted in the Landscape exhibits (**Figures 4-2 and 4-3).**

4.2.1 Objectives

A landscape concept has been developed for the "MVF" that will reinforce patterns established by the land use plan to create an identity for the entire project. Various landscape design elements selected for the streetscapes, entries and buffers will be integrated to complement the sense of cohesiveness throughout the development. The primary objectives of the landscape concept plan are as follows:

- Reinforce circulation patterns, entryways, landmarks, and focal points;
- Enhance views and provide meaningful view corridors within the site;
- Foster a buffer between existing residential neighborhoods and other proposed uses;
- Create unity throughout the project by coordinating and limiting the variety of plant and hardscape materials;
- Promote a pleasant, distinctive neighborhood environment; and
- Implement water conservation through the use of drought-tolerant, low water use plant materials and water efficient irrigation systems.
- Adhere to Title 9 of the City Municipal Code.

The landscaping design concept is focused towards:

- Providing a clean visual appearance
- Coordinating the landscaping treatment along State Highway, and surface streets to compliment the circulation system
- Coordinating streetscapes within the "MVF" to unify its general appearance
- Ensuring off-site landscaping design continuity among individual development sites within the "MVF," and
- Minimize long term maintenance.

The following guidelines present parameters for general landscape design, water conservation, and streetscapes. On-site landscaping guidelines are addressed in Section 5.4 of this Specific Plan. See Title 9 of the City Municipal Code for specific Moreno Valley requirements.

4.2.2 Water Conservation Measures

The "MVF" employs an aggressive approach to water conservation. Every element of the landscape program has been evaluated to determine how to achieve the project's landscape goals while maintaining maximum water efficiency. From the formulation of the overall landscape concept, through each level of the design process, to the day-to-day maintenance practices of the installed materials, conservation of limited water resources is a primary focus. At maturity, the landscaping for the "MVF" project will sustain a strong, clean, simple design element, demonstrating the "MVF" commitment to the creation of a sustainable environment.

The landscape program will incorporate the following design elements and practices to minimize the use of limited water resources:

Project Design:

- Design project so that pads, streets and other paved areas drain to landscape areas, medians and parkways.
- Maximize water harvesting, detention and treatment techniques throughout the project.
- Direct rooftop and parking area runoff to bio-swales, basins or landscaped areas.

Landscape Design:

- Develop watershed areas for the project areas in order to manage water harvesting and distribution.
- Calculate estimated runoff from roofs and paved areas to manage water harvesting and detention practices.
- Conduct site-specific analyses of seasonal weather patterns, rain patterns, soils and drainage, grades and slopes, macro and micro climates, solar exposure, prevailing wind conditions, historical evapotranspiration rates and weather station (CIMIS) data.
- Design to meet peak moisture demand of all plant materials within design zones and avoid flow rates that exceed infiltration rate of soil.
- Maximize the use of drought tolerant plant species.

- Select plant palettes tolerant of periodic inundation from storm water runoff.
- Calculate optimum spacing of plants to avoid overcrowding and need for excessive irrigation.

Construction:

- Grade all planting areas to control high intensity rainfall and runoff episodes. Provide riprap at downspouts; create multiple watersheds to disperse water flow. Use surface mulch and straw wattles.
- Provide soil amendment to plant pits based on soil laboratory test results and landscape species;
- Employ a pre-hydration program prior to planting installation to reflect climate and soil conditions.
- Cover all planting areas with a combination of organic and inorganic mulches to be used along with pre-emergent herbicide treatment to control weed growth and soil erosion.
- Install soil moisture sensors in strategic planting zones.
- Require certification that the irrigation system was installed and operates as designed, and conduct a post-installation audit of actual water consumption.
- Provide for supplemental irrigation on an as-needed basis, such as supply lines and valves, quick-connect couplers or water truck service.

Maintenance:

- Establish maintenance guidelines to specify actions to replace dead plants, replenish surface mulch, and remove trash and weeds.
- Regularly monitor all landscaped areas and make adjustments as necessary to assure the health of planted materials and progress toward meeting the project's landscape goals.

Where irrigation is provided:

- Planting zones will be coordinated according to plant type, climatic exposure, soil condition and slope to facilitate use of zoned irrigation systems using reclaimed water systems if available and practical.
- Use best available irrigation technology to maximize efficient use of water, including moisture sensors, multi-program electronic timers, rain shutoff devices, remote control valves, drip systems, backflow preventers, pressure reducing valves and precipitation-rated sprinkler heads,
- Gate values will isolate and shut down mainline breaks,
- Design irrigation systems to prevent discharge onto non-landscaped areas or adjacent properties,
- Restrict irrigation cycles to operate at night when wind, evaporation and activity are at a minimum.

Coverage:

At installation, plant size, density and spacing shall be as specified in approved landscape plans per Title 9 of the City Municipal Code.

All landscape plans shall be reviewed by Eastern Municipal Water District and the City of Moreno Valley.

4.2.3 Streetscapes

Landscaping along public streets is designed to provide a uniform appearance along street frontages, to reinforce the street hierarchy, and to establish identities of place, particularly at intersections within "MVF."

Implementation of the street landscaping will be executed by the developer during the initial stages of development. Trees will be planted along all existing streets within The "MVF" project boundaries, where they do not currently exist. In addition, landscape guidelines have been provided for those streets adjacent to the project's boundaries that will require improvements associated with the development. Low growing plant materials will be added for year-round color and textural interest. Mounded turf and landscaped berms will be used where appropriate to screen undesirable views, such as parking lots.

The design guidelines in this section identify landscape themes for the following streets:

- Hemlock Avenue
- Davis Street
- Heacock Street
- Ironwood Avenue

Most of the Hemlock Avenue and Heacock Street landscape themes already exist in place; the intent of the guidelines is maintain the general overall approach for the existing themes. Locations of illustrative street sections are indicated on the Landscape Concept Plan **Figure 4-2 and Figures 4-4 thru 4-22** for individual plans and sections.

4.2.3.1 General Design Criteria

All landscape design and maintenance within the "MVF" shall comply with the Landscape and Water Efficiency Requirements contained in the Municipal Code and these guidelines, whichever imposes a higher design or performance standard.

1. Trees are required along all street frontages. Trees shall be planted in a single row at spacing of 40 feet on center (Municipal Code Ord. 786 § 2, 2009), according to the criteria for streetscapes given in the following sections.
2. All street trees within street right of way, unless otherwise noted, are to be 24" box size, with a minimum of 8 feet of brown trunk measured from finish grade. Trees in other areas shall be 15 gallon minimum in size but 25% shall be minimum 24" box.
3. Landscaping berms along street frontages may be utilized. Maximum slopes may not exceed 2:1. City maintained areas shall not exceed 3:1.
4. Shrubs along street frontages are to be utilized where possible. (Minimum size at installation is 1 gallon.)

4.2.4 Special Edge Treatment Areas

There are six discrete edge treatment plans in and around the project. The areas are indicated below:

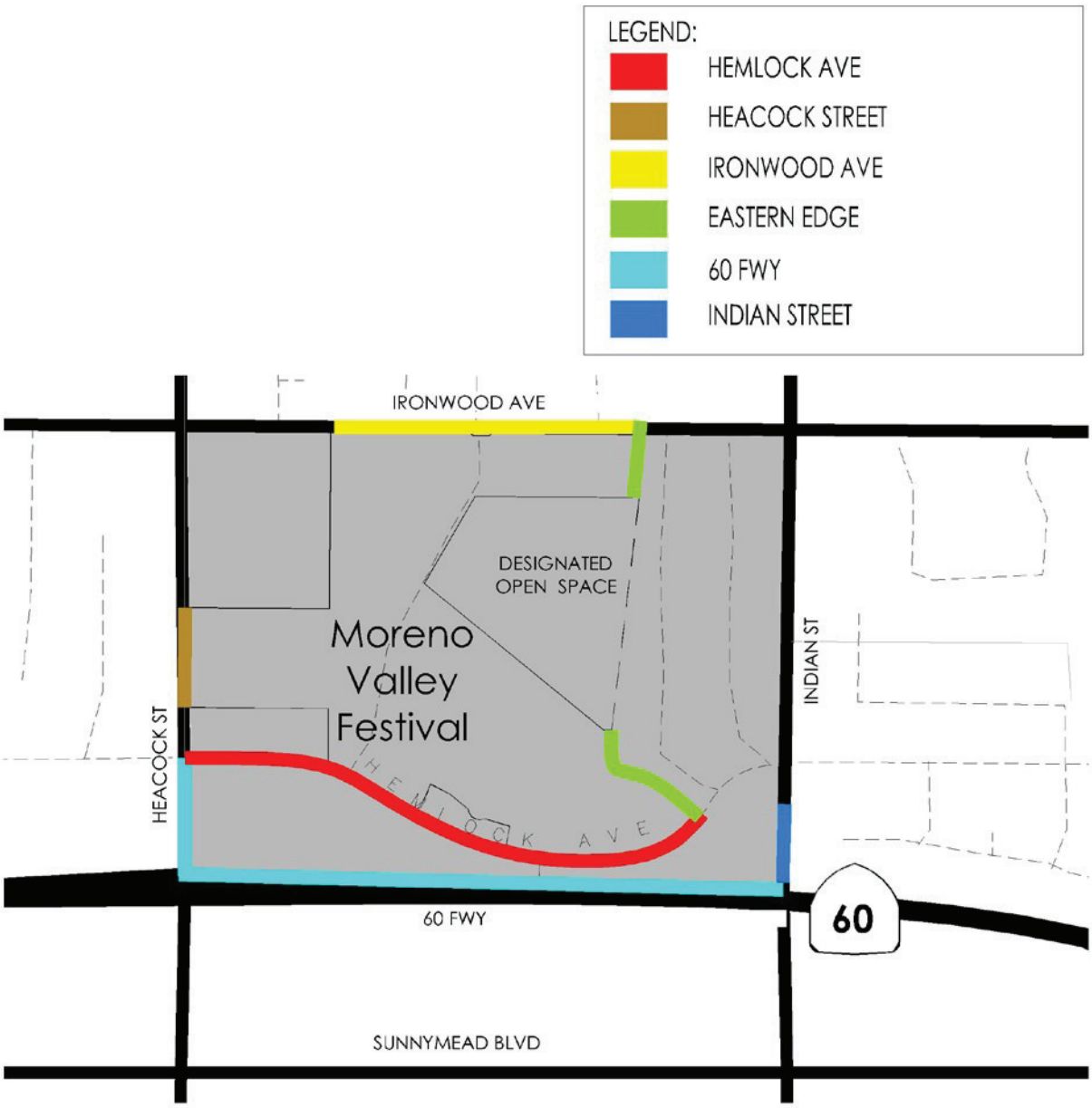


Figure 4-1 Specific Edge Treatment Areas Design Criteria

Figure 4-2 Special Edge Treatment Map (key map for following exhibits)

EVERGREEN COLUMNAR TREES

PINUS CANARIENSIS	CANARY ISLAND PINE
TRISTANIA CONFERTA	BRISBANE BOX

EVERGREEN CANOPY TREES

RHUS LANCEA	AFRICAN SUMAC
SCHINUS MOLLE	CALIFORNIA PEPPER
QUERCUS ILEX	HOLLY OAK

STREET TREES

THE FOLLOWING TREES ARE BEING PROPOSED FOR EACH INDIVIDUAL STREET. ALL TREES SHALL BE SPACED AT 30'-0" O.C. 15 GAL. & 24" BOX SIZES

*** HEMLOCK AVENUE**	
KOELREUTERIA PANICULATA	GOLDEN RAIN TREE
*** HEACOCK STREET**	
PINUS CANARIENSIS	CANARY ISLAND PINE
*** IRONWOOD AVENUE**	
PLATANUS ACERIFOLIA	LONDON PLANE TREE
*** DAVIS STREET**	
TRISTANIA CONFERTA	BRISBANE BOX
JACARANDA MIMOSIFOLIA	JACARANDA TREE
*** INDIAN STREET**	
MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA

ENTRY ACCENT TREES

BAUHINIA VARIEGATA	PURPLE ORCHID TREE
CERCIDIUM 'DESERT MUSEUM'	PALO VERDE TREE
WASHINGTONIA ROBUSTA	MEXICAN FAN PALM
LAGERSTROEMIA INDICA	CRAPE MYRTLE

FLOWERING ACCENT TREES

CERCIS OCCIDENTALIS	WESTERN REDBUD
RHAPHIOLEPIS 'MAJESTIC BEAUTY' - STANDARD TRUNK	INDIAN HAWTHORN
LAGERSTROEMIA INDICA	CRAPE MYRTLE
ACACIA BAILEYANA	BAILEY ACACIA

SKYLINE TREES

PINUS HALEPENSIS	ALEPPO PINE
GLEDITSIA TRIACANTHOS	HONEY LOCUST
TRISTANIA CONFERTA	BRISBANE BOX

LARGE SCALE TREES

ALBIZIA JULIBRISSIN	MIMOSA
JACARANDA MIMOSIFOLIA	JACARANDA
PINUS HALEPENSIS	ALEPPO PINE
SCHINUS MOLLE	CALIFORNIA PEPPER
QUERCUS ILEX	HOLLY OAK
PLATANUS RACEMOSA	CALIFORNIA SYCAMORE

Figure 4-3 Plant Legend used in Figure 4-2 and exhibits

4.2.4.1 Hemlock Avenue Edge

The landscape concept for Hemlock Avenue, between Heacock Street and Davis Street, will serve to reinforce its role as the primary entryway to the "MVF." Due to Hemlock Avenue's proximity to Highway 60, it will make available the most direct access for regional users.

A well-defined street tree pattern has been selected for Hemlock Avenue to identify it as the primary entryway. Large, evergreen canopy trees will be planted in a single row on both sides of Hemlock Avenue within the public street right-of-way. The dense tree canopies will frame the entry and provide consistent form and color throughout the year. This will be reinforced by a formal planting of flowering shrubs. A Crape Myrtle accent tree will be introduced for added color.

The following landscape design guidelines are developed for Hemlock Avenue, between Heacock Street and Davis Street:

Street Parkway Planting

- Trees will be planted on each side of the street within the 12 foot parkway.
- All trees shall be planted at least 10 feet from sidewalks and driveways.
- A minimum of 25 feet shall be allowed from any street intersection or street lighting standard, and shall defer to line of sight requirements for distance from intersection per Public Works Standard No. 125 and 126). (Ord. 786 § 2, 2009).
- A 5 foot wide sidewalk will be contiguous with the curb on both sides of the street.
- The remaining 27 feet will feature drought-tolerant groundcovers followed by a formal, double row of shrubs.

When viewed from Hemlock Avenue, the retail center will have updated facades that will complement enhance this retail part of Hemlock Ave. Most of the existing landscape is slated to remain intact and monument signage will be added at the entry to the retail center.

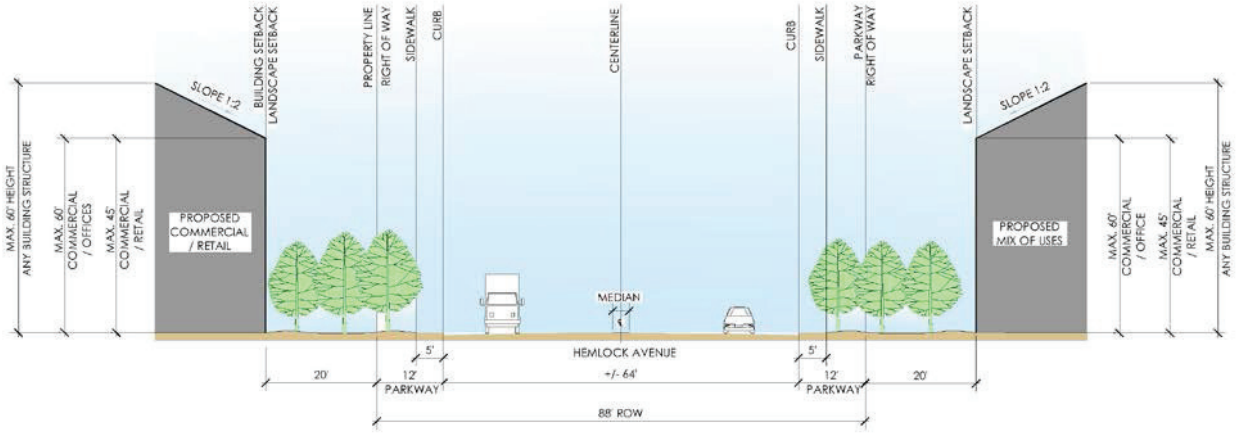


Figure 4-4 Hemlock Avenue Section A

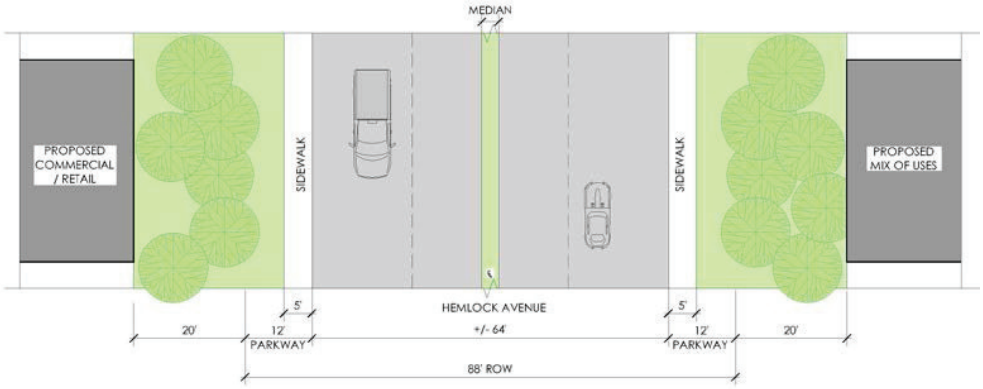


Figure 4-5 Hemlock Avenue Plan A

4.2.4.2 Davis Street and Hemlock Avenue Edge

Davis Street and Hemlock Avenue are the project's two interior streets and will share the same landscape theme. Informal tree groupings will define the roadways while allowing for critical views into individual projects. Round canopy trees combined with high branching trees shall be strategically placed in order to maintain view corridors. Bermed drought-tolerant groundcovers will be used wherever possible in combination with an informal shrub hedge to screen out views of parking lots. The following landscape design guidelines have been developed for Davis Street and Hemlock Avenue between Davis Street and Indian Ave.

Street Parkway Planting

- A combination of informal street trees and small accent trees will be planted within the 11 foot parkway and 15 foot landscape setback (20 Foot building set back shall be provided for industrial use). A flowering tree species will serve as an accent along Hemlock Avenue and Davis Street. Trees shall be planted in a random pattern at a minimum spacing of 20 feet on center.
- All trees shall be planted at least 10 feet from sidewalks and driveways, and a minimum of 25 feet from any street intersection. Landscape shall defer to line of sight requirements for distance from intersection per Public Works Standard No. 125 and 126). (Ord. 786 § 2, 2009).
- A 5 foot wide sidewalk will be contiguous with the curb on both sides of the streets.
- A curvilinear band of drought-tolerant groundcover will occur adjacent to the sidewalk, followed by low, informal shrub masses.

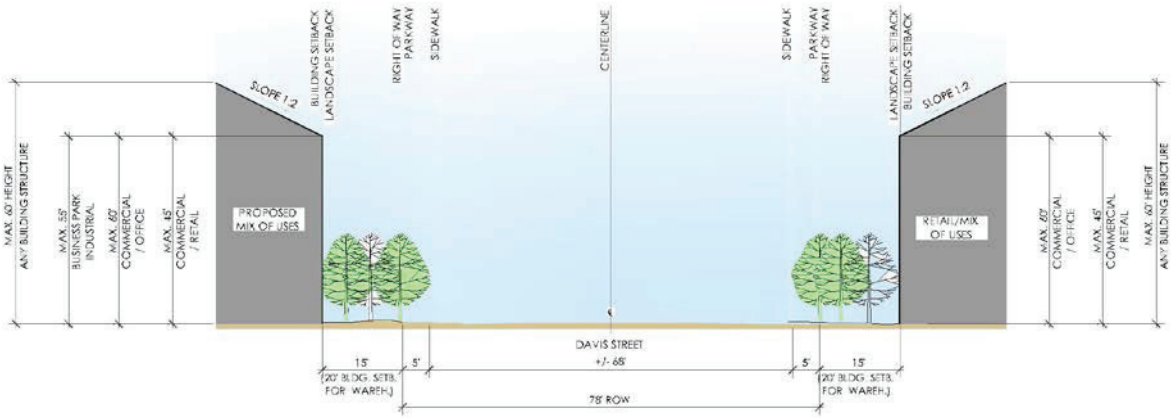


Figure 4-6 Hemlock Avenue and Davis Street Section B

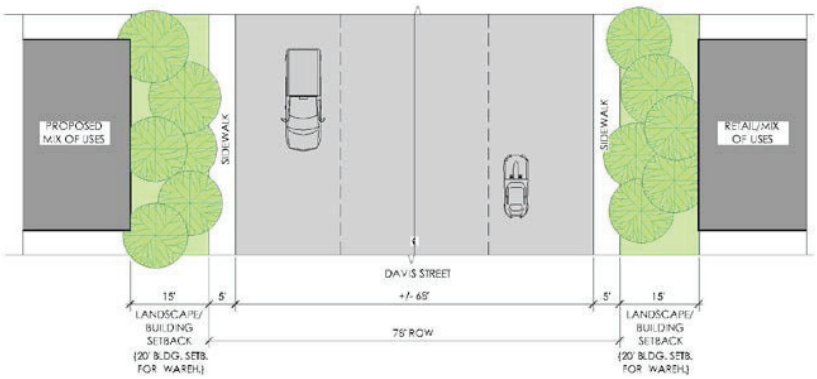


Figure 4-7 Hemlock Avenue and Davis Street Plan B

A deviation from the previously described landscape concept will occur where Davis Street parallels the western boundary of the **detention basin**. Along this edge, the landscape setback will be reduced to 5 feet. The sidewalk will be contiguous with the curb, and the same tree types will be featured. Informal shrub masses will also be used to define the groundcover edge and serve as a transition between the groundcover areas and slope planting.
Refer to Figure 4-8 and Figure 4-9

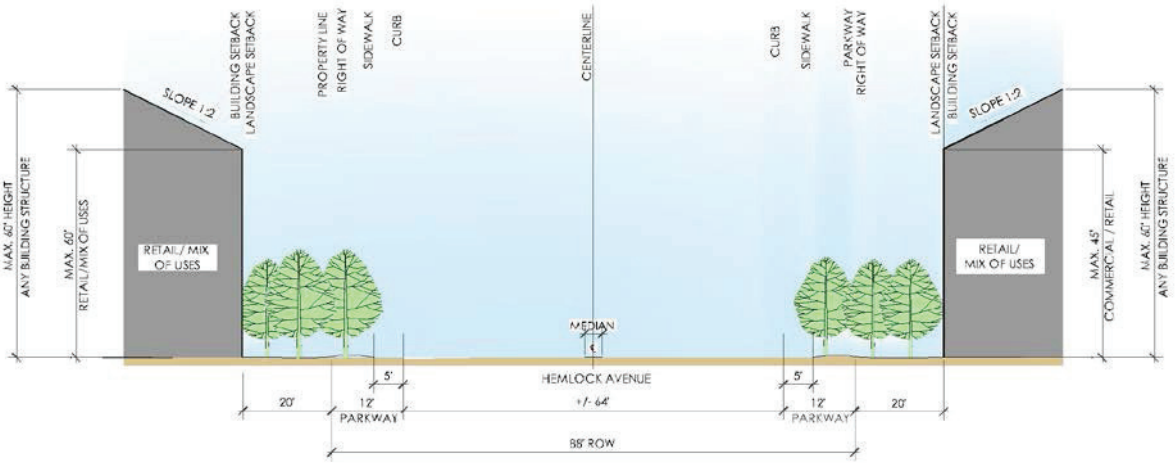


Figure 4-8 Hemlock Avenue at Institutional Section L

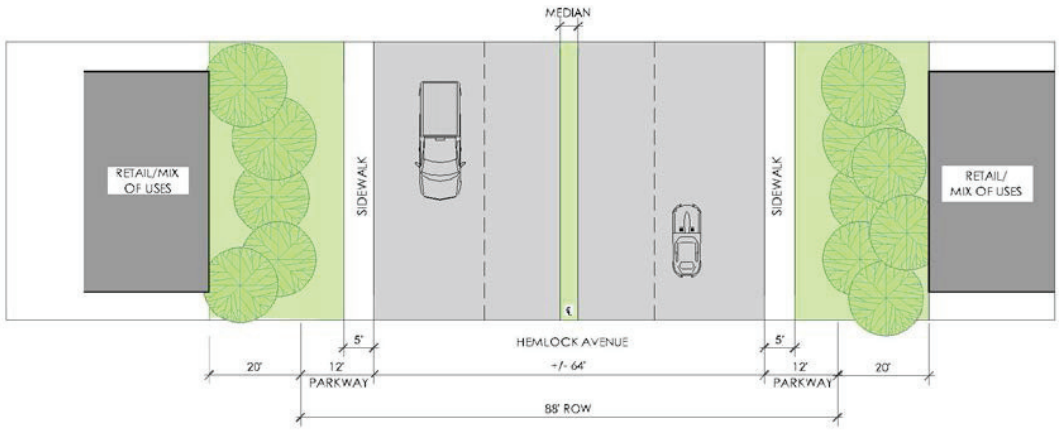


Figure 4-9 Hemlock Avenue at Institutional Plan L

4.2.4.3 Heacock Street Edge (at Mix of Uses area)

Heacock Street forms the western boundary of the project site and is a major arterial leading from the State Highway into the City's commercial district. The landscape theme will be formal to emphasize this important entry to the business community. Large trees will be planted in a single row with drought-tolerant groundcover below. Berming, in combination with a formal shrub mass, will be used to screen out views of parking lots.

Street Parkway Planting

- Trees will be planted on the east side of the street within the 10 foot parkway, and will be planted in a single row at a spacing of 40 feet on center.
- A 5 foot wide contiguous sidewalk will parallel the street right-of-way. The remaining 20 feet will feature bermed drought-tolerant groundcovers followed by a double row of shrubs.
- Slopes must not exceed a 4:1 slope ratio within the City right-of-way, and shall not exceed a 3:1 slope ratio within the landscape setback, per Moreno Valley Public Works Landscape Design Guidelines.

4.2.4.4 Heacock Street Edge

When viewed from Heacock Avenue, the existing retail component is set back from the property line per the prescribed Moreno Valley standards. A combination of the existing landscape buffer and the new landscape on the east side of the street, where the special edge treatment is required ***(See figure 4-1)*** to complement the existing use for this traffic corridor.

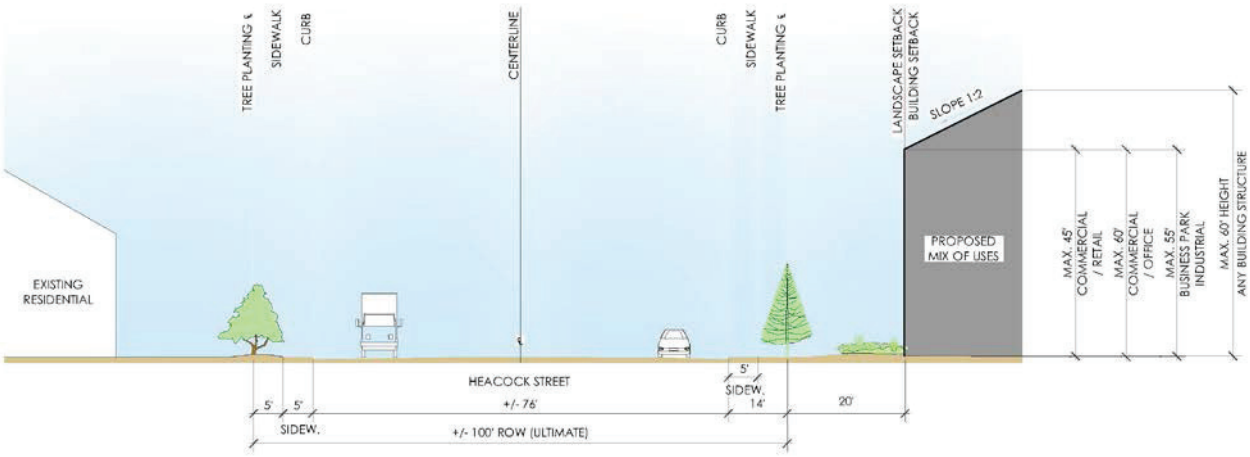


Figure 4-10 Heacock Street Section D

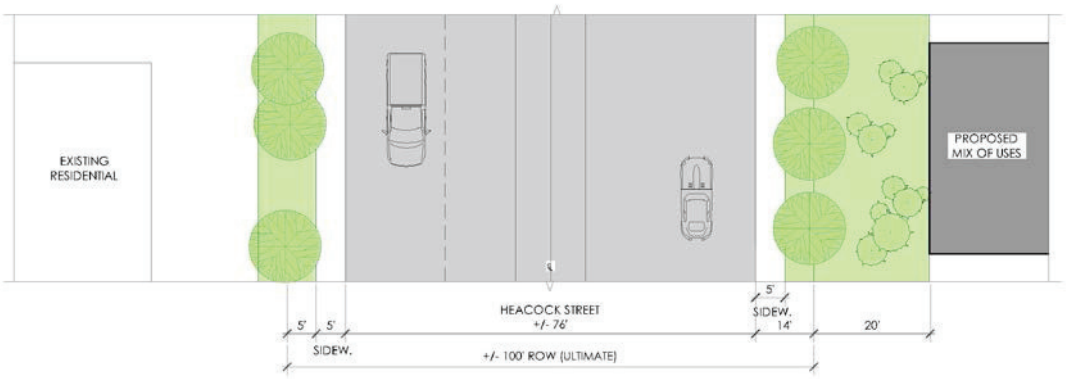


Figure 4-11 Heacock Street Plan D

4.2.4.5 Ironwood Avenue Edge

Ironwood Avenue forms the northern boundary of the development and will create access for residents in neighborhoods surrounding the project site. Landscaping will be designed to provide an aesthetic buffer between adjacent residential uses and commercial development. A landscape setback will feature an informal tree pattern and drought-tolerant groundcovers, bordered by low shrub masses. Tall canopy and skyline trees will be combined to form a buffer along the street frontage. Emergency access, landscaping, drainage facilities, and property maintenance access are permitted in this area. The following landscape design guidelines have been developed for Ironwood Avenue:

Street Parkway Planting

- The south side of the street will feature a 13 foot parkway with a 20 foot landscape setback. A single row of trees will be planted 5 feet from the back of walk at a spacing of 35 feet on center. Trees shall be a minimum 24-inch box size, and when planted, shall have a minimum of 8 feet of brown trunk measured from finish grade.
- All trees, other than street trees, shall be a minimum of 15 gallon size.
- Trees will be planted within the remaining 33 feet of landscaped area, where grade permits. Trees shall be planted at a minimum spacing of 20 feet on center.
- Screening trees will be added within the parkway in key areas.
- All trees shall be planted at least 10 feet from sidewalks and driveways, and 25 feet from any street intersection or street lighting standard. Plants and shrubs within the intersection sight distance cannot exceed 30" above the top of curb, per Moreno Valley Public Works Department Section 1 Street Improvements, Standard Design Guidelines on sight distance.
- A 5 foot wide sidewalk contiguous with the curb will parallel the street right-of-way.
- A curvilinear band of drought-tolerant groundcover will occur adjacent to the sidewalk, where grade permits, followed by a low, informal shrub mass.
- A slope will occur within the setback if necessary, but shall not exceed a 3:1 ratio and shall be more gradual where possible. Slopes will be planted with drought-tolerant shrubs and groundcovers. The requirements shall meet Moreno Valley public works landscape design guidelines.

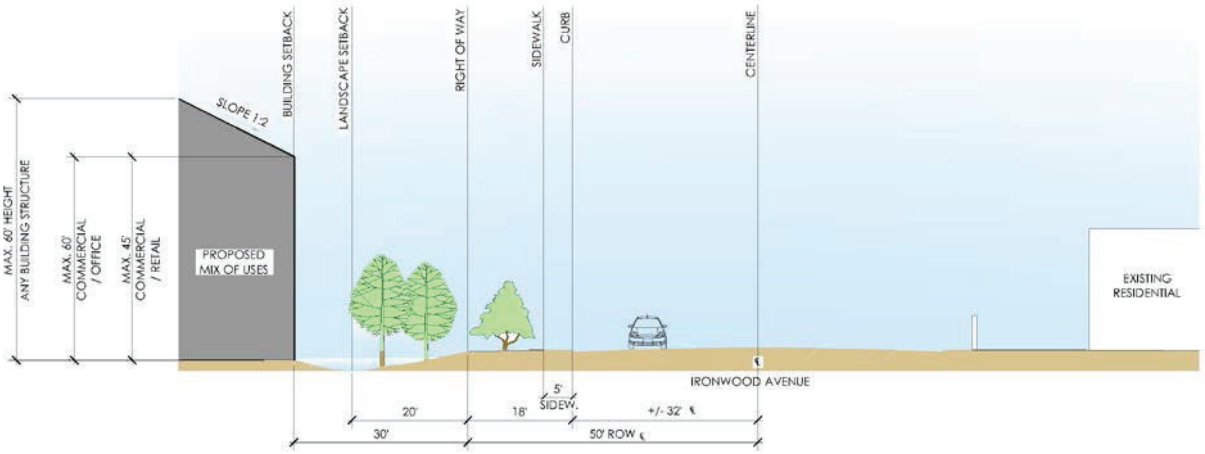


Figure 4-12 Ironwood Avenue Section E

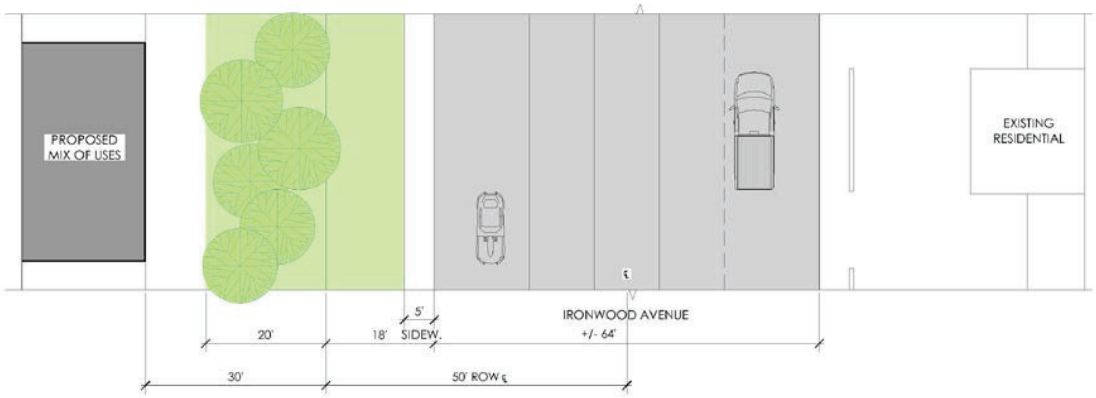


Figure 4-13 Ironwood Avenue Plan E

4.2.4.4 Detention Basin Edge

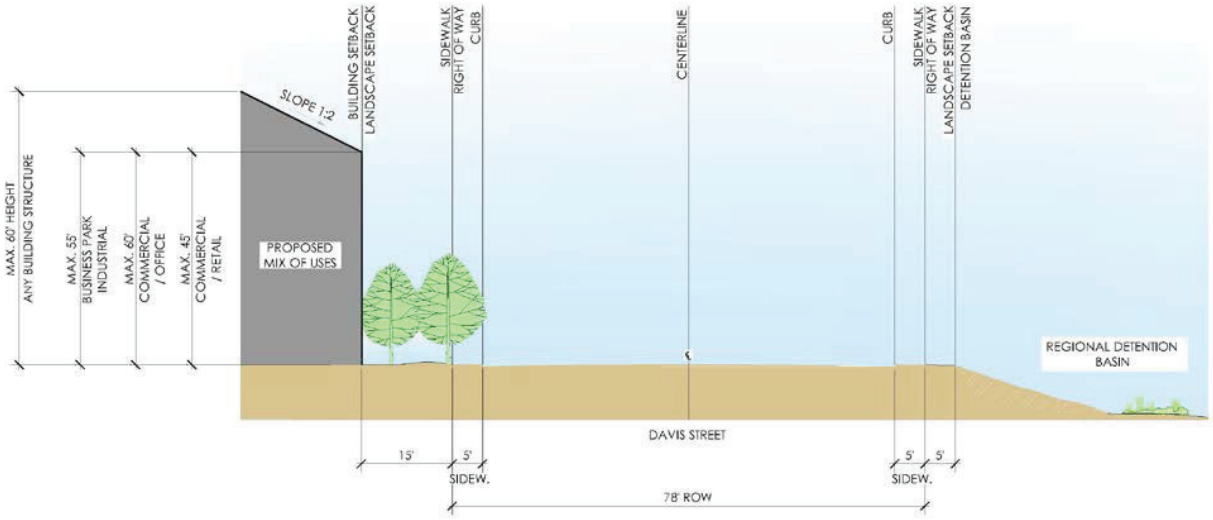


Figure 4-14 Davis Street Section C (at detention basin)

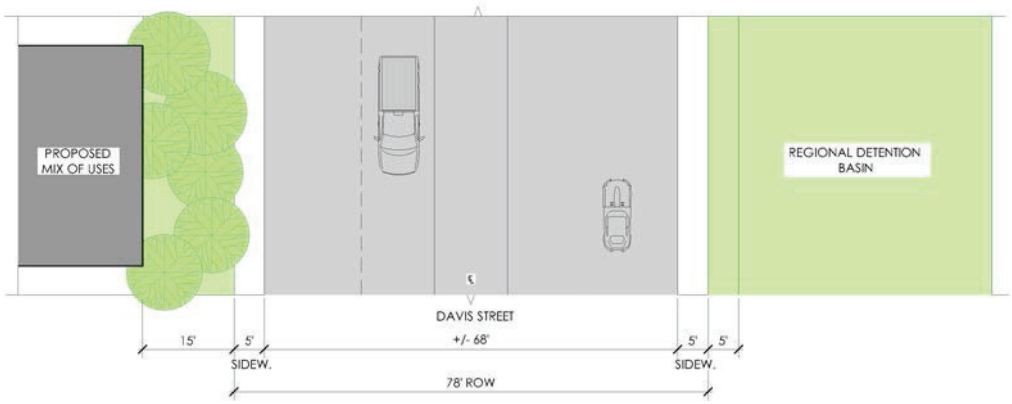


Figure 4-15 Davis Street Plan C (at detention basin)

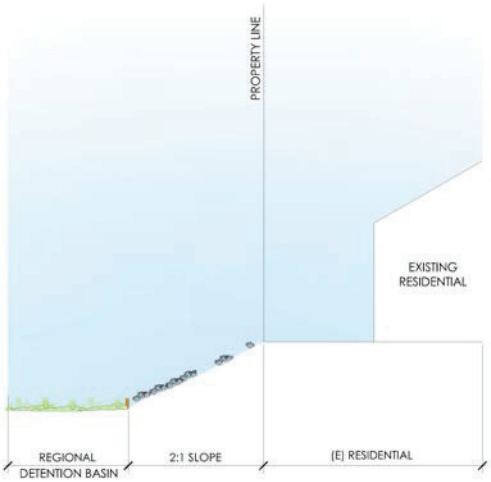


Figure 4-16A Detention Basin Section F

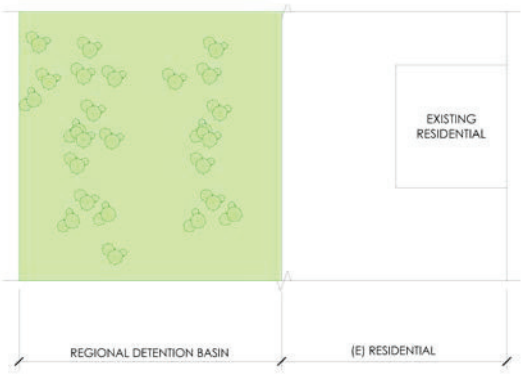


Figure 4-16B Detention Basin Plan F

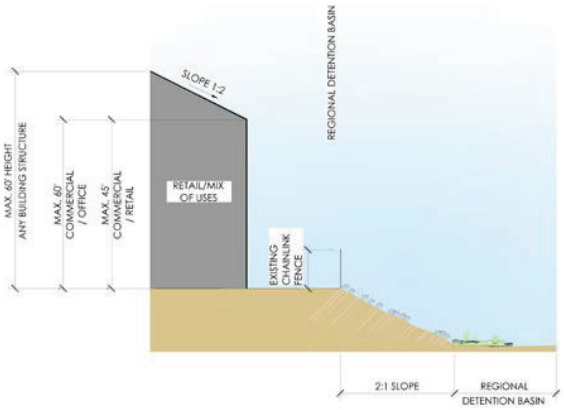


Figure 4-17A Detention Basin Section H

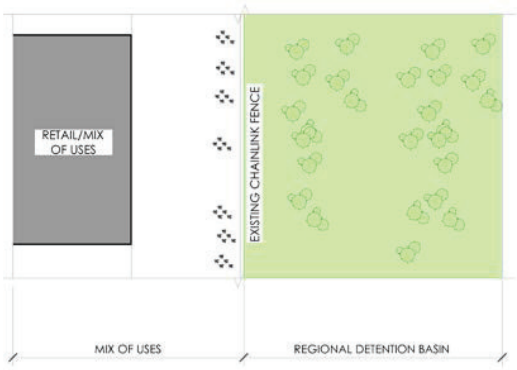


Figure 4-17B Detention Basin Plan H

Slope planting

Drought-tolerant groundcovers, shrubs and grasses will be planted on the slopes for erosion control and to be consistent with the overall planting design.

60 State Highway Edge

When viewed from State Highway 60, there is existing retail and restaurants and the proposed option for a retail automotive component will be set back from the property line per the prescribed Moreno Valley standards. A combination of the existing landscape buffer and the proposed layout for the project will fit in and complement the existing use for this traffic corridor.

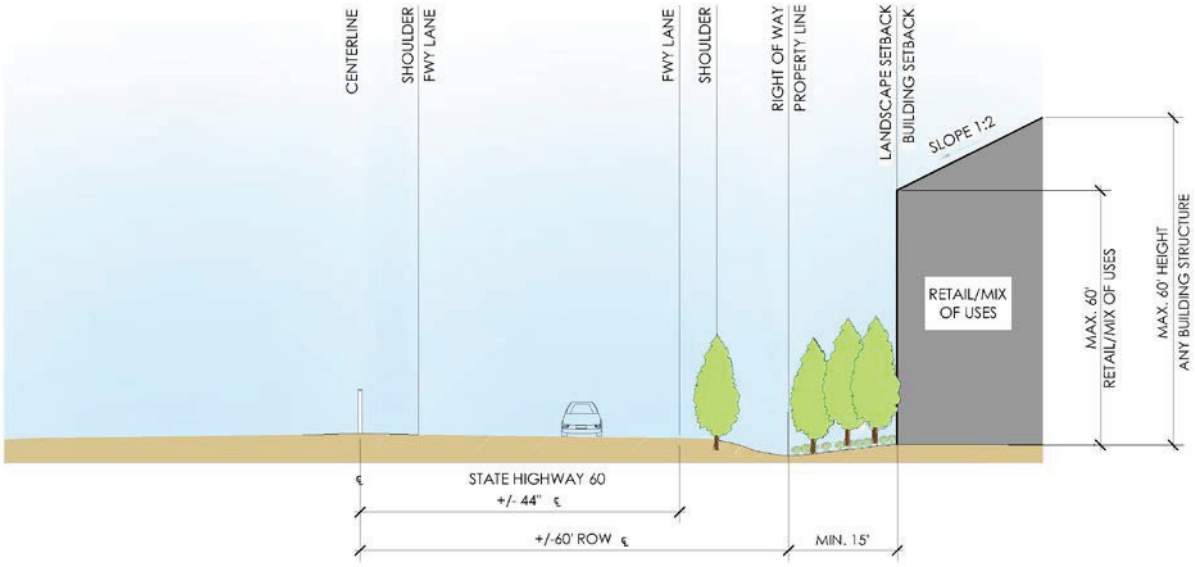


Figure 4-18 State Highway 60 Edge Section G

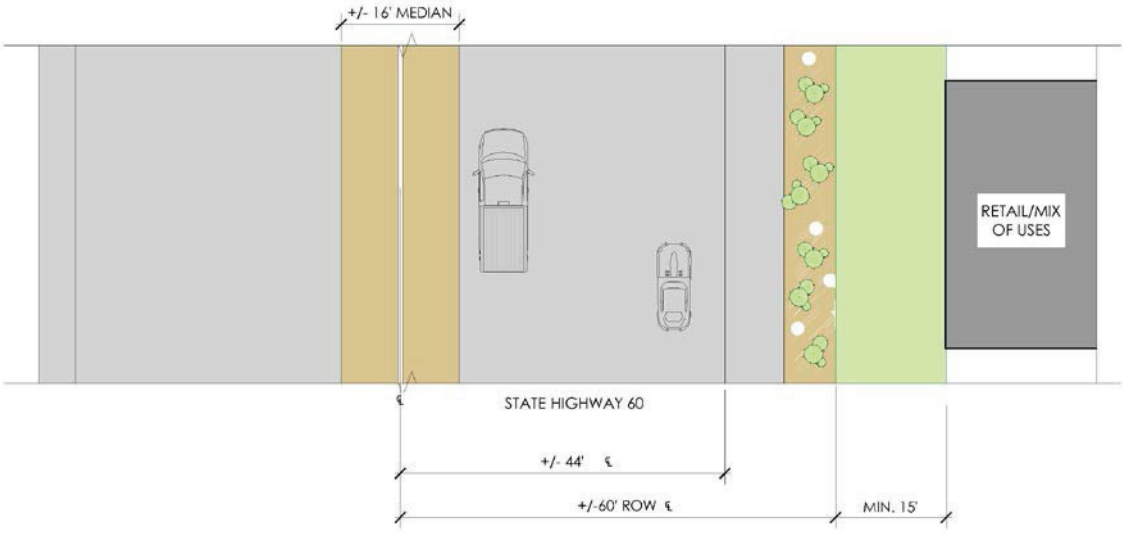


Figure 4-19 State Highway 60 Edge Plan G

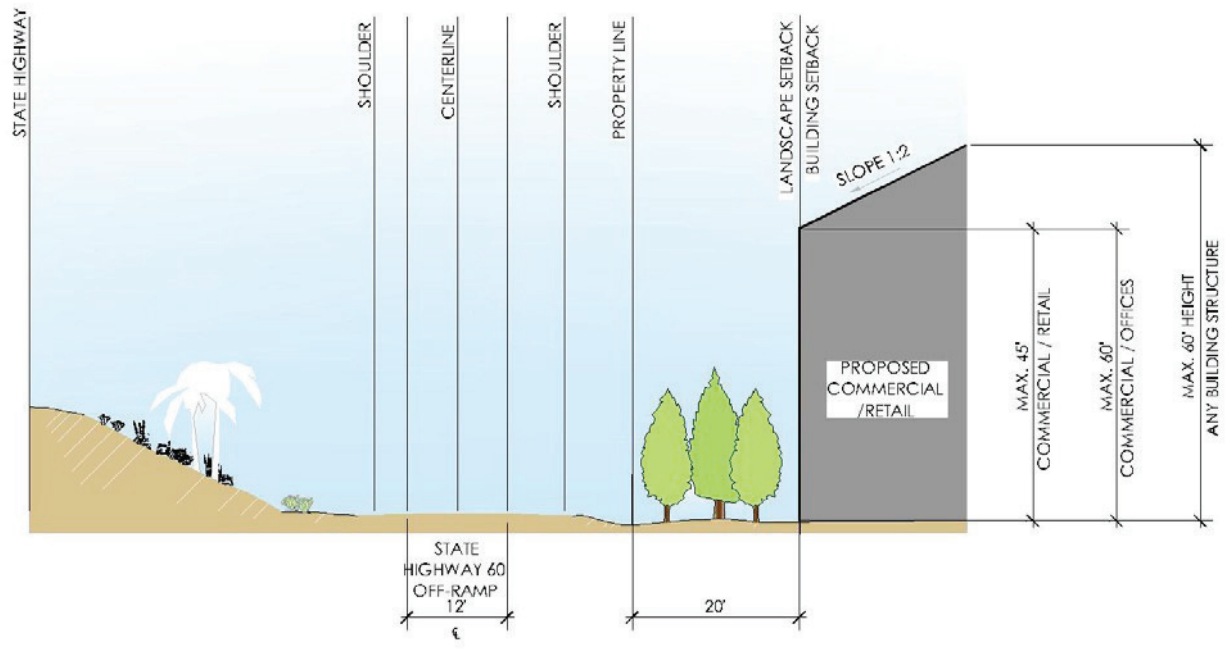


Figure 4-20 State Highway Off-ramp 60 Edge Section J

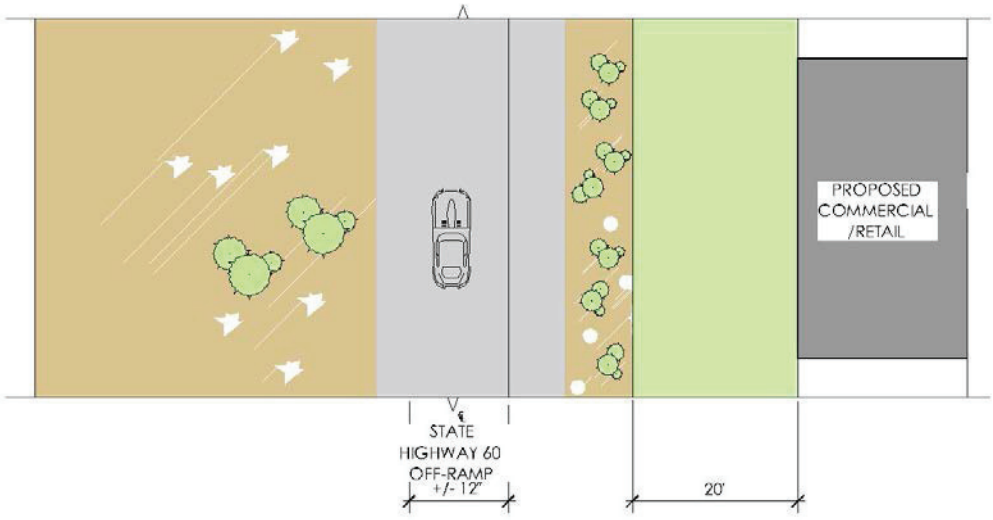


Figure 4-21 State Highway Off-ramp 60 Edge Plan J

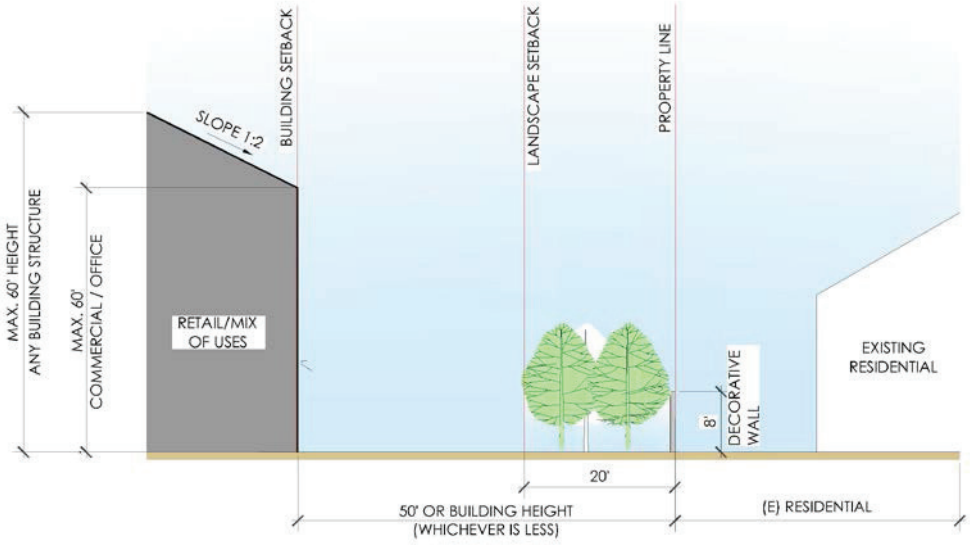


Figure 4-22 Eastern Edge - Section K

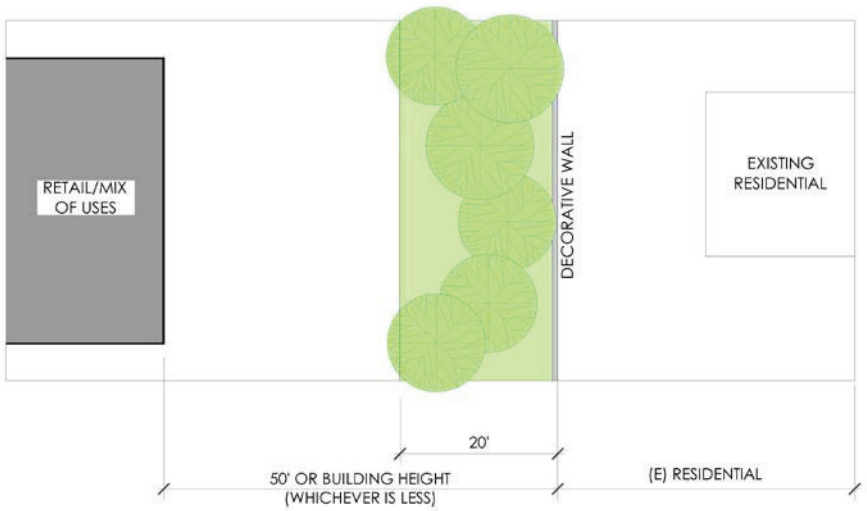


Figure 4-23 Eastern Edge - Plan K

4.2.5 Screening Criteria for Interior Roadways

All roadways interior to the Mix of Uses shall be lined with sidewalks, landscaping, and setbacks from the street as prescribed by the City of Moreno Valley planning standards and elaborated in this specific plan.

4.2.6 Entry Theme

Entrances to the "MVF" shall be enhanced with landscaping, project monument signage and hardscape features. The landscape design will utilize plant materials and planting techniques that require a low to moderate amount of maintenance. The plant palette for the entries is composed of landscape materials with characteristics that accent year-round attractiveness and seasonal interest.

The landscape concept for The "MVF" shall be introduced through the entry treatments. Medium accent trees combined with low evergreen and flowering accent shrubs will be incorporated consistently throughout the project entries. The foreground will feature a combination of ground cover and annual color.

The entry signage and elements shall be visually clear to vehicular and pedestrian users, and shall allow the use of digital signage subject that it meets the City of Moreno's requirements.

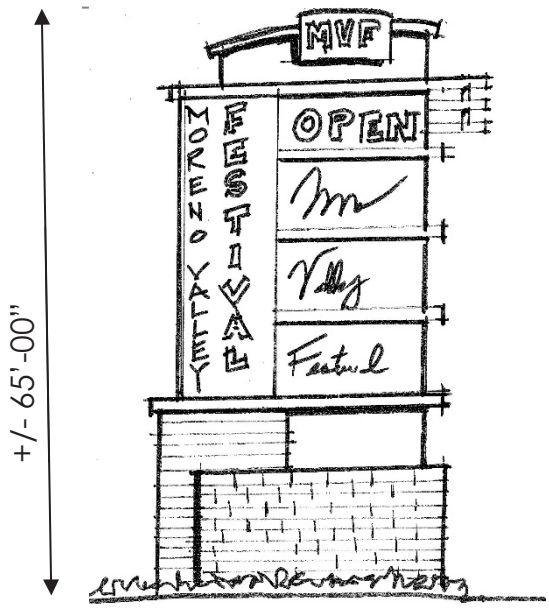


Figure 4-24 Entry Concept

Primary Entry - Heacock Street & Hemlock Avenue

The primary entry statement will be located at the Heacock Street/Hemlock Avenue intersection. The following design elements will be included on the southeast corner:

- A project monument sign constructed of concrete with a sandblasted finish.

- Signage will incorporate the project's name, logo and "festival" theme flags.
- Planting will consist of drought-tolerant shrubs, groundcovers and trees designed to be consistent with the overall theme of the project.
- An 8 foot wide sidewalk will be contiguous at the street corners. Accent lighting will be provided to illuminate the wall and landscaping.

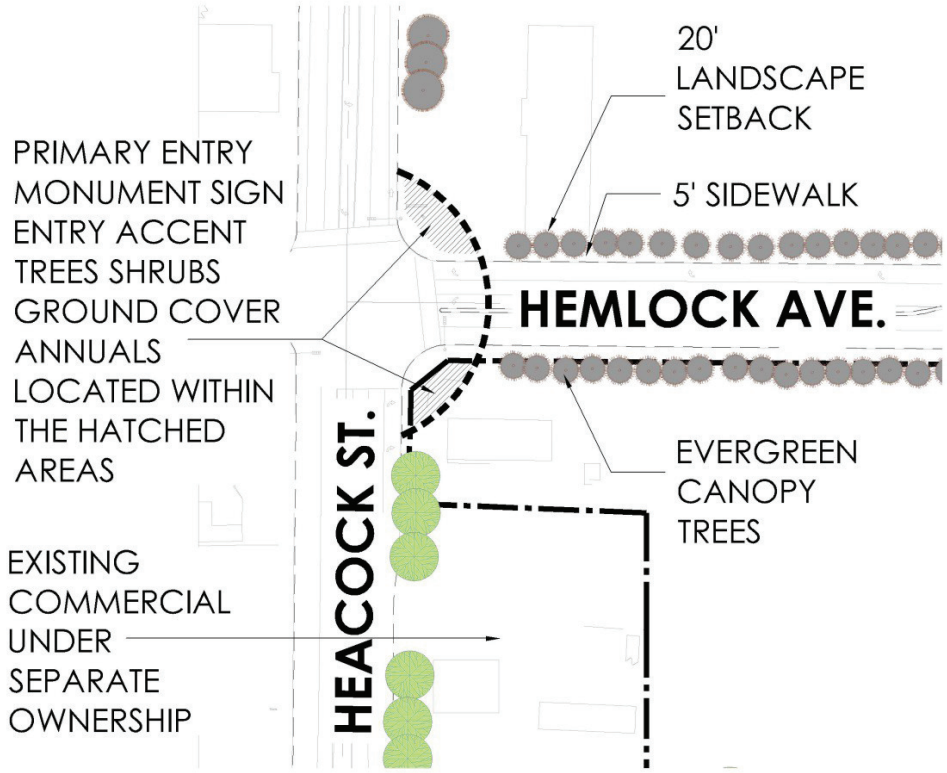


Figure 4-25 Entry Plan

Secondary Entry - Hemlock Avenue & Davis Street

The project's secondary entry statement will be located on the northwest and northeast corners of the Hemlock Avenue/Davis Street intersection. The entry will be designed to create a sense of arrival and serve as a landmark for the development. The design for the intersection's corners will follow the same guidelines as described for the Heacock Street/Hemlock Avenue entry with the following exceptions:

- The project monument sign will be located on the northeast corner in combination with two architectural towers.
- Evergreen accent trees will be planted behind the monument wall.

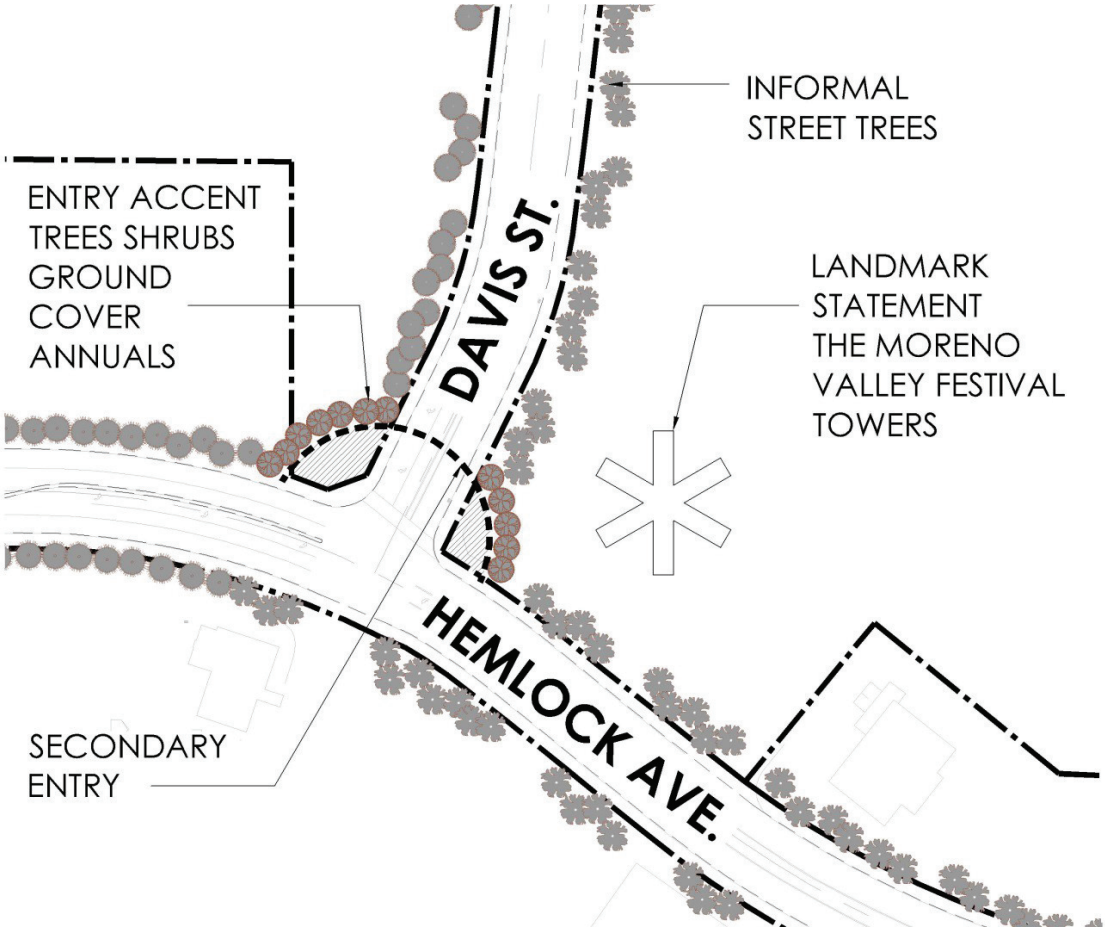


Figure 4-26 Secondary Entry Plan

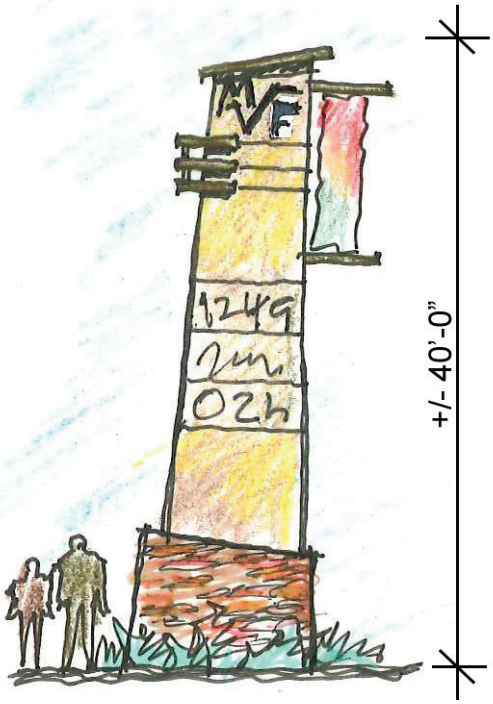


Figure 4-27 Tower Element

Tower Element

• The architectural towers will serve as a "landmark" and incorporate the following details:

- *Brick/Stone masonry tapered bases*
- *Main tower body built of metal framing with stucco finish*
- *Hanging multi-colored banners*
- *Metal bandings (bronze colors) accentuating tower heights and supporting flag pole*

Minor Entries - Ironwood Avenue & Davis Street

The project entries at Davis Street/Ironwood Avenue and Nita Drive & Hemlock Avenue will feature similar design elements as described for the Heacock Street/Hemlock Avenue entry.

Variations in the entry treatments for the individual corners are as follows:

Ironwood Avenue / Davis Street

- The project monument signs with complementary landscaping will be located on both the southeast and southwest corners of the intersection, per 7.1 Entry Monument Signage, and Municipal Code, Chapter 9.09.206 Monument signage.
- The plant palette will consist of drought-tolerant groundcovers and shrubs consistent with the overall project theme.
- Flowering accent trees will be planted behind the monument walls.

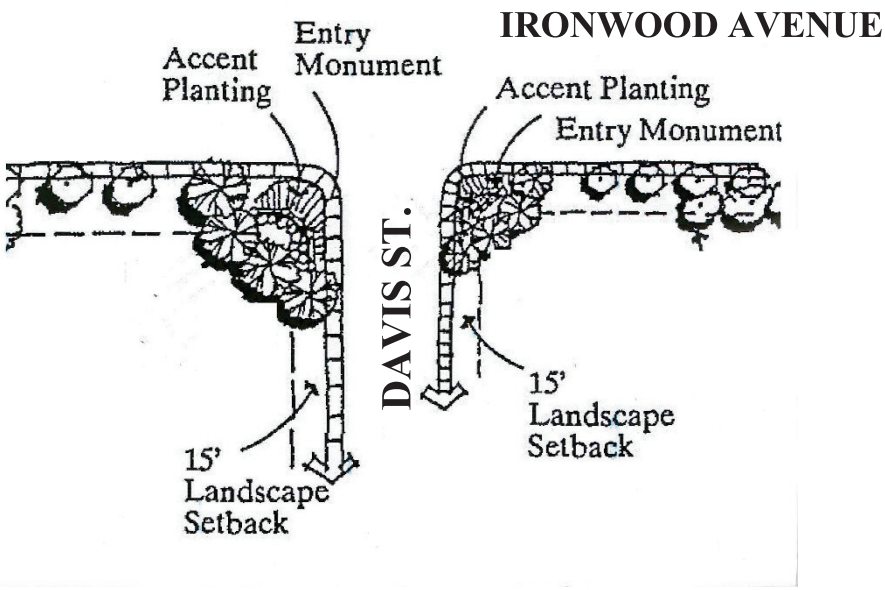


Figure 4-28 Minor Entries

Nita Drive/Hemlock Avenue

- The entry statement, located on the northwest corner, will feature a project monument sign and landscaping.
- The project monument sign will employ single concrete panel, oriented out towards the intersection.
- A plant palette consisting of drought-tolerant groundcovers and shrubs in concert with the overall project theme.
- Flowering accent trees will be planted behind the wall.

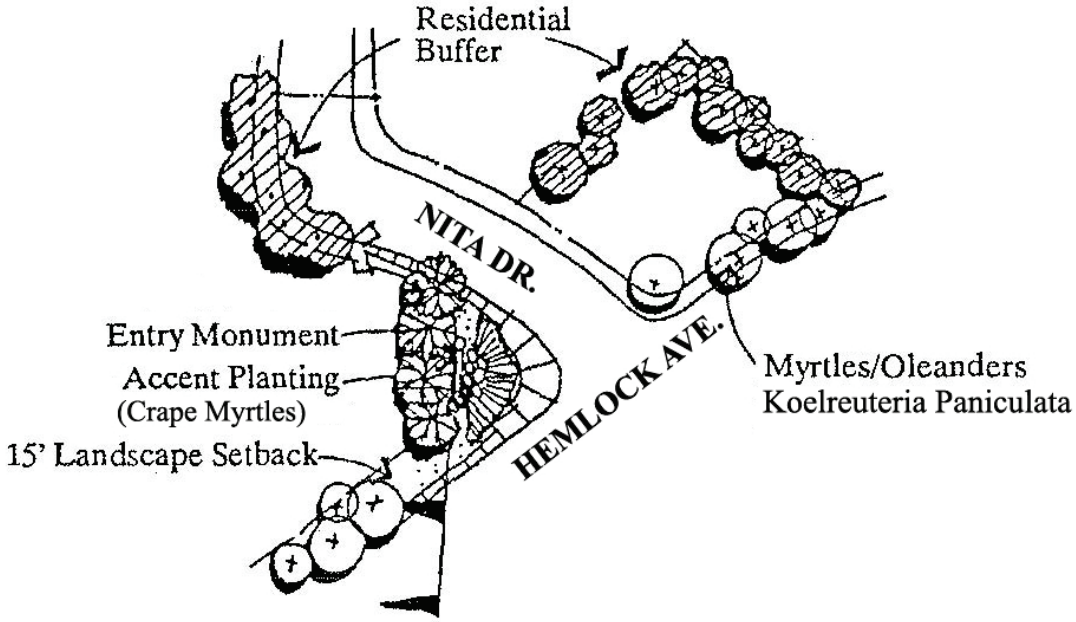


Figure 4-28 Nita Drive & Hemlock Ave

Buffers

A landscape buffer system is required along the eastern, southern, and northern boundaries of the project site and will be implemented by the master developer. The following guidelines identify the buffer system treatments:

When Mix of Uses, commercial, retail or business park uses are adjacent to developed residential areas, landscape buffers and WQMP basins are recommended to be present as buffers for potentially incompatible uses. Refer to sample cross section exhibits below for guidelines.

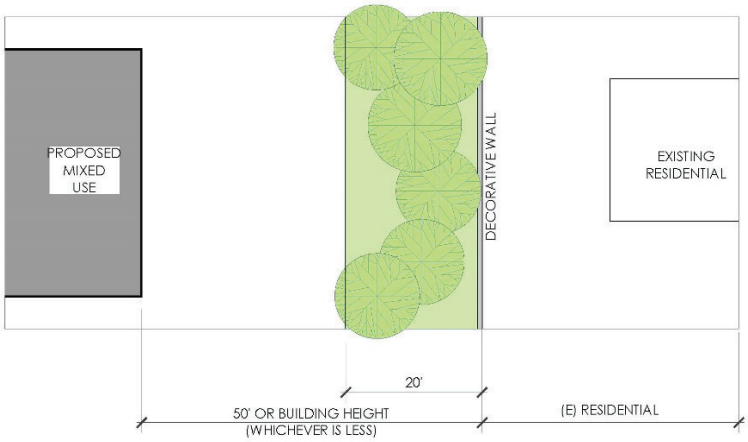


Figure 4-29 Buffers at Incompatible Residential Uses

Residential Buffer

The existing wood fence along the residential edge will be replaced with an 8-foot-high decorative wall to provide visual and acoustical buffering. This is only applicable where existing residential areas meet with the Mix of Use areas.

Detention Basin

The detention basin will be preserved as an open space, serving as a flood control facility and visual open space for adjacent residents and tenants. Implementation and final design of all landscape treatments and fencing will occur as permitted by the Riverside County Flood Control and Water Conservation District and the parks department requirements.

The basin is structured to function as a bio-detention basin, and the City will undertake actions to plant drought tolerant grasses and wildflowers to supply year-round dust control and seasonal color.

4.2.7 Off-site Maintenance

The City is responsible for the public streets (curb-to-curb), sidewalks, and trails and they will continue to be maintained by the City.

Parkways, slopes, private drainage facilities, and common areas will be maintained by property owners.

4.3 Off-site Lighting

4.3.1 Objectives

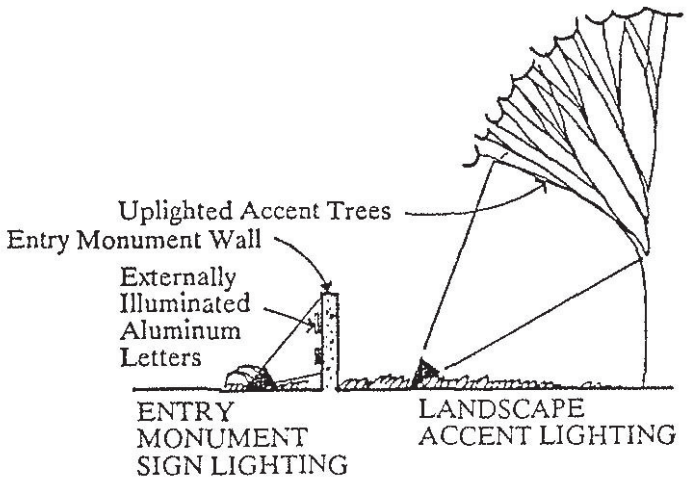
Exterior lighting is to be arranged to enhance the safety and security of motorists, pedestrians and cyclists.

- A night time character that reinforces the image of "MVF" as a quality business location created by strategic lighting.
- Lighting is an important element contributing to the identity and unity of the "MVF."
- To reinforce identity and unity, all exterior lighting is to be consistent in height, spacing, color and type of fixture throughout the building site and compatible throughout The "MVF."
- Street lighting on public streets shall meet the requirements of the City Standard Plans.

The master developer will be responsible for installation of light fixtures during the project's next development phase. Street lights per City standards will be installed on all public roads according to the City's recommendations where they do not already exist.

The following guidelines apply to the three types of specialty lighting provided by the master developer:

- Ground level direct burial lighting will be positioned to luminate entry monuments.
- Landscape accent lighting will be from ground level fixtures concealed in the landscaping. Dramatic up-lighting will be created by means of this illumination for the project entries.
- Tower accent lighting will be provided in the five towers. Translucent fabric at the top of the towers will be up-lighted.



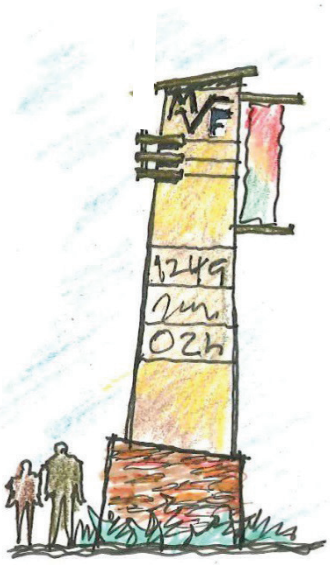


Figure 4-30 Tower, Landscape and Monument Signage

4.4 Off-site Utilities

4.4.1 Telephone, CATV and Similar Service Wires and Cables

All telephone, CATV and similar service wires and cables shall be installed underground.

4.4.2 Electrical Transmission Lines

Electrical transmission lines less than 66kV shall be installed underground.

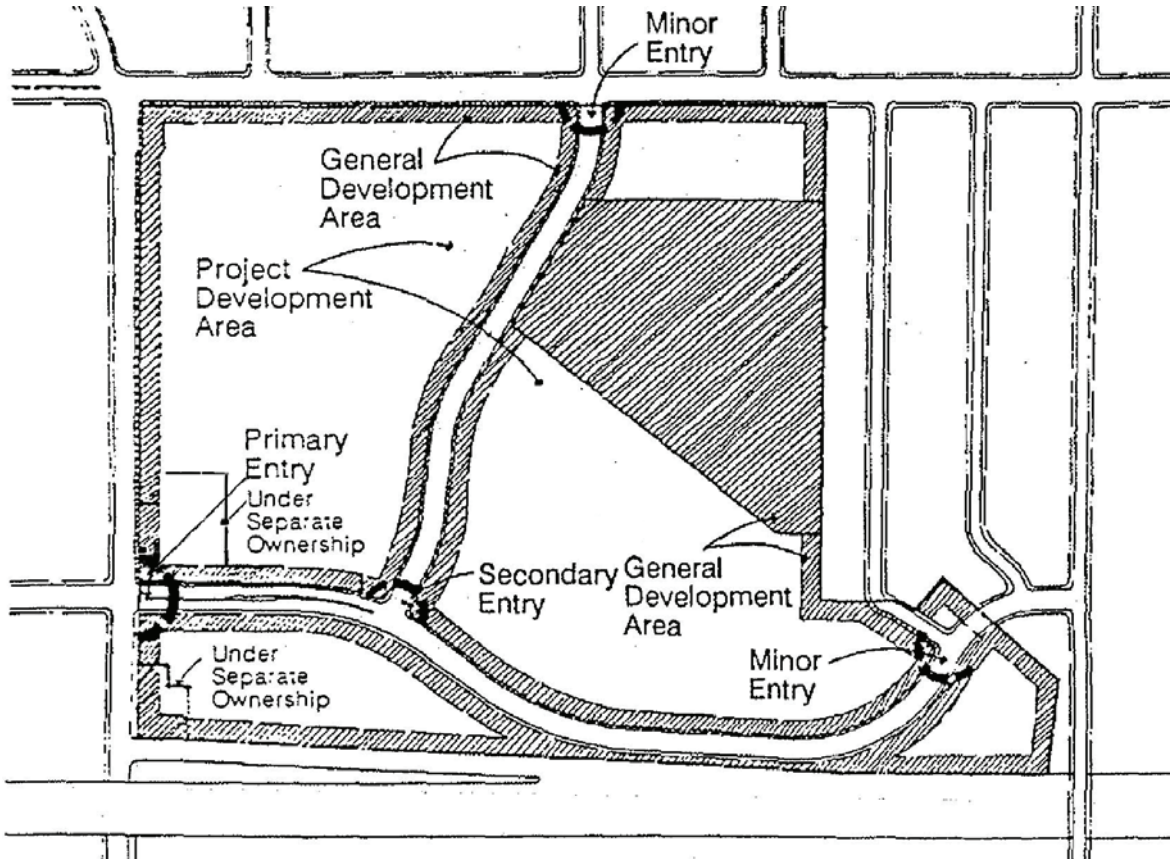
5.1 ON-SITE DESIGN STANDARDS

5.2 On-site Design Standards and Guidelines

The general Development Guidelines describe features that facilitate implementation by the master developer. In order to manage the orderly and consistent development of the "MVF," the following design standards and guidelines will be applied to all development in the Specific Plan area.

5.2.1 Design Standards

These Design Standards and Guidelines serve to foster an eco-friendly, high-quality development and establish a distinctive character for the "MVF" project. In reviewing development proposals, these guidelines will be the primary tools used to evaluate proposed site design, architecture, landscaping, and other project features such as lighting and site amenities. The developer is responsible for implementation of street improvements and utility systems as well as landscaping, signage and lighting as addressed in the following guidelines and consistent with the existing infrastructure. The areas of responsibility of the master developer are indicated on the sketch below. Improvements for those areas identified on the sketch as being under separate ownership, will be implemented by the respective property owners in association with their projects.



Note: Parcels under separate ownership are not a part of the specific plan

Figure 5-1 General Development Area

5.2.2 Introduction

The Project Design Guidelines establish guidelines and standards for the individual project developer. The objective of these guidelines is to create projects that contribute to the overall design continuity of the development while maintaining their own sense of individuality. The following general guidelines which address site, architectural and landscape design apply to all development within the "MVF" project:

- Vehicular and pedestrian entries to the project should be clearly identifiable to visitors through the use of signage, hardscaping and landscaping.
- Circulation within sites shall be designed to minimize conflicts between service vehicles, automobiles and pedestrians.
- Neighboring lots should share entry drives wherever possible to create a greater uninterrupted expanse of landscaping.
- Visibility of parking areas along roadways shall be minimized through the use of landscaped berms and screen shrubs wherever possible.
- Service zones (trash enclosures, loading and outdoor storage areas) shall be located in areas that are least visible to the public. An appropriate screening method shall be used if service zone is exposed to public view.
- All buildings and walkways shall be accessible to the handicapped according to requirements in Title 24 of the California Administrative Code.
- A secondary sidewalk shall be provided within individual sites and connect with the master circulation system, creating a continuous and pleasant link between projects.
- Consideration should be given to ensure safe pedestrian access through parking areas, and from the public street walkways to building entrances.
- Security measures shall be considered in the project's site design, particularly in pedestrian areas. The use of tall, dense shrubbery should be avoided along walkways and adequate lighting should be provided.

5.2.3 Uses shall be developed in Accordance with the Specific Plan

All properties within the "MVF" shall be developed in conformance with this Specific Plan.

5.2.4 Uses shall be developed in Accordance with City of Moreno Valley Municipal Codes

All development will be consistent with the Specific Plan objectives and design guidelines. Details of specific development projects will be determined by subdivisions and site development plans. In the event of a conflict between the

Specific Plan and the City of Moreno Valley Municipal Code, the Specific Plan will prevail. If the Specific Plan is silent on a particular subject, the Municipal Code shall apply.

5.1.4.1 Zoning Regulations

Introduction

This section outlines the zoning regulations that define implementation of each phase of The "MVF." Tables are used where comparison of different land uses is important or to clarify a concept.

The application of these regulations will not replace the standards as required in State Laws, and will not replace applicable City Ordinances. Need to modify the diagram & legend below:

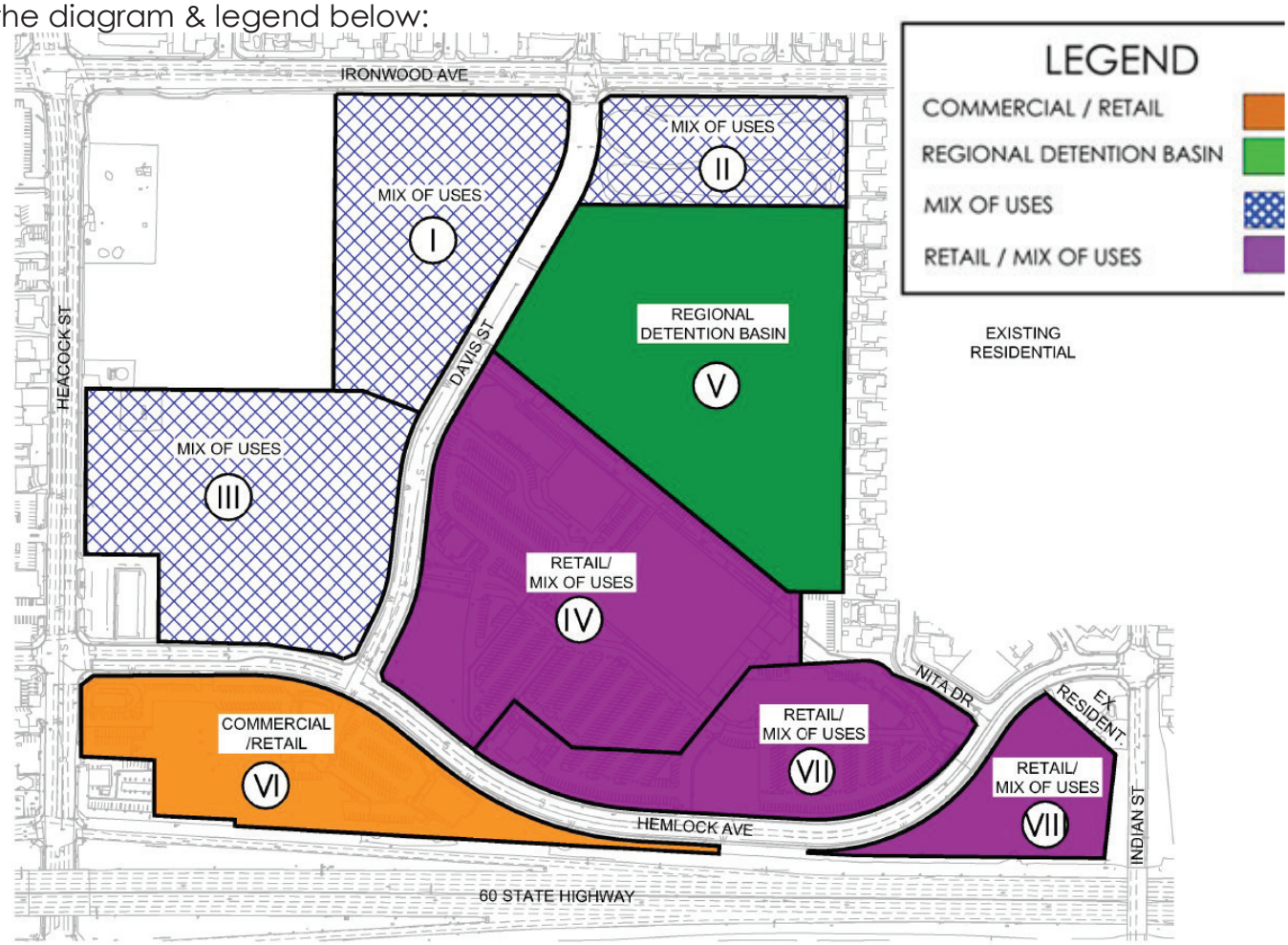


Figure 5-2 Site Planning Development Areas I-VIII

5.1.4.2 Site Development

The site planning development in The "MVF" will consist of planning areas **(See Figure 5-2)** as opposed to Phases which were integral to the previous Specific Plan 205, as shown on the Land Use Plan **(Exhibits 14.2,7,8 &9)**:

- **Planning Area I** has strong potential for Mix of Uses development including commercial, retail, office and business park and medical and related uses The boundaries for this Planning Area include:
  - Close proximity to the existing detention basin across Davis Street to the East
  - Existing residential development to the North.

- Easy access to the existing Ironwood truck route to the North.
- Close proximity to areas II, III & IV.

- **Planning Area II** has strong potential for Mix of Uses development including commercial, retail, office and business park and medical and related uses. The boundaries for this Planning Area include:
  - Adjacent to the existing residential to the east
  - Adjacent to the detention basin to the south.
  - Borders Ironwood Ave to the North and Davis St. to the west.
- **Planning Area III** has strong potential for Mix of Uses development including commercial, retail, office and business park and medical and related uses. The boundaries for this Planning Area include:
  - Adjacent to **Planning Area I**.
  - The existing retail use across the mid-way of Davis Street to the east.
  - Proximity to Hemlock Ave on the Southeast corner of the planning area.
- **Planning Area IV** is currently developed as a retail center. This area was developed under Phase I of Specific Plan 205 Amendment #3. The existing obsolete or underutilized uses may be demolished and/or repurposed as part of the future development. The area has potential for Retail/ Mix of Uses development including commercial, retail, office and business park, medical and related uses. The boundaries for this Planning Area include:
  - Adjacent to detention basin to the North of the area.
  - Southern border is Hemlock Ave.
  - Western border is Davis Street.
- **Planning Area V** is the existing City Owned detention basin. With the exception of regular maintenance, City installed ground cover and planting will remain in its native state an act as a buffer between the proposed uses of the development area. Access to the basin will be restricted. The boundaries for this Planning Area include:
  - Northern border is **Planning Area II.**
  - Southern border is **Planning Area IV.**
  - Eastern border is existing residential.
  - Western border is Davis Street.
- **Planning Area VI** was developed under Phase II of the Specific Plan 205 Amendment #3 for retail commercial use. The area is currently being considered for additional retail commercial development. The boundaries for this Planning Area include:
  - Borders Hemlock Ave. to the North
  - Borders Heacock St. to the West.
  - Good visibility from the 60 State Highway.
- **Planning Area VII** was developed under Phase I of the Specific Plan 205 Amendment #3. The area is currently developed as a commercial / retail business center and is intended to retain the commercial, retail and business center type uses. The area consists of existing usable retail stores,

commercial offices, parking and landscaping areas. The boundaries for this Planning Area include:

- Adjacent to Planning Area IV to the north and west of the area.
- Southern border is Hemlock Ave.
- Good visibility to the 60 State Highway.

- **Planning Area VIII** has good visibility to the 60 State Highway and is designated for Retail/ Mix of Uses. Due to the small and irregular size of this parcel, the opportunities for development will be smaller in scale and options for use will be limited. The boundaries for this Planning Area include:
  - Adjacent to Indian Street to the East.
  - Adjacent to residential to the East and across Hemlock Ave to the North.
  - Existing retail across the street to the North.
  - Northwestern border is Hemlock Ave.

Lot and Building Dimensions and Setbacks

Setbacks (as measured from the property line):

Ironwood Avenue
- Landscape: 20 feet
- Building: 30 feet

Hemlock Avenue (west of Davis Street)
- Landscape: 20 feet
- Building: 20 feet

Hemlock Avenue (east of Davis Street)
- Landscape: 15 feet
- Building: 20 feet

Heacock Street
- Landscape: 20 feet
- Building: 20 feet

Davis Street
- Landscape: 15 feet
- Building: 15 feet

Eastern Project Boundary
- Landscape: 20 feet
- Building: 50 feet (or equal to the building height, whichever is less)

Southern Project Boundary
- Landscape: 20 feet
- Building: 20 feet

Where the rear of the building faces a major road, the setback from the road shall be equal to the street frontage setback.

Building Height

Building heights shall be variable depending on the building use and set-back lines. The list below identifies the guidelines representing the allowable building heights and levels for different building uses.

Building Use	Maximum Height
Commercial Retail	45 feet
Commercial Offices	60 feet
Business Park	55 feet
Other Uses	35 feet

The maximum height of any structure shall be sixty (60') feet. There shall be an additional two (2') foot setback for each foot of additional building height.

The maximum heights noted are to the top of roof level and exclude the parapet height.

5.1.4.3 Table Representing Types of Uses Permitted to Planning Areas

Table 1
Land Use Matrix - List of Permitted and Conditionally Permitted Uses

Development Types Corresponding Zone District	Planning Area							
	1	2	3	4	5	6	7	8
Auto-Related Uses (CC- Community Commercial)								
Automobile Sales, New and Used *(CC Zone)*	*C	*C	*C				*C	*C
Automobile Service Stations *(CC Zone)*	*C	*C	P	*C		P	*C	*C
Auto Repair, Minor Service *(CC Zone)*	P	P	P	P		P	P	P
Auto Repair, Paint and Major Service *(CC Zone)*	*C	*C	P	*C		P	*C	*C
Auto Rentals *(CC Zone)*	P	P	P	P		P	P	P
Auto Related, Accessory Uses *(CC Zone)*	*C	*C	P	*C		P	*C	*C
Auto Supply Stores *(CC Zone)*	P	P	P	P		P	P	P
Car Wash *(CC Zone)*	P	P	P	P		P	P	P
Parking Lot & Parking Structure *(CC Zone)*	P	P	P	P		P	P	P
Indoor, Entertainment, Fitness, & Sports Facilities (CC- Community Commercial)								
Theaters and Auditoriums *(CC Zone)*	P	P	P	P		P		
Athletic Clubs, Gymnasiums, and Spas *(CC Zone)*	P	P	P	P		P	P	P
Recreational Facilities, Commercial Indoor/Outdoor *(CC Zone)*	P	*C	P	*C		P	P	P
Business Park (LI-Light Industrial & BP-Business Park)								
Light Industrial *(LI Zone)*	P	P	P	P			P	
Manufacturing & Assembly *(LI Zone)*	P	P	P	P				
Research & Development *(BP-Zone)*	P	P	P	P			P	P
Wholesale & Limited Distribution *(LI Zone)*	P	P	P	P			P	P
Nursery, Wholesale and Distribution *(LI Zone)*	P	P	P	P				P
Parcel Delivery Terminals *(LI Zone and BP-Zone)*	P	P	P	P				P
Transfer, Moving, & Storage *(LI Zone)*	P	P	P	P				P
Office, Business Services, & Professional *(CC-Community Commercial, O-Office & OC -Office Commercial)*								
Banks, including ATMs & drive-thru *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Business Offices *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Business & Office Equipment Sales and Supply Stores *(CC Zone)*	P	P	P	P		P	P	P
Computer Sales and Repairs *(CC and OC Zones)*	P	P	P	P		P	P	P
Copy Shops *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Day Care Centers *(CC, O, and OC Zones)*	P	P	P	* C		P	P	P
Finance, Insurance, and Real Estate *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Laboratories, Medical, & Dental *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Medical Offices *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Medical Clinics/Medical Care *(CC, O, and OC Zones)*	P	P	P	P		P	P	P

Table 1
Land Use Matrix - List of Permitted and Conditionally Permitted Uses (continued)

Corresponding Zone District and Sample Development Types	Planning Area							
	1	2	3	4	5	6	7	8
Retail, Commercial, & Food Related (CC- *Community Commercial*)								
Medical Equipment *(CC and OC Zones)*	P	P	P	P		P	P	P
Personal Grooming *(CC and OC Zones)*	P	P	P	P		P	P	P
Personal Services *(CC and OC Zones)*	P	P	P	P		P	P	P
Public Buildings *(CC, O, and OC Zones)*	P	P	P	P		P	P	P
Veterinary Office *(CC)*	P	P	P	P		P	P	P
Bakeries *(CC Zone)*	P	P	P	P		P	P	P
Barbers & Beauty Colleges (CC Zone)	P	P	P	P		P	P	
Bars *(CC Zone)*	P	P	P	*C		P	P	
Bars with Live Entertainment *(CC Zone)*	P	*C	P	*C		P		
Bowling Alley *(CC Zone)*	P	P	P	P		P		
Building Material Sales, incl. Outdoor Storage *(CC Zone)*	P	*C	P	*C		P	P	P
Business Equipment Sales, Includes Repairs *(CC Zone)*	P	P	P	P		P	P	
Business Supply Stores *(CC Zone)*	P	P	P	P		P	P	
Catering Service *(CC Zone)*			P	P		P	P	
Churches *(CC Zone)*	P	P	P	*C		P	P	
Communication Facilities *(CC Zone)*			P	P		C	P	
Computer Sales & Repairs *(CC Zone)*	P	P	P	P		P	P	
Convenience Stores *(CC Zone)*	P	P	P	P		P	P	
Convenience Stores with Alcohol Sales *(CC Zone)*	C	C	P	* C		P	P	
Dancing, Art, Similar Schools *(CC Zone)*	P	P	P	P		P	P	
Dry Cleaning & Laundry *(CC Zone)*	P	P	P	P		P	P	
Electronics & Sales *(CC Zone)*	P	P	P	P		P		
Fast Food/Fast Casual Restaurant *(CC Zone)*	P	P	P	P		P	P	P
Fast Food/Fast Casual Restaurant with Drive-thru *(CC Zone)*	P	P	P	P		P	P	P
Floor Covering Stores *(CC Zone)*	P	P	P	P		P	P	P
Food Delicatessen *(CC Zone)*	P	P	P	P		P	P	P
General Commercial *(CC Zone)*	P	P	P	P		P	P	P
Hardware & Home Furnishings *(CC Zone)*	P	P	P	P		P	P	P
Heavy Equipment Sales & Rentals *(CC Zone)*			P	P		P		P
Hospital *(CC Zone)*			P	*C		P	P	P
Ice Cream & Yogurt *(CC Zone)*	P	P	P	P		P	P	P
Indoor Storage, Mini Warehouses *(CC Zone)*			P	P		P	P	P
Jewelry Stores *(CC Zone)*	P	P	P	P		P	P	P
Liquor Stores *(CC Zone)*	*C	*C	P	*C		P		
Medical Equipment Sales & Supplies *(CC Zone)*	P	P	P	P		P	P	P
Mortuary, Excluding Cremation *(CC Zone)*	P	P	P	*C		P		
Offices, Administrative & Professional *(CC Zone)*	P	P	P	P		P	P	P

Table 1
Land Use Matrix - List of Permitted and Conditionally Permitted Uses (continued)

Corresponding Zone District and Sample Development Types	Planning Area							
	1	2	3	4	5	6	7	8
Personal Services, Nail Salons/Spas/Barbers/Beauty *(CC Zone)*	P	P	P	P		P	P	P
Pharmacies, with and without Drive-Thru *(CC Zone)*	P	P	P	P		P	P	P
Postal Services *(CC Zone)*	P	P	P	P		P	P	P
Recreational Facilities, Commercial *(CC Zone)*	P	P	P	*C		P	P	P
Rental Services, Furniture, Office, Home *(CC Zone)*	P	P	P	P		P	P	P
Sit-down Restaurants *(CC Zone)*	P	P	P	P		P	P	P
Skating Rinks *(CC Zone)*	P	P	P	P		P	P	P
Specialty Retail *(CC Zone)*	P	P	P	P		P	P	P
Stationary Stores *(CC Zone)*	P	P	P	P		P	P	P
Supermarkets *(CC Zone)*	P	P	P	P		P	P	P
Tire Stores & Tire Repair *(CC Zone)*	P	P	P	P		P	P	P
Trade & Vocational Schools *(CC Zone)*	P	P	P	P		P	P	P
Weight Reduction Centers *(CC Zone)*	P	P	P	P		P	P	P

KEY:**P** = Permitted Uses **C** = Conditionally Permitted Use
* CUP if within 300 feet of a residential zone or use
Blank Box = Not Permitted
Notes:
(1) Where Live entertainment is present, such uses are subject to activity entertainment permit.
(2) Permitted as part of a mixed use commercial or retail center.
(3) Residential permitted without industrial in the same planning area. (4) Senior Housing Subject to a Development Agreement.
(5) ♦ Indicates a use is permitted unless the use is located three hundred (300) feet or less from a residential zone or use, in which case the use is allowed with a conditional use permit.
**19.11.030C. *(denoted above)* The location of a proposed manufacturing or industrial use relative to residentially-zoned property *shall represent the sole factor for determining whether discretionary review is required pursuant to this section.*

Explanation of General Categories as provided for in table 9.02.020 of the municipal code.

1. Auto-Related Uses

The auto-related uses designation refers to those activities that involve vehicle repair, servicing, cleaning, fuel sales, and the sale of new vehicles. Auto-related uses may also include new automobile sales centers, auto service stations, auto tuning businesses, car wash businesses (including hand car washing), and parking structures that serve the other businesses located within the Planning Area only. The off-site parking requirements for new development within this land use designation must conform to Title IX of the Municipal Code, City of Moreno Valley Zoning Ordinance. Overnight parking shall only be permitted on a project basis and will be subject to the approval of the City. A more detailed list of permitted and conditionally permitted land uses in this land use designation is provided in Table 2-2 at the end of this section.

2. Indoor, Entertainment, Fitness and Sports Facility

This land use designation includes those businesses that are predominantly involved in participant sports and health activities conducted entirely within an enclosed building. Typical uses include studio-style facilities such as dance/ballet, yoga, martial arts, gymnasiums, spas, athletic clubs, fitness studios, sports bars, billiard halls, indoor carting, and video and arcade type entertainment uses. In addition, theaters are included in this land use designation. These future uses must also meet the City's off-street parking requirements.

3. Business Park

The Business Park land use designation provides for a range of general business activities. This land use designation will permit typical back office, research & development, wholesale, storage, and light industrial operations that include warehousing services and wholesale activities related distribution of food and other products. These future uses must also meet the City's off-street parking requirements. Activities under this classification shall be conducted in enclosed buildings. Retail sales from the premises may occur though parking must be provided based on the square footage. The Specific Plan Amendment assumes that buffers and site treatments will be required as a means to mitigate any impact related to the business park activity.

4. Office Business and Professional Services

This land use designation applies to those uses that may include, but not be limited to, business administrative, management services, consulting, professional/personal services, clerical staffing, and data processing/storage. These uses may also typically include general office uses, corporate headquarters, branch offices, financial institutions, call centers, medical/dental health services, laboratories/clinics; professional and design offices, and research. Other permitted activities include, but may not be limited to, chemical and biotechnology research and development, food, computer software companies, soils and other materials testing, or medical laboratories.

These future uses must also meet the City's off-street parking and landscaping requirements.

5. Retail, Commercial and Food Related

Business included in this category will be exclusively engaged in retail sales. Potential land uses engaged in retailing activities may include, but not be limited to, home electronics, discount centers, department stores, specialty retail sales, grocery stores and markets, pharmacies, appliance and home goods, and home supply and hardware stores. Other uses included in this category include personal services that may include, but are not limited to hair salons, nail and makeup studios, shoe repair, tailors, etc. These future uses must also meet the City's off-street parking and landscaping requirements. This use classification includes establishments primarily within buildings, providing other businesses with services such as maintenance, repair and service, testing, rental, etc. This use classification does not include massage or tattoo establishments, which are separately classified herein.

6. Open Space

The open space designation applies only to Planning Area V, a 12.9 acre area located in the in the northeastern portion of the Specific Plan Amendment Area. The intent of this designation is to preserve this storm water detention basin as a permanent open space. Planning Area V is intended to remain as is and used as a buffer to the residential and other development areas.

5.1.4.4 Prohibited Uses

The following uses are prohibited within The "MVF" development:

- Adult business establishments (as identified in the Municipal Code Section 9.09.030).
- Any hospital or other facility that is licensed by the California Department of Public Health, or by the California Department of Mental Hygiene, not including a family care, foster home or group home that serves six or fewer persons or assisted living facility.
- Any home or other facility for home care that is licensed by the California Department of Social Welfare, or by the Riverside County Department of Public Welfare, not including a home or facility that serves six or fewer children or aged persons, nor a large family day care home that services seven to twelve children.

5.1.4.5 Detention Basin

According to the originally approved SP 205, Phase I included development of the twelve (12) acre recreation area/flood control basin. The current specific plan shall not include the development of the detention basin.

The primary purpose of this site is for a flood control basin which will be maintained by the Riverside County Flood Control and Water Conservation District, unless such responsibility is offered by the City. The City owned detention basin will normally be dry and will serve to retain excess storm flow once the flow has exceeded the capacity of the existing outlet channel under Highway 60 at the southeast corner of the site. There is a sub-drain down the center of the basin so that small drainage flows can be maintained below the surface of the area.

5.1.5 Subdivision Map Act

Lots created within the "MVF" Specific Plan area shall comply with the Subdivision Map Act and be in conformance with the Specific Plan.

5.1.6 Water Quality Management Plan

All development within the "MVF" shall be subject to applicable laws of the State of California regarding water quality.

5.1.7 Trash and Recyclable Materials

All development within the "MVF" shall provide enclosures (or compactors) for collection of trash and recyclable materials subject to water quality standards and best management practices (BMP).

Screening and buffering within individual projects will be necessary in some locations to provide separation between different land uses and to conceal unattractive views.

Design criteria for landscape screening methods are as follows:

- Dense shrubs and vines shall be used in combination with architecturally compatible walls to screen trash enclosures and service areas. Planting

areas should be provided on three sides of the enclosure walls with a minimum width of three (3') feet.

- Trash enclosure shall be located a minimum of thirty-five (35') feet from adjacent residential structures.
- Landscape screening shall be opaque up to a minimum height of six (6') feet at maturity.
- Loading areas shall be recessed and screened wherever possible to minimize visibility of service vehicles from nearby properties or streets.
- Landscaping or a durable noncombustible enclosure shall be used to conceal transformers, mechanical ducts, and site equipment.
- Trash enclosures shall be designed in general compliance with City Public Works standards, and shall be located in areas which are not prominent to building or site orientations.
- The design of attached structures shall incorporate the same architectural detailing and coloration as the main building they are accessory to.
- Split-face concrete block (natural grey or matching color of building elevation) shall be allowed at free-standing trash enclosures.

5.1.8 Waste Hauling

Construction and other waste disposal shall be hauled to a City-approved facility.

5.1.9 Water Quality Site Design

5.1.9.1 General Standards

Refer to the National Pollution Discharge Elimination System (NPDES) Permit Board Order R8-2010-0033 for complete and current information on water quality management standards. Current requirements can be obtained by visiting the State Water Resource Control Board website at www.swrcb.ca.gov.

5.1.9.2 Water Quality Management Plan

Most developments are required to implement a Water Quality Management Plan (WQMP) in accordance with the NPDES Permit Board Order R8-2010-0033. The WQMP for the Santa Ana Region of Riverside County was approved by the Santa Ana Region Water Quality Control Board on October 22, 2012. Projects identified as a 'Priority Development project' are required to prepare a Project-Specific WQMP.

The MS4 Permit mandates a Low Impact Development (LID) approach to storm water treatment and management of runoff discharges. The project site should be designed to minimize imperviousness, detain runoff, and infiltrate, reuse or evapotranspirate runoff where feasible. LID Best Management Practices (BMPs) should be used to infiltrate, evapotranspirate, harvest and use, or treat runoff from impervious surfaces, in accordance with the Design Handbook for Low Impact Development Practices. The project should also ensure that runoff does not create a hydrologic condition of concern. The Regional Water Quality Control Board continuously updates impairments as studies are completed. The most current version of impairment data should be reviewed prior to preparation of the Preliminary and Final Project-Specific WQMP.

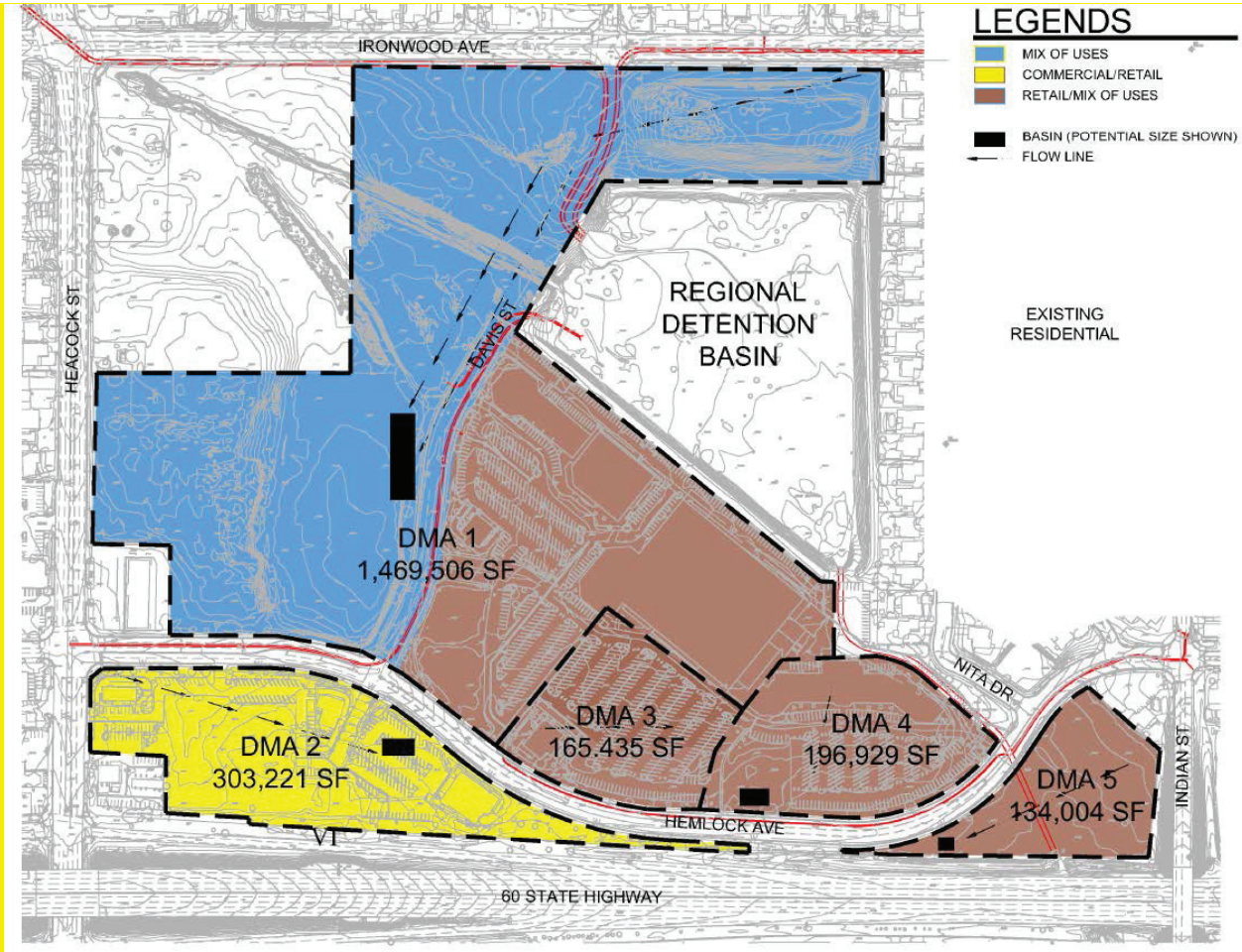


Figure 5-4 Water Quality Management Exhibit

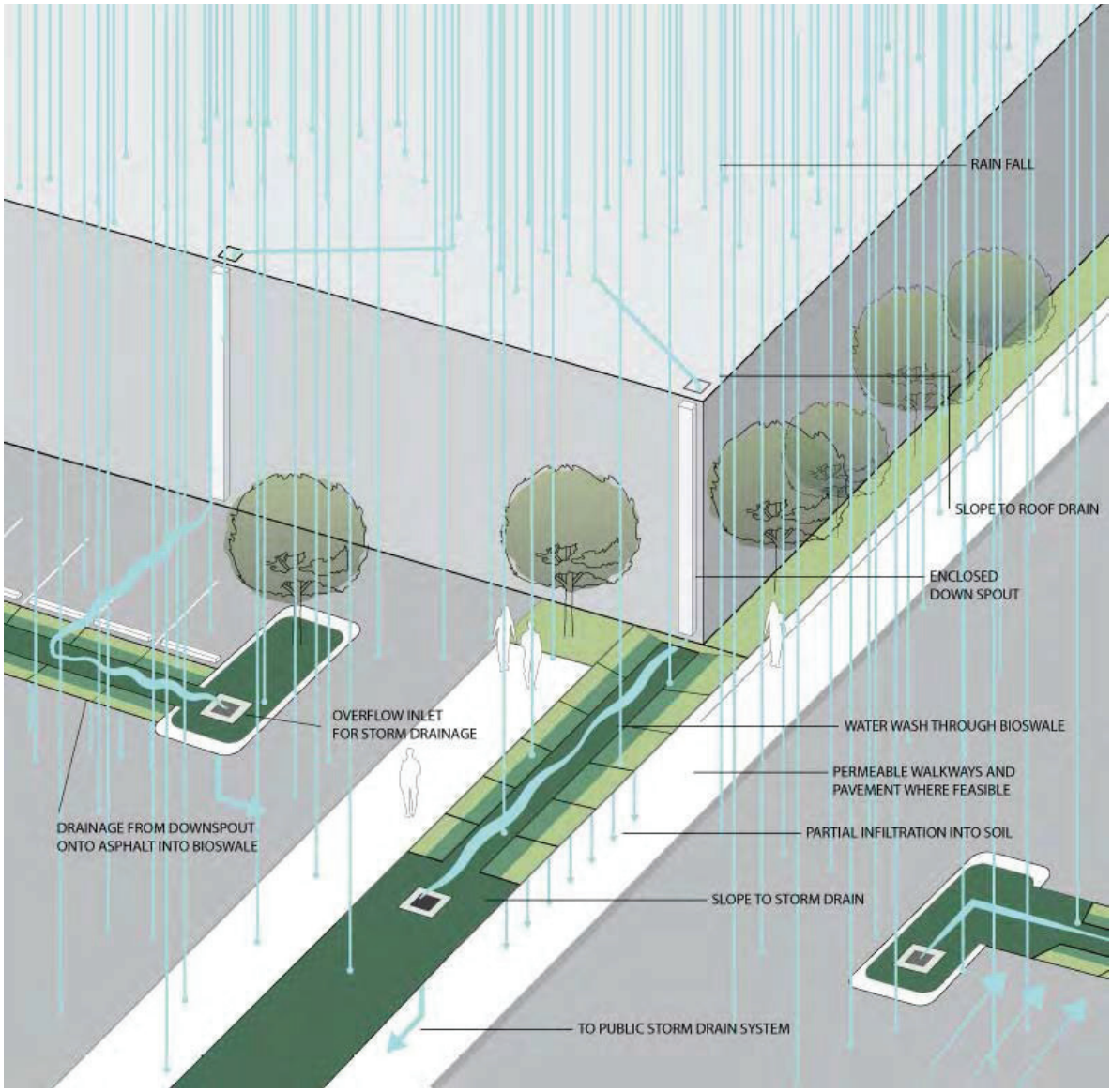


Figure 5-5 Water Quality Management Diagram

5.1.9.3 Site Design BMPs

Site Design BMPs are intended to create a hydrologically functional project design that attempts to mimic the natural hydrologic regime. In accordance with the Riverside County WQMP, project proponents shall implement Site Design concepts that achieve each of the following:

- Minimize Urban Runoff
- Minimize Impervious Footprint
- Conserve Natural Areas
- Minimize Directly Connected Impervious Areas (DCIAs)

Methods of accomplishing the Site Design concepts include:

- Maximize the permeable area.
- Incorporate landscape buffer areas between sidewalks and streets.
- Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.
- Use of natural drainage systems.
- Where soil and conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.
- Construct ponding areas or detention facilities to increase opportunities for infiltration consistent with vector control objectives.
- Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.
- Sites must be designed to contain and infiltrate roof runoff, or direct roof runoff to vegetative swales or buffer areas, where feasible.
- Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.
- Increase the use of vegetated drainage swales in lieu of underground piping or imperviously lined swales.
- Parking areas may be paved with a permeable surface, or designed to drain into landscaping prior to discharging to the MS4.
- Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.

Figure 5-6 Example of Water Quality Feature

5.1.9.4 Source Control BMPs

Source Control BMPs are also required to be implemented for each project as part of the Final WQMP. Source Control BMPs are those measures which can be taken to eliminate the presence of pollutants through prevention. Such measures can be both non-structural and structural.

Potential non-structural Source Control BMPs include:

- Education for property owners, operators, tenants, occupants, or employees.
- Activity restrictions.
- Irrigation system and landscape maintenance.
- Common area litter control.

- Street sweeping private streets and parking lots.
- Drainage facility inspection and maintenance.

Potential structural Source Control BMPs include:

- Stenciling and signage
- Landscape and irrigation system design
- Protect slopes and channels
- Properly design fueling areas, trash storage areas, loading docks, and outdoor material storage areas

5.1.9.5 Treatment Control BMPs

The Treatment Control BMP strategy for the project is to select Low Impact Development (LID) BMPs that promote infiltration and evapotranspiration, including infiltration basins, bio detention facilities, and extended detention basins. Generally infiltration BMPs have advantages over other types of BMPs, including reduction of the volume and rate of runoff, as well as full treatment of all potential pollutants potentially contained in the storm water runoff. It is recognized however that infiltration may not be feasible on sites with low infiltration rates, or located on compacted engineered fill. If the BMP is considered in a fill condition, and the infiltration surface of the BMP cannot extend down into native soils, or if the BMP is considered in a cut condition, and there is no practicable way to verify infiltration rates at the final BMP elevation, infiltration BMPs will not be used. Prior to final design, infiltration tests shall be performed within the boundaries of the proposed infiltration BMP and at the bottom elevation (infiltration surface) of the proposed infiltration BMP to confirm the suitability of infiltration. In situations where infiltration BMPs are not appropriate, bio detention and/or bio treatment BMPs (including extended detention basins, bio swales, and constructed wetlands) that provide opportunity for evapotranspiration and incidental infiltration will be considered. Harvest and use BMPs will also be considered as a Treatment Control BMP to store runoff for later non-potable uses. Ponds may be used to collect storm water runoff for harvest and use.

5.1.9.6 Infiltration Basin

An infiltration basin is a flat earthen basin designed to capture the design capture volume. The storm water infiltrates through the bottom of the basin into the underlying soil over a 72 hour drawdown period. Flows exceeding the design capture volume must discharge to a downstream conveyance system. Infiltration basins are highly effective in removing all targeted pollutants from storm water runoff. The use of infiltration basins may be restricted by concerns over groundwater contamination, soil permeability, and clogging at the site. Where this BMP is being used, the soil beneath the basin must be thoroughly evaluated in a geotechnical report since the underlying soils are critical to the basin's long term performance. To protect the basin from erosion, the sides and bottom of the basin must be vegetated, preferably with native or low water use plant species.

In addition, these basins may not be appropriate for the following site conditions:

- Locations where spills may occur
- Sites with very low soil infiltration rates
- Sites with high groundwater tables or excessively high infiltration rates, where pollutants can affect groundwater quality
- Sites with unstabilized soil or construction activity upstream
- On steeply sloping terrain

5.1.9.7 Biodetention Facility

Biodetention facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant update of pollutants and runoff. This keeps the BMP from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a biodetention facility is unlined, which also provides an opportunity for infiltration to the extent that the underlying onsite soil can accommodate it. When the infiltration rate of the underlying soil is exceeded, fully bio treated flows are discharged via underdrains. Biodetention facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly bio treated) discharge to the storm drain system.

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, biodetention facilities can be used in smaller landscape spaces on the site, such as:

- Parking islands
- Medians
- Site entrances

Figure 5-7 Example of Biodetention Facility

Landscape areas on the site can often be designed as bio detention facilities. This can be accomplished by:

- Depressing landscape areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces into the bio detention facility, rather than away from the landscaping
- Sizing and designing the depressed landscape area as a biodetention facility as described in the Riverside County Low Impact Development BMP Design Handbook.

Figure 5-8 Example of Water Quality Feature

5.1.9.8 Extended Detention Basin

The extended detention basin is designed to detain the design volume of storm water and maximize opportunities for volume losses through infiltration, evaporation, evapotranspiration, and surface wetting. Additional pollutant removal is provided through sedimentation, in which pollutants can attach to sediment accumulated in the basin through the process of settling. Storm water enters the basin through a forebay where any trash, debris, and sediment accumulate for easy removal. Flows from the forebay enter the top stage of the basin which is vegetated with native grasses and interspersed with gravel-filled trenches which together enhance evapotranspiration and infiltration. Water that does not get infiltrated or evapotranspired is conveyed to the bottom stage of the basin. At the bottom stage of the basin, low or incidental dry weather flows will be treated through a media filter and collected in a sub drain structure. Any additional flows will be detained in the basin for an extended period by incorporating an outlet structure that is more restrictive than a traditional detention basin outlet. The restrictive outlet extends the drawdown

time of the basin which further allows particles and associated pollutants to settle out before exiting the basin, while maximizing opportunities for additional incidental value losses.

5.2 Site Planning Guidelines

5.2.1 Overview

The "MVF" Specific Plan has an overall, coordinated design character that emphasizes a unified neighborhood quality image and a clean contemporary design image. This image is expressed in site planning, architecture, landscaping, and lighting. Architectural design is to be compatible in character, massing and materials throughout The "MVF," while allowing for individual identity and creativity in each project. Landscaping, building design, lighting, and utilities are to be closely coordinated along roadways. Criteria for occupancy, building heights, site planning, architecture, landscaping, and lighting are given in further detail in the following sections.

5.2.2 Design Objectives

The objective of the guidelines is to promote the planned image of a quality Mix of Uses development serving the "MVF" residents, users, and visitors in the area. Each site will be developed in a manner that emphasizes a pleasant and contemporary environment, and produces an effect that is consistent and compatible with the adjacent sites and development throughout the "MVF."

Development standards for individual projects pertaining to permitted uses, setbacks, building heights and parking requirements are addressed in Chapter 4. It is necessary to provide the appropriate buffers separating between different project building uses within the same planning area. The buffers shall be visually appealing and create segregation between the uses that still blend in the overall "MVF" image.

The following guidelines pertain to site design and are organized according to the permitted land use within the "MVF" plan.

Commercial

- Building masses and setbacks should vary along streetscapes to prevent monotony.
- Buildings and landscaping should be situated as to allow good visibility of signage.
- Circulation design should allow for easy ingress and egress from primary streets. All minimum distances between curb cuts shall comply with City of Moreno Valley street standards.
- Parking areas should be readily visible upon entering and within close proximity of building entries. Parking design requirements shall comply with Title 9 Planning and Zoning standards Chapter 9.11.
- The pedestrian experience shall be enhanced by landscaped walkways, crosswalks and accent paving. Adequate lighting, bike racks and trash receptacles shall also be provided.
- Pedestrian walkways within all commercial projects should be wider than standard with a minimum width of (6') six feet.

- The inclusion of seating in public spaces consisting of benches, chairs or planter edges is encouraged.

Office

- Spatial relationships between buildings should be considered in order to create entry plazas and to successfully integrate outdoor spaces into the project site.
- Building clusters are encouraged to create a campus setting, allowing for larger expanses of landscaped open space.
- Views and solar orientation should be considered for the building's orientation on the site while considering the environmental impacts and surrounding space.
- The scale of buildings should be compatible with nearby residential neighborhoods.
- Visitor parking shall be readily visible upon entering and within close proximity to building entries.
- Employee parking should be located in the rear of the buildings, wherever possible.

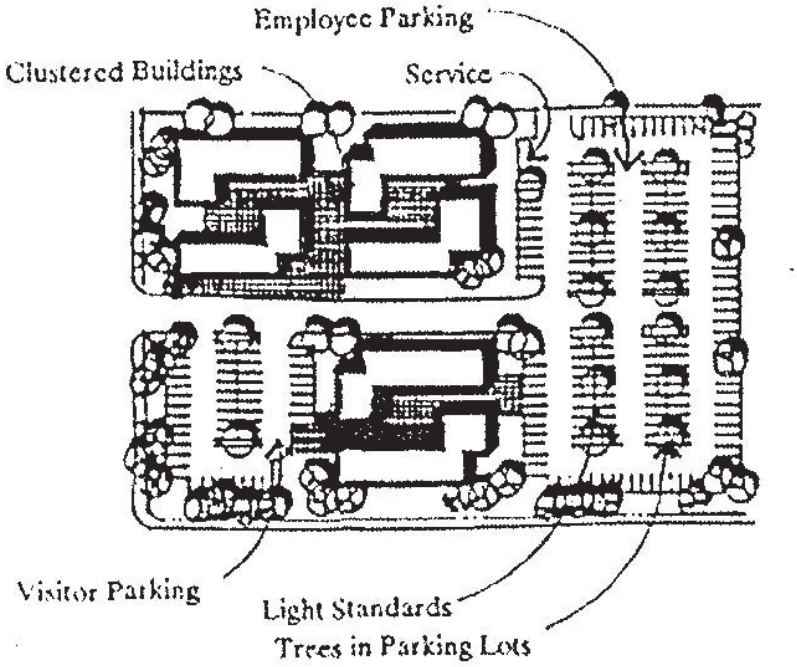


Figure 5-9 Office Design Standards

Business Park

- A variety of building sizes and setbacks should be provided in order to avoid long monotonous building facades and to create diversity.
- Building setbacks should be provided proportionate to the scale of the structure and in consideration of existing development adjacent to it. Larger structures may require more setback area for a balance of scale.
- Access to the Business Park zones shall be controlled and visually pleasing.

- Business Park service areas shall not be visible to the public and shall be located on the sides and/or rear of buildings. Screening of outdoor storage, work areas, and equipment shall be incorporated.
- Where Business Park uses are adjacent to non-Basin uses, appropriate buffering techniques such as setbacks, screening, and landscaping need to be provided to mitigate any negative effects of operations.
- The maximum allowable levels shall be one story and a partial mezzanine. The mezzanine area shall not exceed one-third of the first floor area.

Retail

- The entrances to the Retail areas shall be welcoming and clearly identified.
- It is recommended to have the Retail areas clustered in a plaza with a shared visitor car parking area.
- Building location on the site shall allow convenient vehicular access to visitor's parking, on-site circulation, and viewing from the surrounding street.
- Retail loading and unloading areas shall not be visible to the public and shall be located on the sides and/or rear of buildings.
- The maximum allowable levels shall meet the California Building Code requirements and the Specific Plan requirements stated in this document.
- Pedestrian Site access from surrounding uses shall be considered. Landscape and signage shall be used to enhance the pedestrian experience along the route to the retail areas.
- The inclusion of landscape furniture in public spaces consisting of benches, chairs, planters, and soft landscape are encouraged.

5.2.3 Sustainable Design

Building in an ecological and resource-efficient manner has many advantages for the environment as well as for building users. Sustainable design reduces pollution and conserves natural resources. The architects and engineers that make contributions to the "MVF" must understand this and strive to lessen the impact their designs have on the environment. The following sustainability goals have been set for buildings at the MVF:

- Design buildings to accommodate renewable energy systems where feasible.
- Create building forms and landscape that protect residents, users, visitors, patrons, and employees from unpleasant climate conditions.
- Use water resources responsibly with a constant effort, to minimize the use of potable water.
- Incorporate life cycle planning and decision making.

The design of each building at the "MVF" will pursue these goals, by incorporating design features such as, but not limited to, the following:

Water conservation:

- Low flow faucets and fixtures.
- Rain water collection (where practical).
- Native landscape.
- Direct and capture low-use irrigation and rainfall runoff to landscape areas.

Energy conservation:

- Building orientation.
- Glazing, overhangs, and landscaping to capture and control natural daylight.
- High performance glazing.
- Use of atriums, skylights and internal courtyards to provide additional daylighting.

Natural resource conservation:

- Use of renewable materials where feasible
- The use of building materials with recycled content where feasible

5.2.4 Building Location

Buildings are to be located on each site in a manner that is efficient, appropriate to site conditions, supportive of the overall architectural composition, and compatible with nearby projects throughout the "MVF."

- Buildings shall be located to enhance project visibility and identity, while maintaining compatible relationships with adjacent projects and street views.
- Buildings shall be oriented so that loading and service areas are screened from view from streets and public areas.
- Buildings shall be arranged to provide convenient access to entrances and efficient on-site circulation for vehicles and pedestrians.
- Buildings shall be arranged to provide landscape outdoor plazas or entries.
- Customer parking shall be convenient to public building entries, as shown below.

5.2.5 Site Access

Vehicular access to retail areas will remain for the existing retail portion of the development. The new retail portion will be developed per the City of Moreno Valley development standards.

- Project access and circulation shall allow for both vehicles and pedestrians by separating autos and foot traffic, by creating pedestrian entrances to projects and by using enhanced paving treatments, bollards or pergolas to identify pedestrian pathways through parking areas and along buildings (Per Municipal Code 9.11.080).

- Projects shall minimize impacts on adjacent streets by consolidating access points. Access points should be consolidated to take advantage of planned or existing median breaks.

5.2.6 Vehicular Circulation

Onsite vehicular circulation should be clear and direct.

- Drive aisles should make a loop around the structures and avoid dead end parking. In the case of straight drive aisles, provide at least ten (10) feet of setback between the last parking stall and the property line (Per Municipal Code 9.11.080).
- Dead-end parking aisles which exceed eight standard parking stalls in length, and serving greater than sixteen (16) standard stalls for dual lanes, shall provide turnaround facilities (i.e., hammerhead, cul-de-sac, etc.) adequate to accommodate emergency vehicles.

5.2.7 Parking

Landscape development in parking areas shall be designed to provide safety and comfort to the drivers and pedestrians and enhance the visual quality of the City. The design shall reduce auto noise, lights and glare, and ambient temperature. The design shall also minimize visual disruption from the surrounding streets and adjacent developments, per Municipal Code Section 9.11.080.

- All spaces will be double striped and shall be nine (9') feet wide and eighteen (18') feet long;
- The maximum length of straight aisles shall not exceed three hundred (300) feet. Parking rows shall not be longer than one hundred eighty (180) feet.
- Parking lot design shall include openings in curbs to convey water runoff into landscape areas for water quality, retention and absorption. Pervious surfaces are recommended where feasible and required for parking areas provided in excess of city requirements.
- Landscape finger planters shall have a minimum interior dimension of five (5) feet by sixteen (16) feet, exclusive of curbs, step-outs and other hard surfaces. A finger planter with parking on one side has a minimum curb-face-to-curb-face dimension of seven (7) feet. An island with parking on both sides has a minimum curb-face-to-curb-face dimension of eight (8) feet.
- Diamond planters have a minimum of twenty-five (25) square foot interior area (exclusive of perimeter curbing) with minimum interior dimensions of five (5) feet by five (5) feet. The minimum exterior area (including perimeter curbing) is thirty-six (36) square feet.
- Where double rows of parking are provided, diamond or island planters are provided at an interval of one planter every three pairs of parking stalls. Minor adjustments are allowed in cases where this exact interval would be infeasible.
- A finger planter is provided at an interval of every twelve (12) parking stalls along any row of parking. Minor adjustments are allowed in cases where this exact interval would be infeasible.

- Planter Curbs and Step-Outs. Planters shall be separated from parking spaces by a six-inch wide concrete curb. Where a planter (finger or island) is located on the side of a parking space, a twelve (12) inch wide concrete step-out is required along the long dimension of the parking space. A step-out is required, in addition to a six-inch curb, resulting in a combined concrete surface measuring eighteen (18) inches in width.
- Trees shall be planted at the equivalent of one tree per thirty (30) linear feet of building dimension that is visible from the parking lot or public right-of-way. Trees may be massed for pleasing aesthetic effects.
- Parking lot trees shall be a minimum of fifteen (15) gallon size, twenty-five (25%) percent of the required trees shall be twenty-four (24") inch box or larger. One-half (1/2) of the twenty-four (24") inch box trees shall be placed in the street frontage or side yard setback.
- The selection of parking lot trees should emphasize the provision of summer shading of pavement and vehicles. Within a maximum of ten (10) years, parking lot trees shall shade a minimum of fifty (50) percent of parking space pavement during the summer months, between one and four in the afternoon. A maximum of fifty (50) percent of the parking lot trees may be deciduous. Avoid trees with excessive leaf litter, sap or fruit that could damage vehicles.
- Parking lot trees shall be planted at a cleared distance from light standards so the trees will not interfere with the lighting pattern of the light fixture. Light standards shall be shown on conceptual plans and subsequent planting plans.
- Parking lot trees shall be planted to align with the ends of parking lot stripes (between cars) and away from light standards, in order to create adequate shade canopies, and avoid damage to tree trunks.
- Landscaped areas in the parking lot shall be planted with shrub masses to discourage pedestrians from crossing landscaped areas to reach building entrances. All soil surfaces in the planting areas shall be covered with shrubs and/or groundcovers.
- Car overhang onto sidewalk permitted only when a minimum eight (8') foot sidewalk exists.
- Off-street parking shall be provided to accommodate all vehicles associated with the permitted use of each site. On-street parking is prohibited along Heacock Street, Ironwood Avenue and Hemlock Avenue.
- Designated spaces must be positioned in convenient locations for handicap, carpool, alternate fuel vehicles, motorcycles and bicycles as required by the State of California and the City of Moreno Valley.
- Parking areas for motorcycles and bicycles are to be designed for orderly, uncluttered parking. Bicycle parking areas are to be provided with racks and locking capabilities per Municipal Code.
- The view of parking areas from public streets shall be softened by means of grading and/or landscaping.
- Parking is prohibited in any required landscape areas.

- Parking lots shall comply with the accessible parking standards required by the City of Moreno Valley.

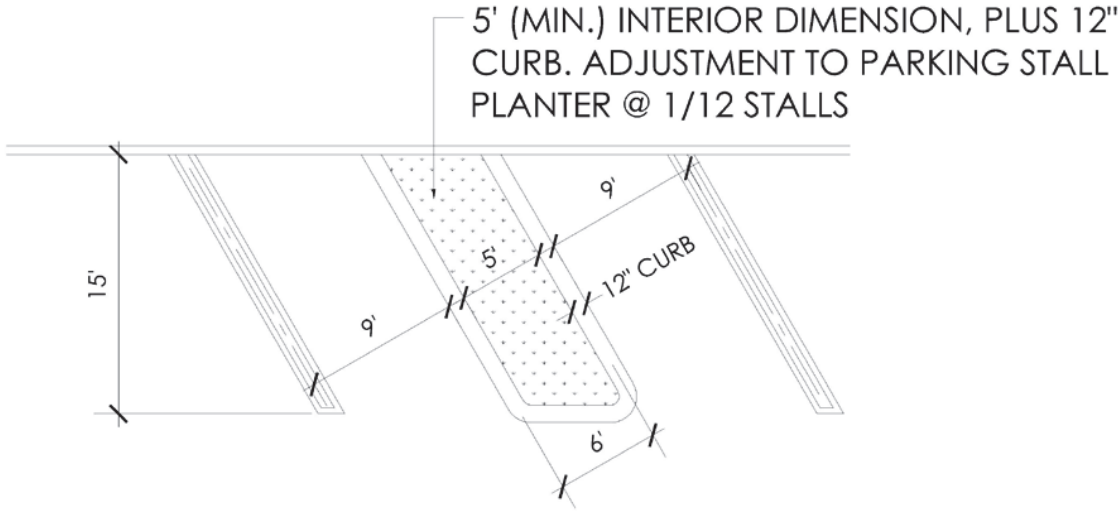


Figure 5-11 Parking Configurations at 60 Degree Compact Space with Planters

5.2.8 Pedestrian Circulation

Safe, clear pedestrian circulation must be provided between buildings, parking areas, and entries on all sites. Where a pedestrian walkway into the site from the public sidewalk is provided, it should be located at a driveway and in conformance with the street tree interval.

5.2.9 Truck Parking

All new and existing truck loading areas are or shall be screened from public view from adjacent streets per this Specific Plan.

5.2.10 Service Areas

Service, storage, maintenance, loading, refuse collection areas and similar facilities are to be located out of view of public roadways and buildings on adjacent sites, or screened by a fence, wall, landscaping, berming or a combination of screening components. Service areas may not extend into required building and landscape setback zones. Service areas should be located and designed so that service vehicles have clear and convenient access and do not disrupt vehicular and pedestrian circulation. No loading or unloading is permitted from public streets.

Trash/waste enclosure shall be located at a minimum of thirty-five (35) feet from any residential structures. Trash/waste enclosures shall be constructed to include a solid roof, provide a minimum three feet landscaped planter on three sides of the enclosure walls, and accommodate climbing vines and screening shrubs within the planter area. Design of a trash enclosure should use materials and colors aesthetically compatible with the project, per Municipal Code Title 9, Chapter 9.08.150 – Screening Requirements.

5.2.11 Grading and Drainage

All project grading shall conform to the Municipal Code. Site grading and drainage shall be designed so that surface drainage is collected and treated before leaving the site. Site grading shall be designed to be compatible with streetscape grades and to minimize the need for handrails or pedestrian ramps within the site. Concrete swales in parking lots should be located at the edge of parking spaces and/or curb. Swales are prohibited in the middle of drive aisles. Directing drainage to curb and gutters is preferred over concrete swales. Run-off from roofs, site, and impervious areas shall be directed to planter areas to minimize run-off.

5.2.12 Walls & Fences

Walls and fences must be designed as an integral part of the overall architectural or landscaping design concept. When the walls / fencing are provided within designated edge treatment areas, they shall follow the guidelines below:

- Along the Ironwood Avenue and Heacock Street boundary, 8' high solid fencing shall be used to restrict access and view to the residential areas and provide a sound buffer from traffic noise.
- The fencing shall be of a durable decorative material (concrete or CMU).
- Plot Plans shall include all site fencing details.
- Where the project immediately abuts the residential area at the east boundary of the project, the developer will build an eight (8') foot decorative block wall.

Materials

Walls are to be constructed of materials compatible with the overall design character of the buildings. Walls shall be cast-in-place concrete or CMU where they are located. Fencing walls abutting the residential developments shall be concrete or CMU. Interior fencing separating similar building types and uses may be wrought iron or tubular steel. Chain link fencing is permitted only where it is not visible from streets, sidewalks, public parking areas or public building entries, in the industrial, commercial, and retails uses.

Design features may include:

- Varied heights, wall plane offsets, and angles.
- Pilasters or distinctive elements.
- Trim, reveals.
- Minor changes of material and finishes where appropriate.
- Trellis/vine panels, landscape pockets.

Figure 5-13 Community Fencing Arrangement Example

Walls within Street-side Landscape Setback

Low-profile parking lot screen walls or garden walls are permitted in street-side landscape area, and shall not exceed three feet in height.

Height

Screen walls shall not exceed the height necessary to screen vehicles and loading areas. Pilasters and distinctive elements may exceed this maximum.
Walls or fences in the residential landscaping area visible from the street and not intended for screening purposes shall be limited to a height of 3' 0". Refuse enclosures shall have walls not less than 6'-0" high. Planting areas for vines, shrubs, and trees shall be provided at the rear and sides of all enclosures.

Gates Visible From Public Areas

Pedestrian and vehicular access gates visible from public areas (i.e., parking lots, streets, sidewalks, etc.) shall be constructed of a durable material, such as tubular steel and be aesthetically pleasing and consistent with the design of the development.

Prohibited Materials

Barbed wire, wire, integrated corrugated metal, electronically charged fences, and exposed plastic vinyl fences are prohibited.

5.3 On-site Architecture

Architectural design should express the character of a mixed use, commercial, and retail development center in a manner that is progressive and enduring. Individual creativity and identity are encouraged, but care must be taken to maintain design integrity and compatibility among all projects in order to establish a clear, unified image throughout the "MVF."

Design continuity can be accomplished through the sensitive massing of structures and limited use of materials and colors. This design strategy will provide a unifying thread throughout the various land uses while still allowing variety and individual expression to occur.

The Architectural design standards propose general guidelines that would enhance the integrity of the entire "MVF" development.

5.3.1 Architectural Standards

General building design guidelines for Mix of Uses, commercial, and retail uses are as follows:

- Distinctive architectural design shall be encouraged to create individual building identity. However, buildings must be compatible with adjacent development projects to achieve a sense of architectural continuity. Detailing may vary but all materials are to be durable, aesthetically pleasing and low maintenance.
- The building's scale should be a major determining factor in the architectural design and detailing. Long expanses of building walls may be ameliorated by employing a system of overlapping forms and heights.
- The architectural concept must be consistent throughout the individual project with consideration given to all sides. Distinctive hardscape and colorful landscaping should be used to identify and accentuate building entries.

5.3.1.1 Architectural Theme

The previous "MVF" theme was based upon examples of east coast markets and made many nautical architectural references. We find that this reference is not the most appropriate reference for this development. The intent of this specific plan is to develop the areas with more appropriate design features. Clean lines and a neighborhood friendly design are the focus of our concept. Our focus is on a pedestrian friendly development whether it is developed as commercial, retail, business park, medical or a hotel, it will provide the community with a connection on the human scale through detailing and finishing.

Figure 5-14 Architectural Character

Figure 5-15 Possible Retail Development Example

Figure 5-16 Possible Commercial Development Example

The designs are intended to be contemporary but allow for cultural specific design concepts to represent the diverse demographics of Moreno Valley, and loosely follow the modernist axiom "form follows function". Signage that complements the buildings will be used to establish identity from the State Highway, and entries for major tenants will be differentiated to heighten their importance relative to the in-line shops. The building forms and colors of the "MVF", while primarily designed for their visual impact from the State Highway, will also provide the architectural detail and articulation to capture the

pedestrians' interest. The use of trellises, canopies, and awnings are encouraged to mitigate tall building masses, and effect a more human scale.

A broader interpretation of the "MVF" style is anticipated for the outlying pad buildings. A varied and creative use of the design elements and materials illustrated in this manual will add to the festive appeal of the retail centers. It should also be recognized that pad tenants are often representing retail chains for which an established corporate image has already been developed. These tenants will adhere to the standards established for the overall development, yet retain their individual commercial identity.

The following guidelines apply to the architectural forms and materials in the "MVF" development:

Building Walls

- Tilt-up concrete, concrete block masonry, precast concrete panels and plaster are all appropriate substrates and finishes. Tilt-up concrete should be painted; concrete block should be sandblasted; split-face block should be plastered or painted; plaster should be uniformly textured with spray, sand a float finishes only.
- Concrete should be naturally colored grey or white concrete; plaster may be white, gray or light earth tones of primary hue.
- Use of glazed or unglazed ceramic tile, stone or metal panels are also permitted as facade and base treatments.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

Accents

- Horizontal or vertical banding of tile or painted reveals is encouraged to add interest.
- Storefronts should be colored; mullions used in grid patterns are encouraged.
- Clerestory windows and skylights are encouraged as design elements to be expressed externally and internally.
- Colored tile panels and stucco forms may be used as an alternate to steel framing.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.
- Cantera Stone in a variety of colors.
- Murals.

Roofs

- Gable, hip, pyramidal and parapet roofs are permitted with pitches ranging from 3:12 to 5:12. Mansard roofs are discouraged.

- Metal standing seam and flat concrete tile roofs are acceptable. Spanish tile, wood shakes and flat clay tile shall also be permitted.
- Metal roofs should be painted to match the theme of the development. Concrete tile roofs should be limited to neutral colors.
- Roof tops should be designed to be visually attractive when viewed from adjacent buildings or roadways. Roof mounted equipment shall be concealed from public view to the extent possible. If exposed, equipment shall be screened by roof structure or architecturally integrated screening.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

Canopies

- Exposed metal decking, plasters soffits and steel structures are permitted. Vinyl awnings and accent colors are encouraged; natural wood is encouraged.
- Columns may be plaster, sonotube concrete or concrete masonry.
- Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

Arcades

- Metal standing seam roofs as well as open steeland wood trellises, expanded metal and wood trellises, or fabric awnings may be used to create visual counterpoints and added interest.
- Colonnades of plaster, block, concrete and/or steel framing may be used to mitigate long expanses of wall.
  Finish colors and materials shall be light, warm, and natural earth palette colors that match and blend with the surrounding environment. The colors and materials shall be selected from the approved list that shall be provided by the designated Owner design agent.

5.3.1.2 Signage

Retail commercial uses have specific signage requirements and designs which must be approved by the City of Moreno Valley. A detailed, comprehensive sign program shall be submitted for each proposed development application within the Specific Plan. The sign program shall describe sizes, colors, materials, and lettering styles for all project signs. Individual project signs shall be submitted to the master developer for review and approval. Three (3) copies of developer approved and signed plans shall be submitted to the City for review and approval.

The following sketches are provided to illustrate the proposed quality and design continuity in the "MVF" development, while permitting both individual creativity and commercial marketability for the tenant:

Figure 5-17 Retail / Commercial Example

5.3.1.3 Architectural Character

The Architectural character, especially for the retail elements, should portray a high quality image in a manner that is both progressive and timeless

Appropriate Characteristics for Retail elements:

- Style that enforces neighborhood retail market image.
- Spaces that encourage connection to foot traffic from the existing residential neighborhoods
- Opportunities for outdoor dining
- Clean, smooth, efficient lines which emphasize horizontality
- Distinctive, but compatible image

Figure 5-18 Example of Appropriate Characteristics for Retail

Inappropriate Characteristics for Retail elements:

- Trendy styles
- Tricky, complicated, arbitrary forms
- Sharp contrast with surroundings
- Dull unarticulated and flat elevations with sharply contrasting non-harmonious color schemes.

Figure 5-19 Example of Inappropriate Characteristics for Retail

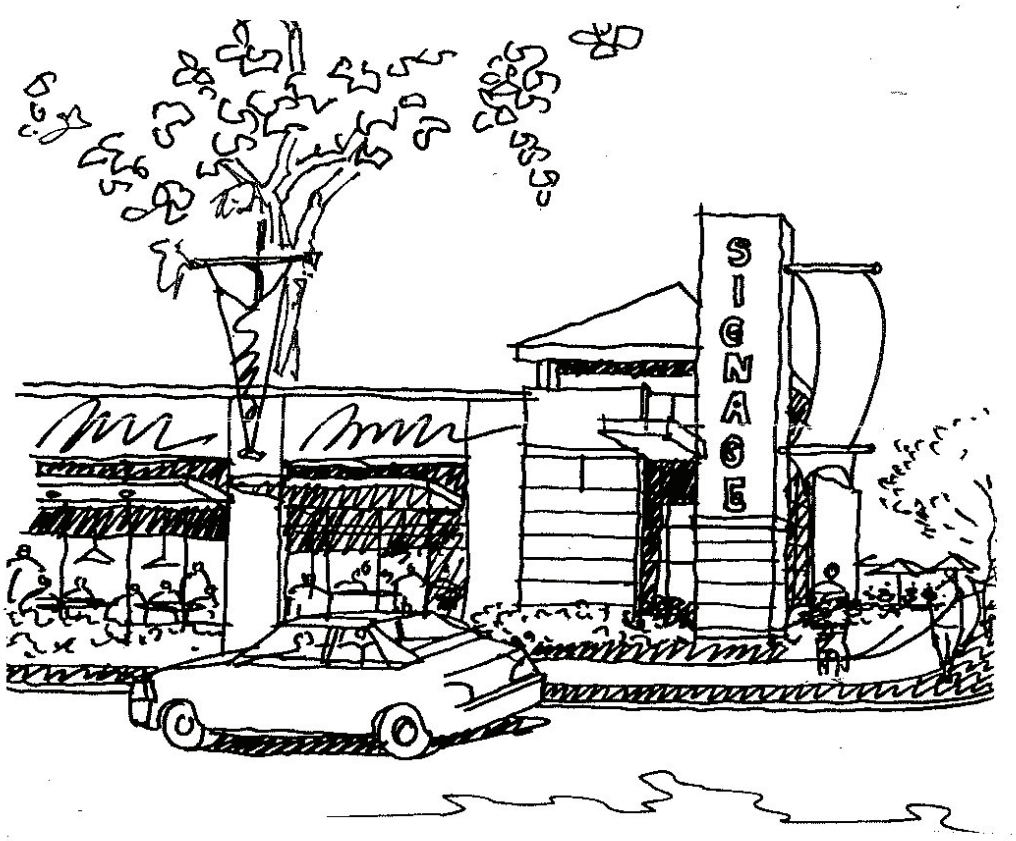


Figure 5-20 Example of Appropriate Characteristics for Retail

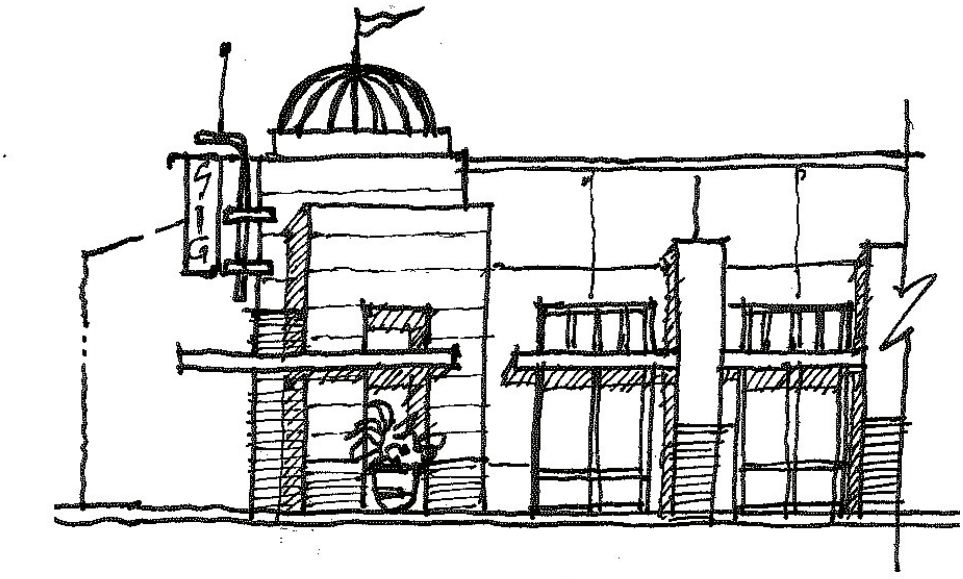


Figure 5-21 Example of Appropriate Characteristics for Retail

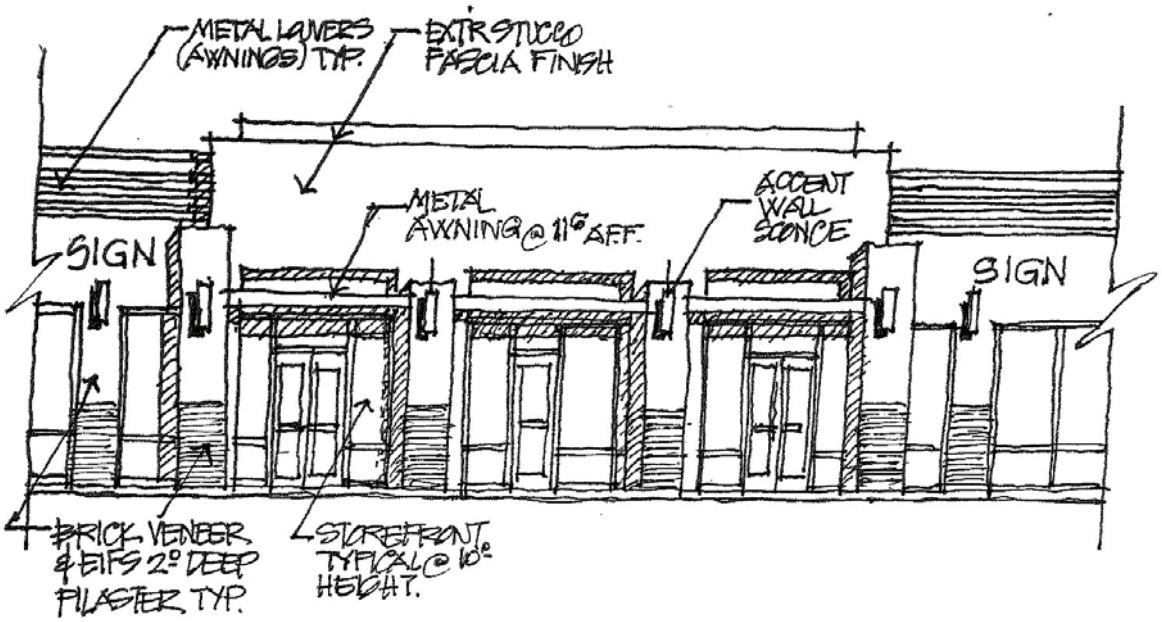


Figure 5-22 Example of Design Detailing for Retail

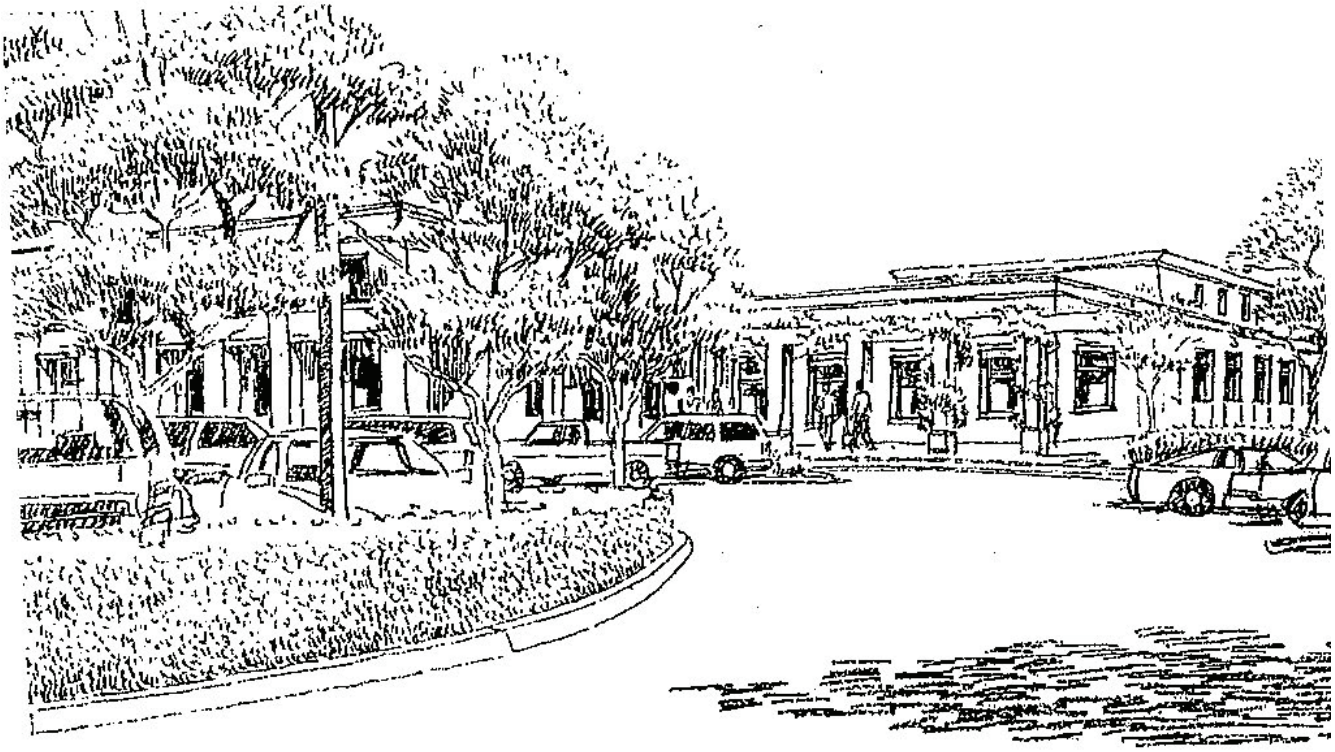


Figure 5-23 Example of Design Aesthetic for Retail

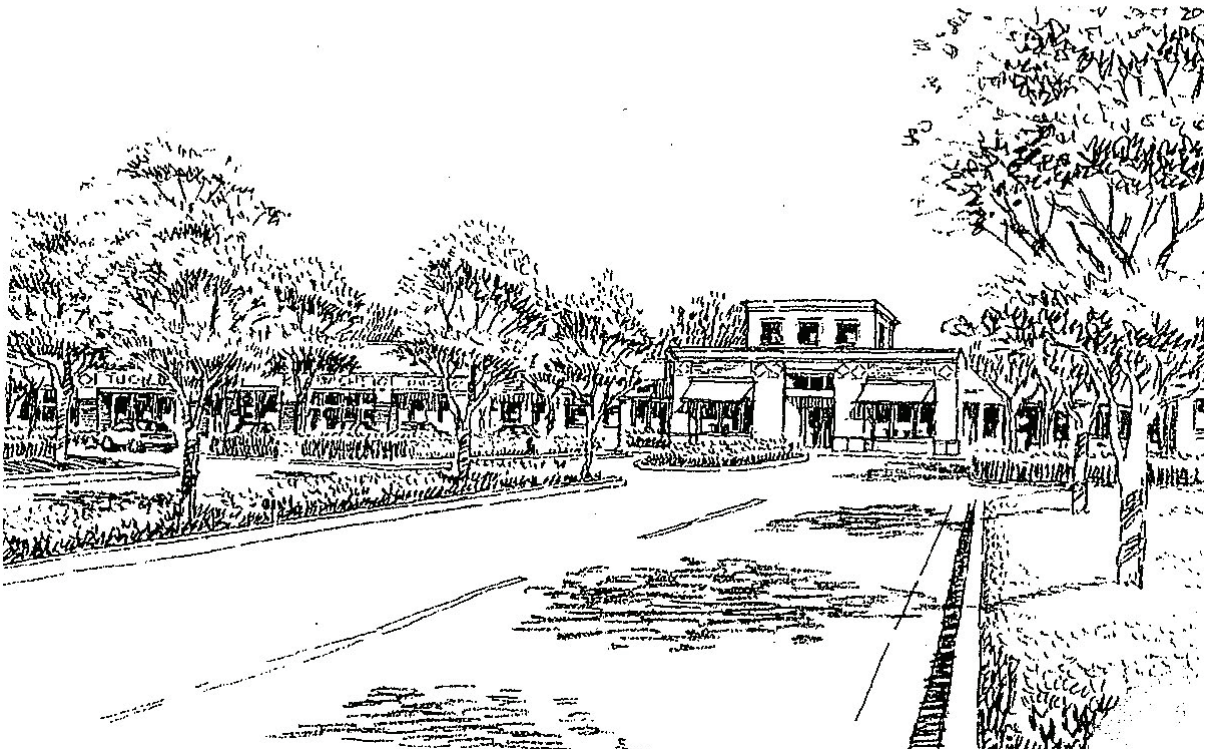


Figure 5-24 Example of Design Aesthetic for Retail

5.3.1.4 Exterior Building Materials

Exterior finishes shall be durable, attractive, consistent, and complementary in color and style:

Walls

- STUCCO: Spray machine finish color to match specifications provided by owner specified design agent.
- MASONRY: Split-face concrete masonry units in natural grey or a tone of beige color.
- METAL: Decorative and shear wall metal panels are permitted. Metal panel and structural specifications shall match the Owner's specified design agent.

Roofs

- Concrete, built up, membrane, composition shingle or flat clay tile roof materials should match specifications provided by the Owner's specified design agent.

Accents

- PAINT: To match specifications provided by the Owner's specified design agent.
- DECORATIVE PATTERN TILES: To match specifications provided by the Owner's specified design agent.
- VENEERS: Brick and Stone veneers to match specifications provided by the Owner's specified design agent.

Paving

- FIELD: Natural concrete in broom, sandblasted or exaggerate finish, and brick pavers.
- ACCENT: Stamped concrete in 6x6 or 12x12 grid patterns color to match specifications provided by owner specified design agent.

*Substitutions and additions to the above materials and colors may be permitted with review by owner specified design agent and the City of Moreno Valley.

5.3.1.5 Design Details

Detailing should be clean, clear and straightforward. Details should reinforce overall design unity, interest and scale.

Appropriate Treatment

- Coordinated mullions and details
- Expression and alignment of structural connections
- Finishes commensurate with building materials
- Coordinated entry spaces and landscaping
- Use of Cantera Stone / Hard Foam / Stucco Cornices and Water Scuppers

Inappropriate Treatment

- Insufficient or excessive detailing
- Inadequate interface between materials
- No indication of scale
- Lack of interest

5.3.1.6 Ground-Mounted Equipment

All exterior ground-mounted equipment-including, but not limited to, mechanical equipment, electrical equipment, emergency generators, boilers, storage tanks, risers, electrical conduit, gas lines, cellular telephone facilities, and satellite dishes must be screened from on-site and off-site view, per Municipal Code, Chapter 9.08 - General Development Standards. Wall-mounted equipment is not allowed.

Appropriate Treatment:

- Ground equipment hidden by screen walls or landscaping
- Screen walls of same or similar material as building walls
- Vines, shrubs, trees on rear and sides of enclosure

Figure 5-25 Example of Appropriate Ground Mounted Equipment Screening

Inappropriate Treatment:

- Screen material contrasting with adjacent surfaces
- Wood or chain link fencing
- No planting areas for vines, shrubs, and trees, at the rear or sides of walled enclosures

Figure 5-26 Example of Inappropriate Ground Mounted Equipment Screening

5.3.1.7 Roof-Mounted Equipment

All roof-mounted equipment including, but not limited to, mechanical equipment, electrical equipment, storage tanks, cellular telephone facilities, satellite dishes, skylights, vents, exhaust fans, smoke hatches, and ducts must be below the top of the parapet or equipment screen. Roof access shall be through roof hatches, not exterior ladders. Roof hatches shall be located so that guardrails at parapets are not required.

Appropriate Treatment

- Rooftop screens should be provided to screen the equipment and align with the Architectural theme.
- All roof mounted mechanical equipment shall be screened from the ground elevation view to a reasonable sight distance. Above ground utility service areas and enclosures shall be screened from view with landscaping and decorative barriers or baffle treatments.

Inappropriate Treatment

- Rooftop equipment extending above parapet or screen
- One-sided rooftop screens that do not hide the equipment from view from secondary streets or from adjacent sites
- Rooftop screens too close to parapet
- Rooftop screens not related to building geometry
- Wood rooftop screens

5.3.1.8 Ancillary Structures

On a case by case basis, additional buildings may be required to house functions for the proper operation of the facility. The design guidelines found herein apply to all structures regardless of the time of construction, location on site, or use they contain.

5.3.1.9 Building Appurtenances

On a case by case basis, the proper functioning of a facility may require a piece of equipment, ductwork, shaft, conveyance mechanism, etc. to be physically added to the side of the main building. These appurtenances must comply with the guidelines stated herein to allow for aesthetic continuity.

Figure 5-27 Example of Building Appurtenance

5.4 On-site Landscaping

5.4.1 Objectives

Landscaping is an important element contributing to the identity and unity of the "MVF." As such, all landscaping for the project shall:

- Promote a pleasant, distinctive, environment,
- Augment internal cohesion and continuity within the "MVF";
- Enhance the structured urban design concept of the "MVF," and;
- Promote water conservation.

The landscaping design concept is focused toward:

- Providing a clean, contemporary visual appearance,
- Coordinating the landscaping treatment along State Highway and surface streets to emphasize the circulation system,
- Coordinating streetscapes within the "MVF" to unify its general appearance, and
- Coordinating on-site landscaping design continuity among individual development sites within the "MVF."

The following guidelines present parameters for general landscape design, water conservation, streetscapes, and on-site landscaping.

General landscape criteria for the "MVF" are listed in Section 5.4.3. Project developers must adhere to those criteria as well as the guidelines for individual

parcel development. Each individual project site within the "MVF" development has been divided into two distinct landscape zones:

- The Transition Zone while includes the property between the landscape setback and buildings or parking lots within individual developments.
- The Interior Zone which includes all other landscape areas located on individual parcels.

Landscape guidelines for the two zones differ and it is advisable for project developers to be aware of the requirements before submitting a landscape plan for review by the City of Moreno Valley. Landscape requirements for the Transition Zone have been established to insure a sense of continuity between individual parcels and the general development areas. All areas within this zone must "Incorporate a minimum of sixty percent (60%) of the same trees in the general development area adjacent to the parcel. Guidelines for the Interior Zone allow for the individual project's identity to be reinforced through the use of a variety of plant materials. However, in order to strengthen The "MVF" landscape theme, plant materials within this zone shall be selected from the "Project Plant List" in Section 5.4.4. A simplified palette of plant materials, including evergreen and deciduous trees, should be used in order to maintain the desired landscape theme for each individual lot.

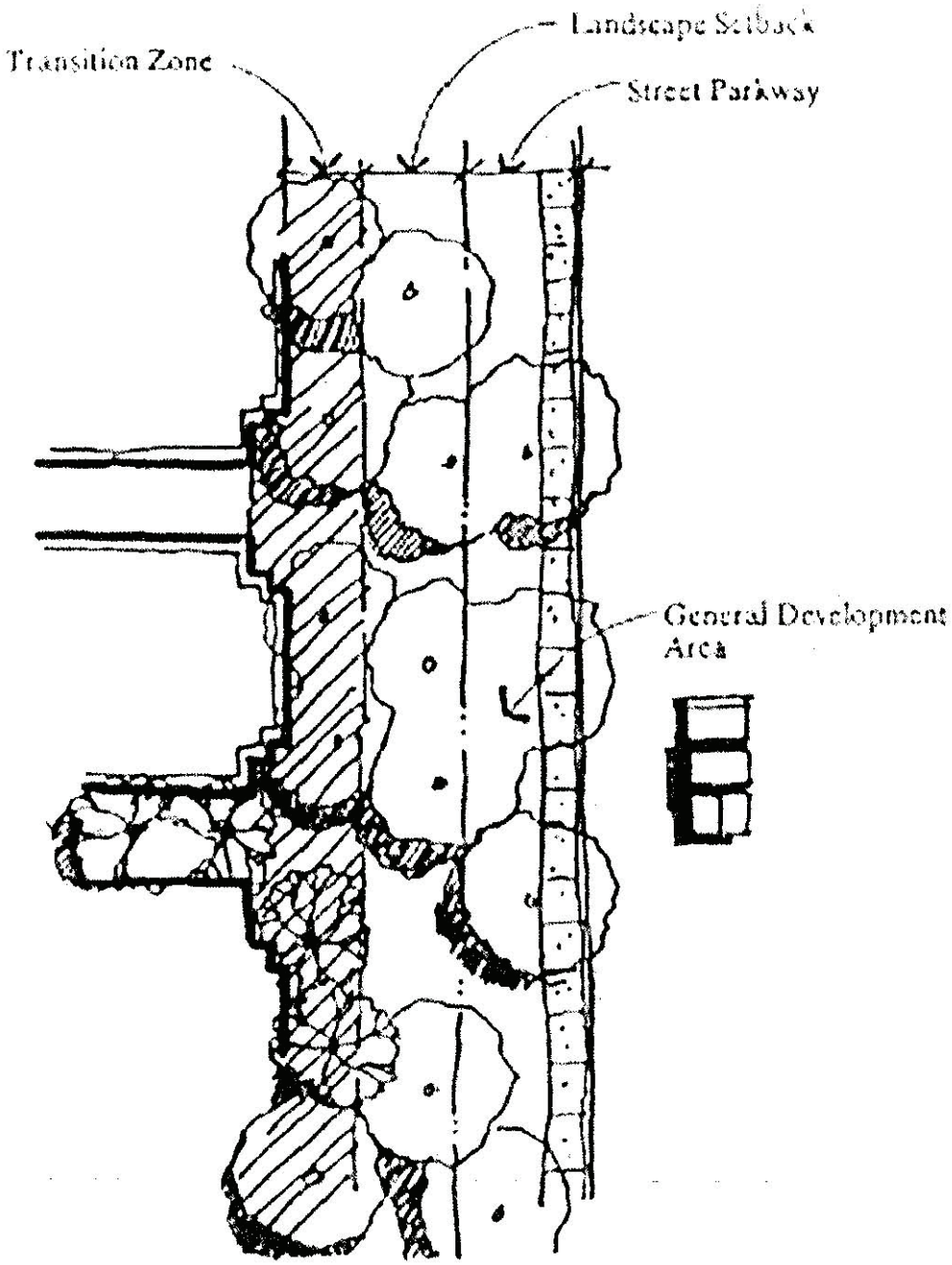


Figure 5-33 Onsite Landscaping Standards

5.4.2 Water Conservation Measures

The "MVF" employs an aggressive approach to water conservation. Every element of the landscape program has been evaluated to determine how to achieve the project's landscape goals while maintaining maximum water efficiency. From the formulation of the overall landscape concept, through each level of the design process, to the day-to-day maintenance practices of the installed materials, conservation of limited water resources is a primary focus. At maturity, the landscaping at the "MVF" project will provide a strong, clean,

simple design element, demonstrating the "MVF" commitment to the creation of a sustainable neighborhood environment.

The landscape program will incorporate the following design elements and practices to minimize the use of limited water resources:

Project Design:

- Design project so that pads, streets and other paved areas drain to landscape areas, medians and parkways.
- Maximize water harvesting, detention and treatment techniques throughout the project.
- Direct rooftop and parking area runoff to bio-swales, basins or landscaped areas

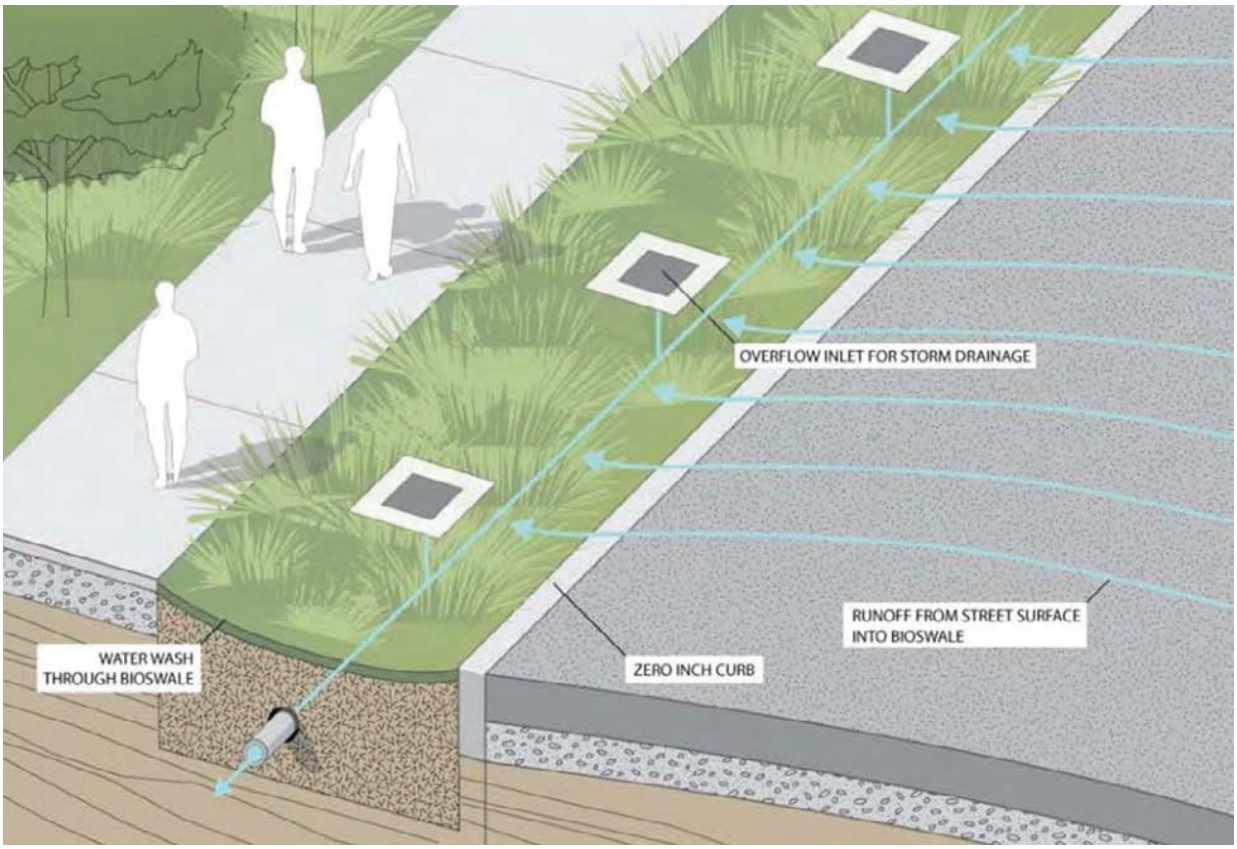


Figure 5-34 Off-site Water Management Plan

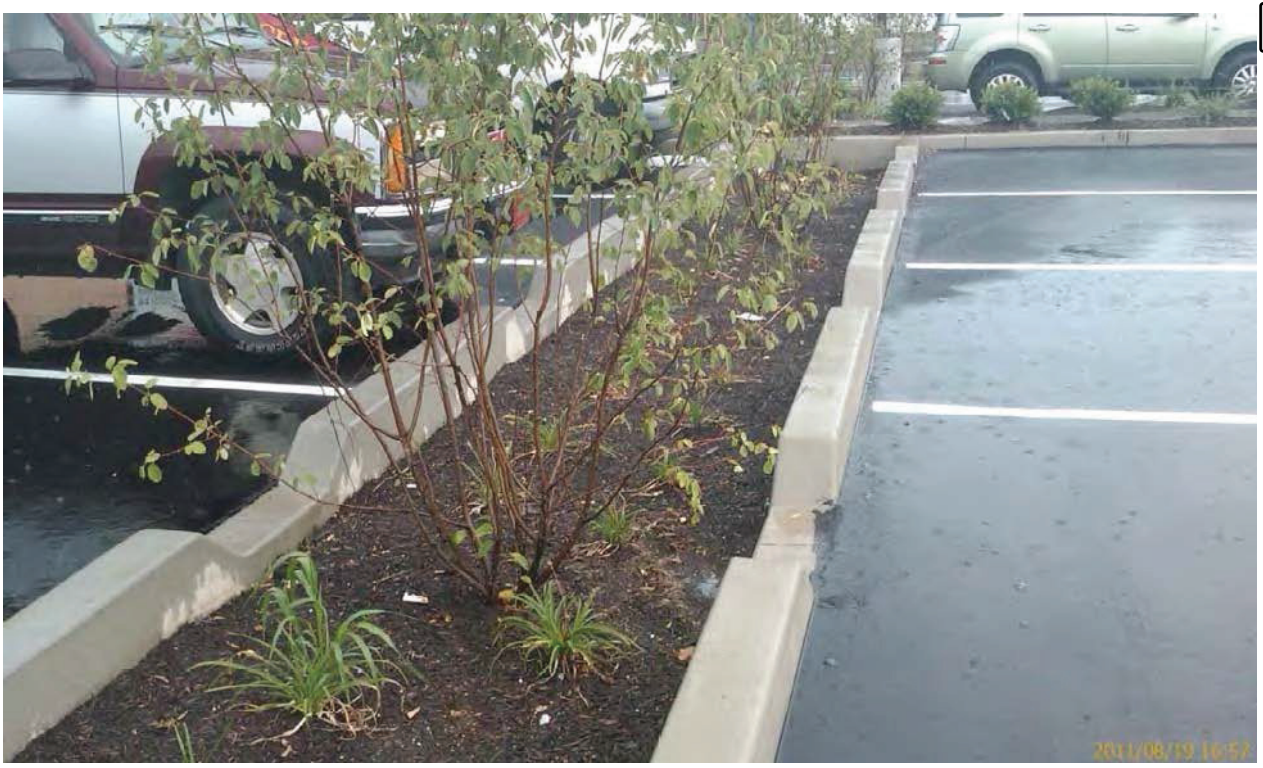


Figure 5-35 Example of Bio-swale

5.4.3 Landscape Criteria

Onsite landscaping is to be coordinated in a manner that enhances overall continuity of development in the "MVF," while providing for the individual identity and needs of each project within. The design must address the following criteria.

- Landscaping should be used to reinforce site planning principles, such as using trees to define parking lots and drive aisles.
- Plant materials for on-site landscaping are to be selected from the Plant Selection List, Section 5.4.4.
- Flexibility in the choice of plant materials is limited along street frontages and site perimeters to enhance landscaping coordination along common frontages, but increases toward the site interior to accommodate individual design.
- Landscaping in parking areas shall comply with the standards contained in the Municipal Code.
- Planting areas for vines, shrubs, and trees is required at the rear and sides of walled enclosures, including trash enclosures.
- Comprehensive planting, including trees, is required along all screen walls, buildings and site perimeters.
- All projects which include designated truck loading areas shall screen such areas from view from adjacent public streets and from onsite visitor parking and building entry areas. Such screening shall be accomplished with solid block walls and opaque metal gates.
- Landscaping within truck loading areas, not visible from public view, shall be designed to be sustainable without artificial irrigation, relying on rainfall

and runoff from adjacent impervious surfaces (i.e. truck yards and building roofs); landscaping is not required for gated truck courts.

- The landscape design shall also incorporate sustainable techniques to capture and direct rainfall runoff to these landscape areas. These areas may include slopes, water quality basins and drainage facilities. Rock or organic mulch shall be placed between plantings to provide coverage and erosion protection.
- Landscaping in visitor parking areas and any other areas visible from public view shall have a higher level of landscape treatment and shall utilize an automatic irrigation system to maintain the desired level of landscape appearance. The landscape design shall incorporate sustainable design techniques to capture and direct rainfall runoff to landscape areas, reducing the need for supplemental irrigation.

5.4.4 Landscape Planting

All trees to be 15 gallon, minimum, unless otherwise noted.

Evergreen Trees

• Pinus Halepensis	Aleppo Pine
• Acacia Baileyana	Bailey Acacia
• Geijera parviflora	Australian Willow
• Pinus canariensis	Canary Island Pine
• Schinus molle	California Pepper Tree
• Tristania conferta	Brisbane Box
• Schinus molle	California Pepper
• Quercus ilex	Holly Oak
• Rhus lancea	African Sumac
• Pinus eldarica	Mondell Pine
• Rhaphiolepis 'Majestic Beauty'	Indian Hawthorn
• Washingtonia robusta	Mexican Fan Palm
• Chilopsis linearis	Desert Willow
• Magnolia grandiflora	Southern Magnolia

Deciduous Trees

• Bauhinia variegata	Purple Orchid Tree
• Eucalyptus nicholii	Red Ironbark
• Koelreuteria paniculata	Golden Rain Tree
• Liquidambar styaciflua	American Sweetgum
• Cinamomum camphora	Camphor Tree
• Jacaranda mimosifolia	Jacaranda
• Albizia julibrissin	Mimosa
• Lagerstroemia indica	Crape Myrtle
• Platanus racemosa	California Sycamore
• Platanus acerifolia	London Plane Tree
• Cercidium 'Desert Museum'	Palo Verde
• Gleditsia triacanthos	Honey Locust
• Cercis occidentalis	Western Redbud

Shrubs

• Escallonia fradesi	NCN
• Heuchera spp.	Coral Bells
• Lantana spp.	Lantana
• Ligustrum japonicum 'Texanum'	Texas Privet
• Dietes iridioides	Fortnight Lily
• Nandina domestica-dwarf cultivars	Dwarf Heavenly Bamboo
• Raphiolepis indica 'Clara'	Indian Hawthorn
• Leucophyllum texanum	Texas Ranger
• Salvia greggii	Autumn Sage
• Rosmarinus 'Tuscan Blue'	Rosemary
• Dodonaea viscosa	Hopseed Bush
• Callistemon 'Little John'	Bottle Brush
• Muhlenbergia rigens	Deer Grass
• Muhlenbergia capillaris	Pink Muhly

- Westringia fruticosa — Coast Rosemary
- Bougainvillea spp — Bougainvillea
- Aloe spp.
- Encelia farinosa — Brittlebush

Ground Covers

- Leymus condensatus 'Canyon Prince' — Lyme Grass
- Myoporum parvifolium — NCN
- Trachelospermum jasminoides — Star Jasmine
- Baccharis pilularis 'Twin Peaks' — Dwarf Coyote Brush
- Senecio mandraliscae — NCN
- Rosmarinus officinalis 'Prostratus' — Prostrate Rosemary
- Bougainvillea spp. — Bougainvillea

5.4.5 Minimum Landscape Areas

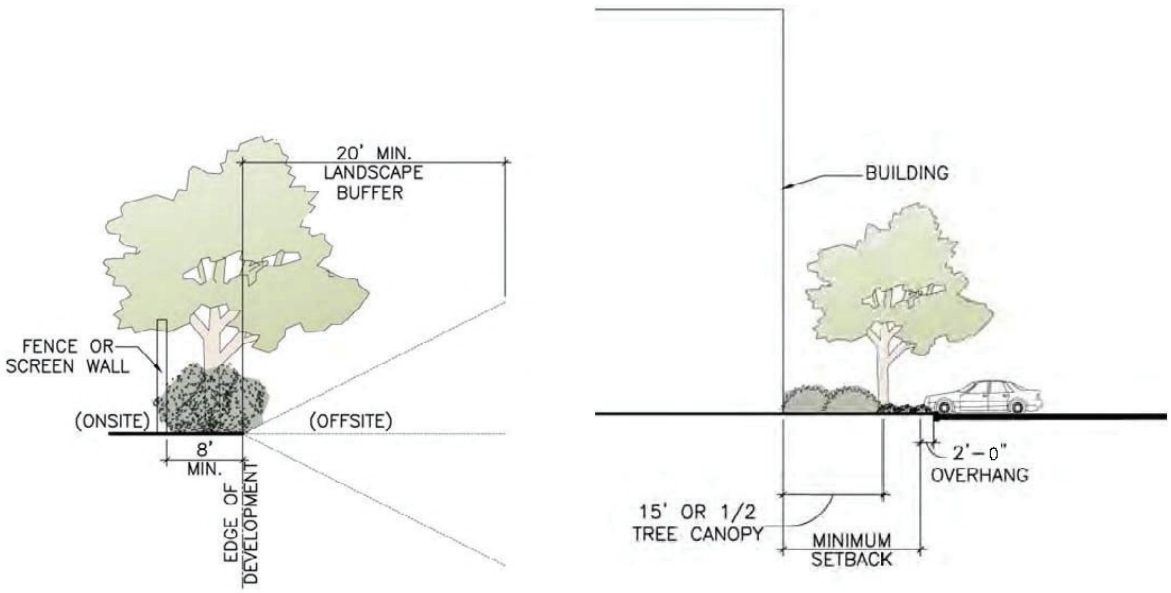
If parking or access drives are located between any building and a public street frontage, a 15-foot minimum landscaping area is required between the parking or drive aisle and the building. On other sides of the building, a 10-foot minimum landscaping area is required between the parking or drive aisle and the building, except in loading areas.

Figure 5-36 Minimum Landscape Areas

1. A minimum landscape zone of 15 feet is required along building perimeters facing a roadway frontage.
2. A minimum landscape zone of 10 feet is required along all other building perimeters except loading areas.
3. A minimum landscape zone of 5 feet is required along all internal property lines.
4. A minimum flat landscape zone of 8 feet is required next to screen walls facing the street (Figure 5-44).

Note: If perpendicular parking spaces are located adjacent to the minimum landscape zone, then a 2'-0" minimum parking overhang is required in addition to the above measurements (17' 0", 12'-0" and 7'-0" respectively).

Trees along screen walls, buildings and site perimeters should be planted at 15 feet or half (1/2) the tree canopy spread from the face of building.



Left: Landscape Setbacks on Slopes
Right: Landscape Setbacks from Face of Building.
Figure 5-37 Landscape Setbacks

5.4.6 Furnishings

5.4.7 Site Furnishings

Site furnishings such as benches, tables, trash receptacles, planters, tree grates, kiosks, drinking fountains, and other pedestrian amenities should be integral elements of the building and landscape design, and placed at building entrances, open spaces and other pedestrian areas to create a pedestrian friendly environment. Site furnishings should not block pedestrian access or visibility to plazas, open space areas and/or building entrances and should be made of durable, weather–resistant materials.

5.5 On-site Lighting

5.5.1 Objectives

Exterior lighting is to be provided to enhance the safety and security of motorists, pedestrians and cyclists.

Lighting is intended to create a nighttime character that contributes to the identity and unity of the "MVF" as a quality business and retail location.

To reinforce identity and unity, all exterior lighting is to be consistent in height, spacing, color and type of fixture throughout the building site.

5.5.2 General On-site Lighting Parameters

A consistency in design elements should be reflected in all project components, including lighting. Individual project developers may select their own light fixtures but are encouraged to use those recommended in the following guidelines:

- Onsite lighting includes lighting for parking areas, vehicular and pedestrian circulation, building exteriors, service areas, landscaping, security and special effects.
- All exterior on-site lighting must be shielded and confined within site boundaries. No direct rays or glare are permitted to shine onto public streets or adjacent lots.
- Lighting fixtures are to be of clean, appropriate design.
- Lighting must meet all requirements of the City of Moreno Valley.
- Adjustable outdoor lighting fixture mounts are prohibited. All fixtures shall be permanently installed to maintain shielding requirements (except landscape and ornamental lighting), per Municipal Code, Chapter 9.08 General Development Standards.
- Lights mounted on the roof and to the roof parapet are not permitted.
- Wall-mounted light fixtures used to illuminate vehicular parking lots are not permitted, per Municipal Code, Chapter 9.08 General Development Standards.
- Wall-mounted utility lights that cause off-site glare are not permitted. "Shoebox" lights are preferred.
- Billboard lighting pointed upward is prohibited, per Municipal Code, Chapter 9.08 General Development Standards.
- All site, landscape or building exterior lighting should be of a configuration, style and finish color that complements the architectural theme and materials established by the building architecture.
- Parking lot light fixtures and screening shall comply with Moreno Valley Municipal Code Title 9 Planning & Zoning, Chapter 9.08 General Development Standards.
- Small scale walkway or building entry lighting is encouraged for safety and aesthetic purposes. Sandblasted concrete bollards or a fixture compatible with the selected parking lot fixture may be used where deemed appropriate.

- High intensity lighting should not be substituted for site or landscape lighting or general building exterior illumination, but should be limited to rear service areas or other similar locations.
- Lighting should be designed to avoid light spillover into adjacent properties. The use of shielded light fixtures will be necessary on parcels that adjoin residential neighborhoods.
- Pole bases may be round or square. Pole bases in planting areas may be no higher than 6 inches above grade.
- Both luminaires and poles are to be white with a clear bulb, per Municipal Code, Chapter 9.08 General Development Standards.
- All luminaires shall be metal halide or L.E.D.

5.5.3 Driveways and Parking Area Lighting

- Pole height at Driveways 25' Maximum
- Pole height at Parking Area 20' Maximum

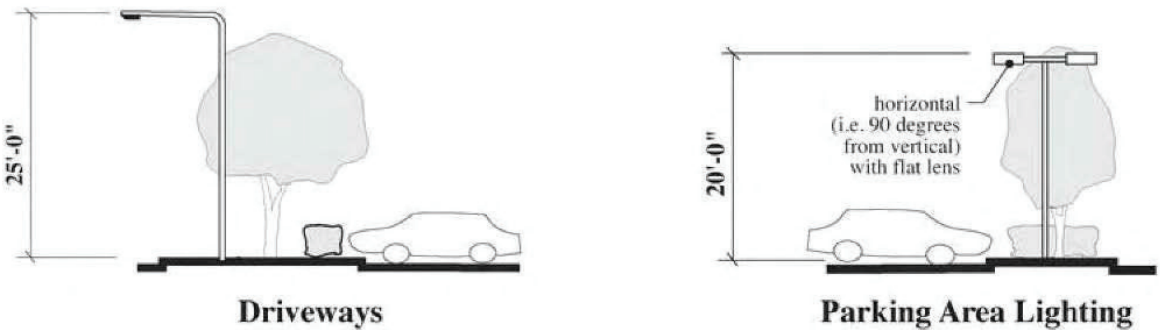


Figure 5-38 Parking Area Lighting

5.5.4 Pedestrian Circulation Lighting

- Pedestrian walkways and building entries will be illuminated to provide lighting for pedestrians and to clearly identify a secure route between parking areas and points of entry to the building.
- Walkway lighting must have cut-off fixtures mounted at a uniform height no more than eight (8) feet above the walkway.
- Building entries may be lit with soffit, bollard, step or comparable lighting.

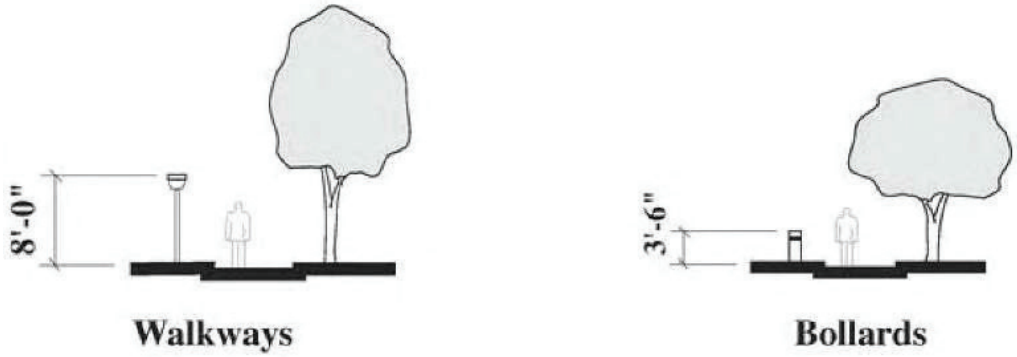


Figure 5-39 Pedestrian Area Lighting

- Step or bollard lighting shall be used to clearly illuminate level changes and handrails for stairs and ramps.
- Bollards may be used to supplement and enhance other pedestrian area lighting. Bollard height shall not exceed forty-two (42) inches.
- Courtyards, arcades and seating areas shall be illuminated to promote pedestrian use and safety. A variety of lighting may be used to create interest and special effects in coordination with the character and function of the area.
- Pedestrian lighting shall be subdued warm-white Mercury, LED, or incandescent lamps.

5.5.5 Architectural Lighting

- Architectural lighting effects are encouraged to promote nighttime identity and character.
- All exterior architectural lighting shall utilize indirect or hidden lighting sources. Acceptable lighting includes wall washing and overhead down lighting.
- Building entry areas should be lit so as to provide a safe and inviting environment.

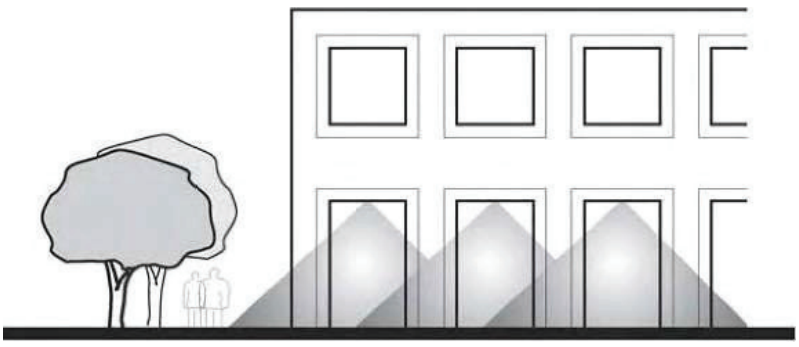


Figure 5-40 Illumination from building

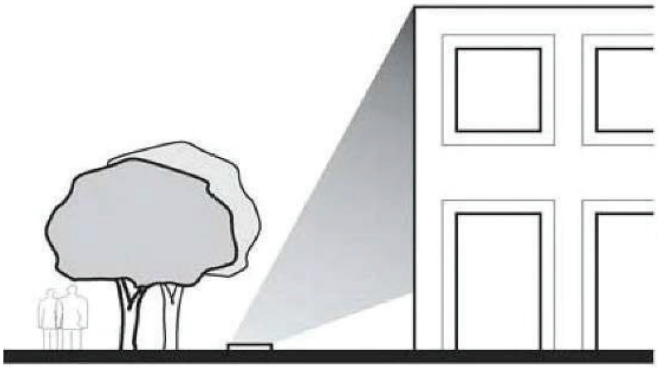


Figure 5-41 Illumination onto building

5.5.6 Service Area Lighting

Service area and security lighting must be visible only within the limits of the service area.

- Wall-mounted, security-type, service area lighting fixtures may be used only in screened service areas and only if direct light is kept within these areas. In all other areas, wall-mounted service lighting must consist of cutoff type fixtures.
- Service area and security lighting may not be substituted for pedestrian, architectural or parking area lighting.
- Freestanding fixtures shall be painted the same as parking area fixtures. Any wall-mounted fixtures should be compatible with the wall.

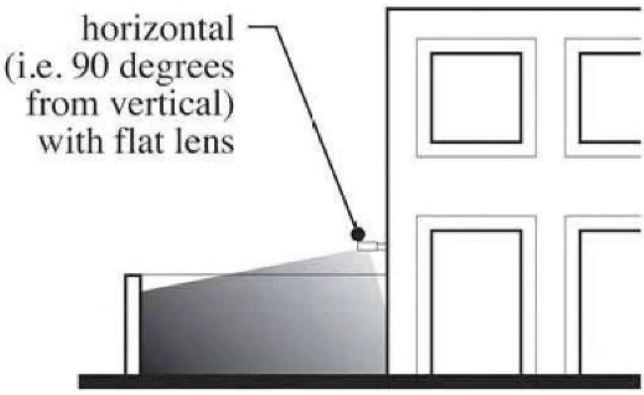


Figure 5-42 Service Area Lighting

5.5.7 Accent Lighting

Unique lighting may be used to feature architectural elements, landscaping, entries and pedestrian areas, provided it is compatible with all other lighting.
Accent lighting used in landscaping and pedestrian areas shall employ light sources such as Metal Halide, Quartz or L.E.D in order to accurately render plants, vegetation, and skin colors.

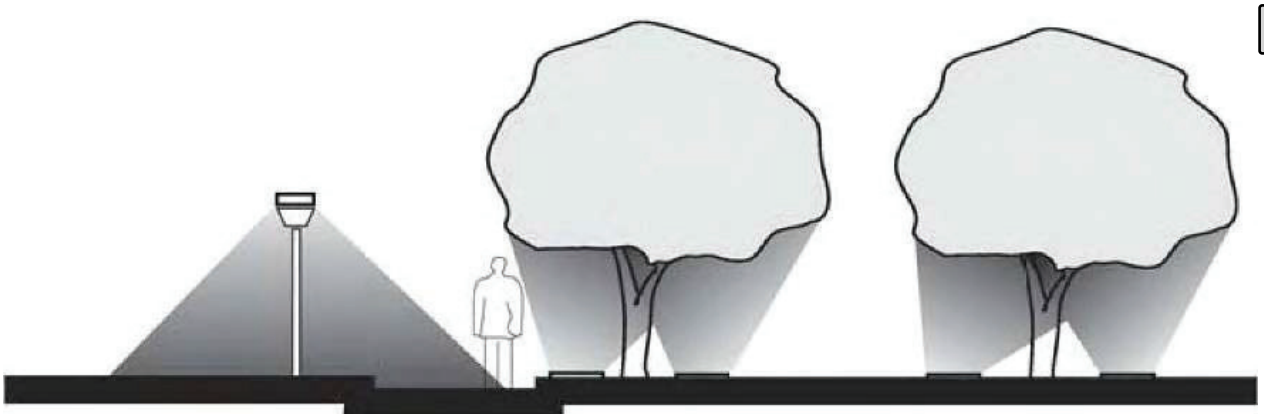


Figure 5-43 Pedestrian Path Lighting

Figure 5-44 Pedestrian Seating Area Lighting

5.6 On-site Utilities

5.6.1 Utility Connections and Meters

All utility connections and meters shall be coordinated with the development of the site and should not be exposed, except where required by the utility. Utility connections should be integrated into the building or screened by landscape.

5.6.2 Pad-Mounted Transformers and Meter Box Locations

Pad-mounted transformers and/or meter box locations shall be screened from view from surrounding properties and public rights-of-way. Utilities shall be located underground, wherever possible.

5.6.3 All Equipment shall be Internal to Buildings

All equipment shall be internal to buildings to the greatest extent possible. When unfeasible, all such equipment shall be screened and not prominently visible from public rights-of-way.

5.6.4 Utilities (including backflow preventers, detector check assemblies, transformers, etc.)

All utilities are to be installed underground. Easements for underground utilities that preclude the planting of trees may not be located where the design guidelines require the planting of trees. Any necessary above ground equipment such as detector check assemblies, backflow preventers, transformers, etc., shall be screened from view from public areas by landscaping.

Domestic water service shall be extended through development sites in an easement to EMWD. The water line and easement shall be placed in easily accessible locations, such as drive aisles. Fire service and domestic water services and meters shall tie into this line. This line may become part of a loop system and the property owner may need to tie into the public mainline to provide a loop water system to provide adequate water volumes to fire hydrants.

6.1 SUSTAINABILITY

It is the intent for this development to be a model of sustainability. While this goal is measured in many different ways and the elements of sustainability are constantly evolving, it remains the intent of the "MVF" to be on the forefront of environmentally sensitive development. The following are some ways individual projects can incorporate elements of sustainability:

- Promote public transportation as an alternate form of transportation.
- Encourage carpooling and provide charging stations for electric cars.
- Promote the riding of bicycles, through the provision of bike racks / storage.
- Implement the most current storm water management programs, including on-site water capture methodologies.
- Reduce the 'heat-island' effect by incorporating lighter paving materials where possible and light roofing materials on all structures.
- Employ adequate shielding features to ensure zero light spill offsite.
- Incorporate drought tolerant plant materials throughout.
- Minimize water use in restrooms, showers and changing rooms.
- Recommend that developers apply beyond code-required commissioning in order to ensure all mechanical and electrical equipment are operating efficiently and are not wasting energy.
- Incorporate on-site renewable energy.
- Employ a recycling program.
- Divert construction waste from landfills, per Municipal Code, Chapter 8.80 - Recycling and Diversion of Construction and Demolition Waste.
- Incorporate recycled materials where feasible.
- Ensure high indoor air quality standards.
- Incorporate low-emitting adhesives, paints, coatings, and flooring systems.
- Increase the amount of day-light into the interior spaces.
- Increase the amount of interior space with exterior views.
- Incorporate the best available technologies or best management practices where feasible.
- Utilize onsite electric power sources as much as possible to minimize the use of portable, mobile power generators.
- Apply water conservation measures, as discussed in Section 5.4.2 - Water Conservation Measures.

7.1 SIGNAGE

Refer to **Appendix 1 – Signage Package** reflecting the general design approach and objective for reference. All signage in this Specific Plan shall conform to an approved Sign Program on file with the City of Moreno Valley.

7.2 Entry Monument Signage

One type of monument sign will be incorporated into all of the entry treatments. The design criteria for this sign are as follows:

- The maximum height of the front wall panel will be maximum 7 feet, with each end panel sloping to a minimum height of 4 feet. The length of the entire wall will be maximum 30 feet.
- The front panel will display the project's name and logo. Horizontal reveals will be featured as accents.
- Sign lettering will be a contrasting color which complements the natural tones of the stone and signage elsewhere in the development.
- The project's logo will be a raised form on the finished surface.

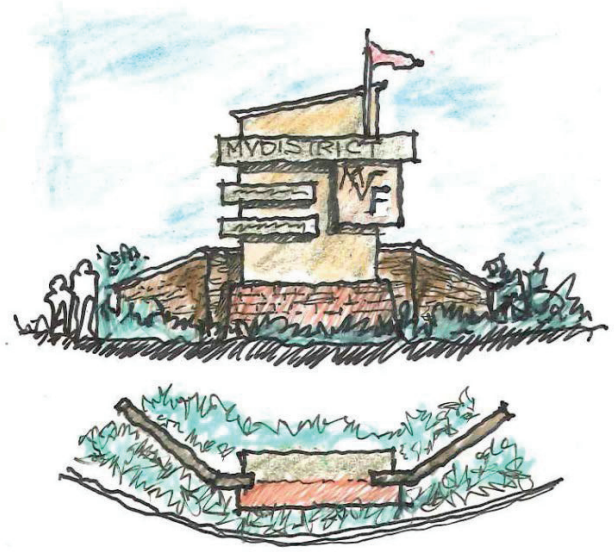


Figure 7-1 Entry Monument Signage

7.3 Temporary Marketing Signage

Temporary marketing signage will utilize durable, yet inexpensive materials and construction techniques.

The signs will be built according to the following guidelines:

- Temporary signs shall not be located in public rights-of-way, in streetside landscape areas or in required parking spaces and shall, in all ways, comply with appropriate provisions of the city's sign ordinance, per Municipal Code, Chapter 9.12 – Sign Regulations.
- The temporary marketing sign(s) will be 8 inches deep with a maximum height of 16 feet 6 inches and a maximum width of 9 feet.
- Signs will be constructed of wood with plywood sign faces, set on a wooden base. The entire sign will be painted white.

- All temporary signs, including "coming soon" signs shall be regulated by the city's sign ordinance.

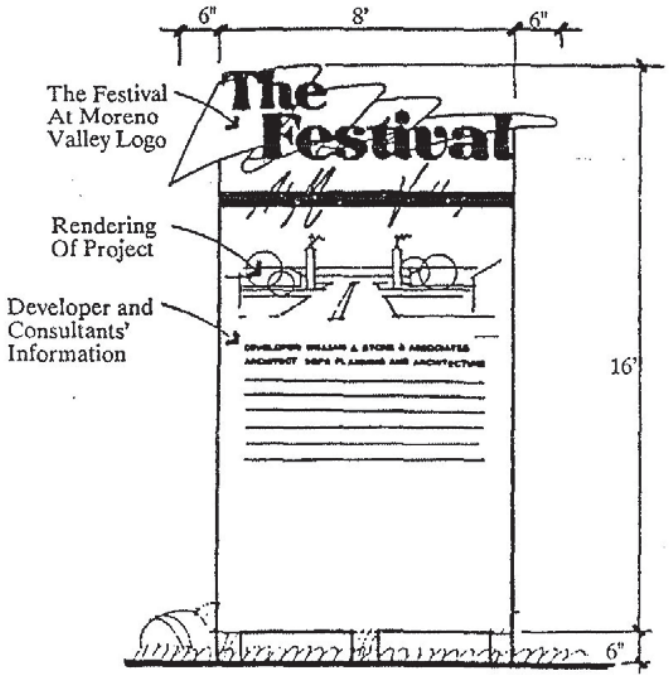


Figure 7-2 Temporary Signage

7.4 Regulatory Signage

All regulatory signage (traffic control, public safety, etc.) shall comply with Municipal Code standards, Chapter 9.12.

7.5 State Highway Signage

There will be two (2) State Highway Monument Signs identifying the "MVF" and visible from both eastbound and westbound traffic on the 60 State Highway. The signs should be located within six hundred sixty (660) feet from a State Highway right-of-way and will not exceed forty-five (45) feet in height and one hundred fifty (150) feet in sign area, per Municipal Code, Chapter 9.12 – Sign Regulations. The design criteria for these signs shall be set forth in an exhibit to this document or along with an application for permits from the City in the future.

8.1 PROJECT PHASING

8.2 Infrastructure Phasing

Each project within the "MVF" will be supported by the requisite infrastructure as needed, subject to federal, state and local codes.

Each plot plan will include proposals for specific infrastructure improvements needed to support each proposed building.

These improvements shall be consistent with the overall infrastructure plans serving the "MVF."

9.1 PROPERTY MAINTENANCE

9.2 On-site Improvements

On-site improvements shall be maintained by the property owner or tenant, pursuant to private contractual terms.

9.3 Common Area Improvements

Major slopes, landscape areas, community entries, community signage, etc., shall be maintained by an owner assigned design review agent or through a Business Improvement District (BID).

9.4 Streets

Public streets (curb-to-curb), public sidewalks shall be maintained by the City of Moreno Valley.

10.1 IMPLEMENTATION

10.2 Purpose and Intent

This section contains the procedures for the processing of discretionary development applications to implement the terms of the "MVF" Specific Plan. The City will review all development within the project to ensure compliance with the provisions of the Specific Plan.

10.3 Approvals required

All development within the "MVF" is subject to the approval of a Plot Plan or a Conditional Use Permit, in conformance with these procedures. Modifications to the development standards contained in the Specific Plan may be requested by any property owner and may be approved by the City through the variance processes described in Section 11.3.3 herein.

10.4 Development Review Process

10.4.1 Subdivisions

All proposed subdivisions within the "MVF" shall be processed in accordance with the provisions of the State of California Subdivision Map Act and the Municipal Code.

10.4.2 Plot Plans

- Unless a Conditional Use Permit is required, a development proposal within the "MVF" shall be subject to the approval of a Plot Plan as described herein. Property and building maintenance activities such as painting, site or building repairs, parking lot resurfacing/restriping, and landscape maintenance and repair, etc. are exempt from these regulations.
- The Plot Plan process is intended to ensure that all development proposals comply with all applicable standards and guidelines contained in this Specific Plan, and are not detrimental to public health, safety or welfare.
- Plot Plan applications shall be submitted to the City in conformance with the procedures contained in the Municipal Code.
- A Plot Plan shall be approved within 90 days if all of the following findings are made:
  - The proposed project is consistent with the goals, objectives and policies of the General Plan,
  - The proposed project complies with this Specific Plan and other applicable regulations, and
  - The proposed project will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity;
  - The project conforms with any applicable provisions of any city redevelopment plan;
  - The location, design and operation of the proposed project will be compatible with existing and planned land uses in the vicinity.
  - Public Notice of plot plan public hearing and the proposed environmental determination shall be provided. Noticing shall be in

compliance with the Municipal Code, Chapter 9.02 – Permits and Approvals.

10.4.3 Variances

Alternatives to development standards and regulations contained herein may be approved through the following variance procedures. Variance applications may be processed along with Plot Plan applications, or as separate applications.

10.3.3.1 Administrative Variances

- The purpose of an administrative variance is to provide an administrative procedure for adjustments to certain regulations in this Specific Plan in order to prevent hardships that might result from a strict or literal interpretation and enforcement of those regulations.
- The standards and procedures for the submittal, review and approval of an Administrative Variance shall be as contained in Section 9.02.090 of the Municipal Code.

10.3.3.2 Other Variances

- All other variance applications shall be processed in accordance with Section 9.02.100 of the Municipal Code.

10.3.4 Appeals

- Any interested party may appeal any administrative decision to the Planning Commission subject to the provisions of Section 9.02.240 of the Municipal Code.
- Any interested party may appeal any decision of the Planning Commission to the City Council subject to the provisions of Section 9.02.240 of the Municipal Code.
- The decision of the City Council is final.

10.4 Other Uses

All uses established within the "MVF" shall be consistent with the General Plan and this Specific Plan. The Community Development Director shall be responsible for all consistency determinations pursuant to Section 9.01 of the Municipal Code.

10.5 Additional Items

Items not addressed in the Specific Plan shall be subject to the regulations of the Municipal Code.

10.6 Specific Plan Amendments

Any proposal to amend this Specific Plan shall be processed in the same manner as the original approval subject to the provisions of Chapter 9.13 of the Municipal Code.

Overhead power lines 12kV/115 kV: Power lines that distribute or transmit electrical power into and through the "MVF" project. All 12 kV distribution lines will be installed underground, while 115 kV transmission lines must remain aboveground due to the heat generated by electrical energy flows in the lines.

Accessory Structure: A separate building, the use of which is incidental to that of the main building on the same lot or premises, and which is used exclusively by the occupant of the main building.

Ancillary Structures: See accessory structure.

Bio-detention Facilities: Soil and plant-based filtration devices that remove pollutants through a variety of physical, biological, and chemical treatment processes. These facilities normally consist of a grass buffer strip, sand bed, ponding area, organic layer of mulch layer, planting soil, and plants.

Class II bikeways: A striped lane located along the right shoulder of a roadway designated for use by bicyclists.

CNG/LNG: Abbreviation for Compressed Natural Gas (CNG) and Liquefied Natura Gas (LNG).

Collector Roads: A street which is intended to serve intensive residential land use, multiple-family dwellings, or to convey traffic through a subdivision to roads of equal capacity or greater. It may also serve as a cul-de-sac in industrial or commercial use areas but shall not exceed six hundred sixty (660) feet in length when so used. Minimum right-of-way width shall be sixty-six (66) feet, per Municipal Code, Chapter 9.15.

Cut-off fixtures: A lighting fixture designed to eliminate light rays from escaping above a horizontal plane.

Detention basins: A drainage feature that has been designed to allow large flows of water to enter but limits the outflow by having a small opening at the lowest point of the outlet structure.

Facades: An exterior side of a building, usually, but not always, the front.

Fenestration: The design of openings in a building or wall, generally including windows, doors, louvers, vents, openings, skylights, storefronts, etc.

Floor area ratio: A measure of the intensity of development of a particular site. The ratio is calculated by dividing the building area by the parcel area, using the same unit of measure (acres, square feet, etc.)

Heavy truck: A truck weighing 26,001 and 33,000 pounds unloaded.

Impervious paved surface: Artificial surfaces such as pavement (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone. Also includes building rooftops and other structures that prevent water from penetrating into the ground surface.

Infiltration Basin: A shallow impoundment that is designed to infiltrate storm water. Infiltration basins use the natural filtering ability of the soil to remove pollutants in storm water runoff.

Jobs/housing balance: The ratio between the number of housing units and the number of full-time jobs in an identified geographic area. The ratio is calculated by dividing the number of full-time jobs by the number of housing units.

Luminaire: A light fixture generally affixed to a pole used in exterior areas to illuminate streets, driveways, walkways, and parking areas.

Medium trucks: A Truck weighing 19,500 and 26,000 pounds or more unloaded.

Multi-Use Trails: A planned city-wide system of trails that accommodate pedestrian, equestrian and bicycle users. See the Parks, Recreation and Open Space Element of the City's General Plan.

Native landscape: The use of plant materials found to grow naturally in an area that are adapted to a particular environment and are able to live on natural rainfall, thereby reducing the need for mechanical irrigation.

Off-project: Refers to areas outside of the "MVF." Generally applies to infrastructure improvements needed to implement the "MVF" project that will extend beyond the "MVF" boundary.

Off-site: Refers to those portions of the property that are not within building sites, including common areas, open space, public areas, streetscapes, etc.

On-site: Refers to individual building sites within the "MVF."

Specific Plan: Refers to the "MVF" Specific Plan which covers 2,610 acres of land in eastern Moreno Valley, and provides the land use regulations for the development of a master planned development.

Subdivision Map Act: The body of law (Government Code Section 66410-66499.58) that regulates the subdivision of land in California.

Truck Routes/Truck Route Ordinance: Streets that have been officially designated by the City for use by vehicles with a gross vehicle weight of three tons or more. See Chapter 12.36 of the Municipal Code.

MVF: The project name for the development to be established under the "MVF" Specific Plan.

Sergio has several comments on signage. Need to get back to the signage company.

FESTIVAL PLAZA

SIGN SIGNAGE TABLE AND CONTENTS

24138 HEMLOCK AVE. MORENO VALLEY CA.

SIGNAGE TYPE	PAGE DESCRIPTION	QUANTITY OF SIGNS
SIGNAGE PAGE INDEX	DESCRIPTION OF SIGNAGE CONTENTS	
SIGNAGE LOCATION	SITE LOCATION PLAN/SIGN LOCATIONS	
SIGN TYPE A	FREEWAY PYLON	2
SIGN TYPE B	STREET PYLON	1
SIGN TYPE C	ENTRY MONUMENT	5
SIGN TYPE D	TENANT MONUMENT	5

PROJECT TITLE
FESTIVAL PLAZA
24138 HEMLOCK AVE.
MORENO VALLEY, CA.
ZIP

JOB NUMBER 50244
SALES CLAUDE ELLENA
DRAWN BY G. RICHARDSON DATE 11/1/17
SCALE AS NOTED
FOLDER S:\MORENO\FESTIVAL PLAZA\50244\50244
FILE 50244.cdr
DESIGN# 001

REVISIONS

DATE	BY	DATE	BY
ORIGINAL	GR		

APPROVAL

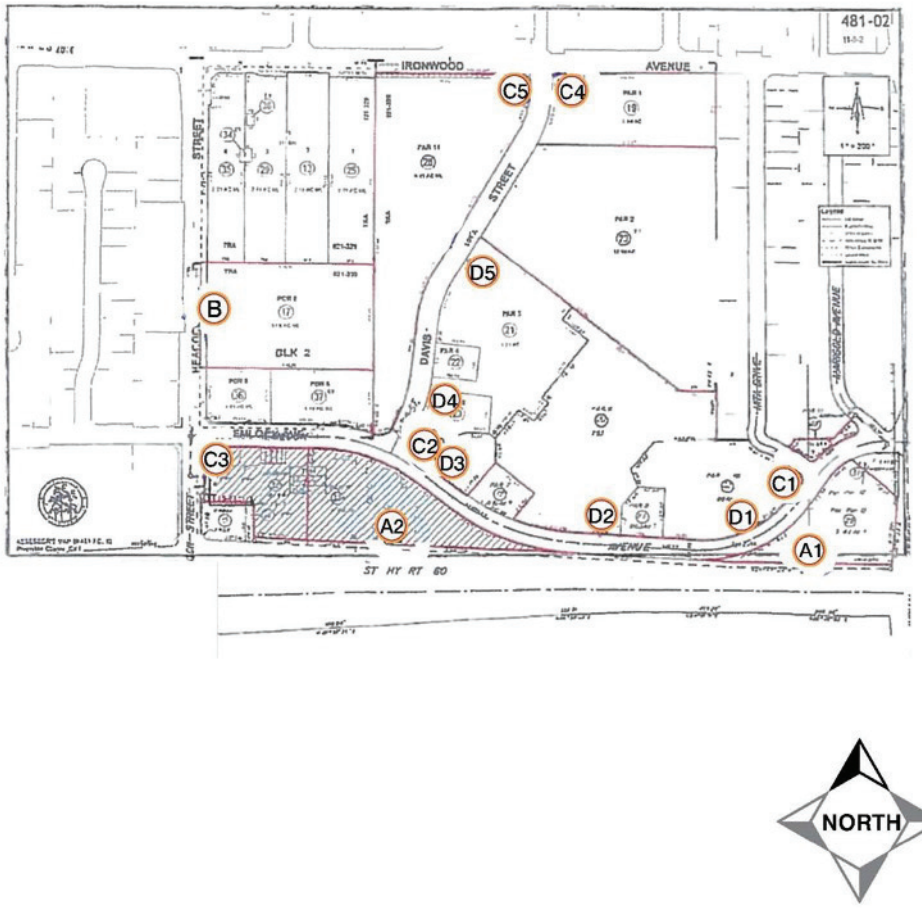
This proof drawing is for customer review and approval before fabrication begins. Encore Image will not be responsible for problems or discrepancies that could have been reasonably prevented by the proper review of this document.

- The customer shall provide accessibility to remote transformers and/or ballasts for installation, final inspection and service.
- Dedicated sign circuits with a ground wire to be provided within 6' of the display(s) by the customer.
- Sketch may vary from specified colors. Photos are for visual reference only, size and placement of signs may vary.

SIGNATURE DATE
PRINTED NAME TITLE

All electrical signs shall comply with National Electrical Code (Article 600) and manufactured according to Underwriters Laboratories U.L. 48 standard and appropriately labeled.

Encore IMAGE
303 West Main Street
P.O. Box 9297
Ontario, California 91762
800-791-1187
Fax 909-988-6376
STATE LICENSE #947727
www.encoreimage.com



SIGN	SCOPE OF WORK / DESCRIPTION
A	MANUFACTURE AND INSTALL (1) SET OF INTERNALLY ILLUMINATED CHANNEL LETTERS

PROJECT TITLE

FESTIVAL PLAZA
24136 HEMLOCK AVE.
MORENO VALLEY, CA.
ZIP

JOB NUMBER 50244

SALES: CLAUDE ELLENA
DRAWN BY: G.RICHARDSON DATE: 11/1/17
SCALE: AS NOTED
FOLDER: S/SKETCHES/FESTIVAL PLAZA/50244/50244
FILE: 50244-CDR
DESIGN #: 002

REVISIONS

DATE	BY	DATE	BY
ORIGINAL	GK		

APPROVAL

This proof drawing is for customer review and approval before fabrication begins. Encore Image will not be responsible for problems or discrepancies that could have been reasonably prevented by the proper review of this document.

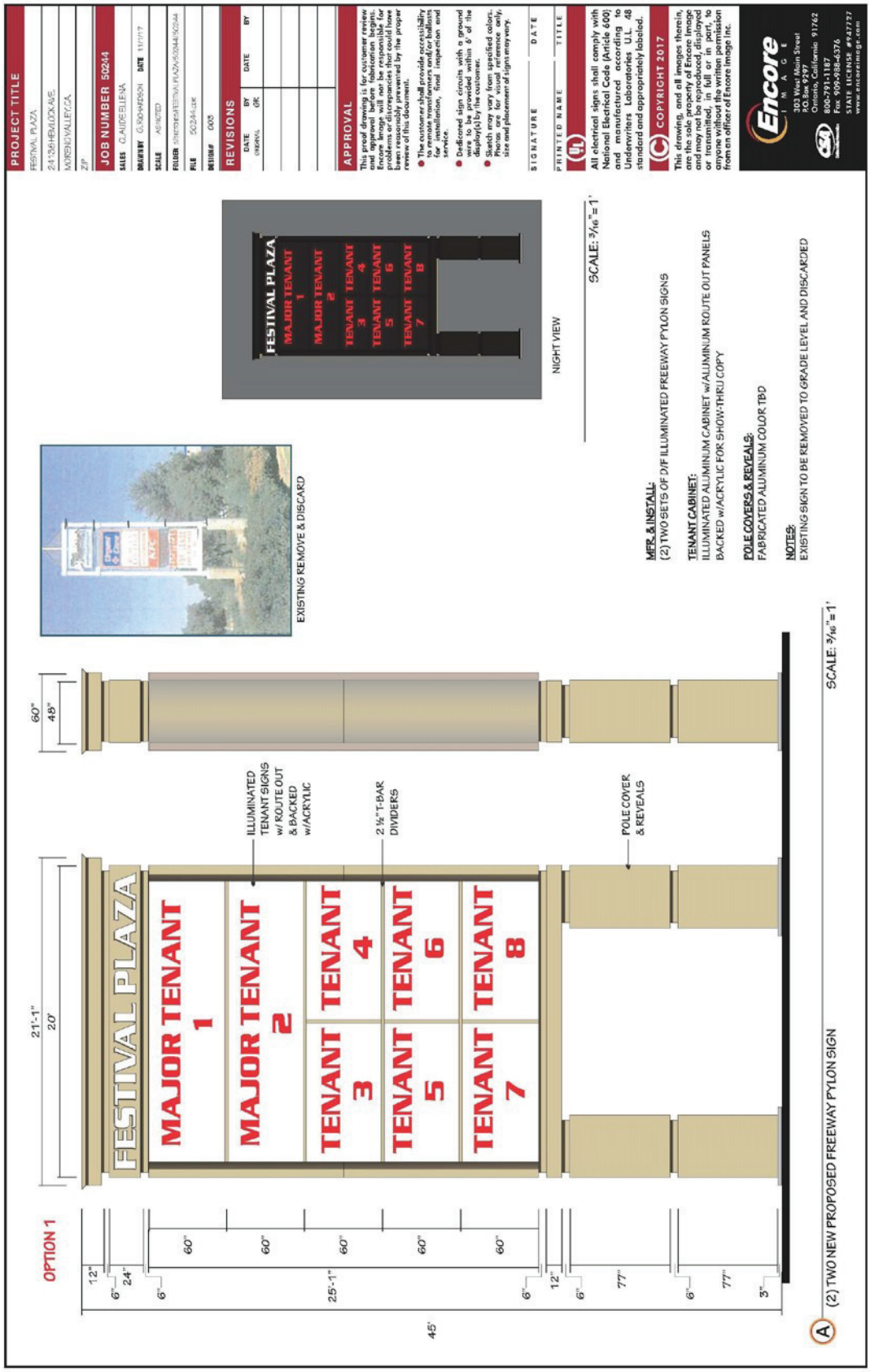
- The customer shall provide accessibility to remote transformers and/or ballasts for installation, final inspection and service.
- Dedicated sign circuits with a ground wire to be provided within 6' of the display(s) by the customer.
- Sketch may vary from specified colors. Photos are for visual reference only, size and placement of signs may vary.

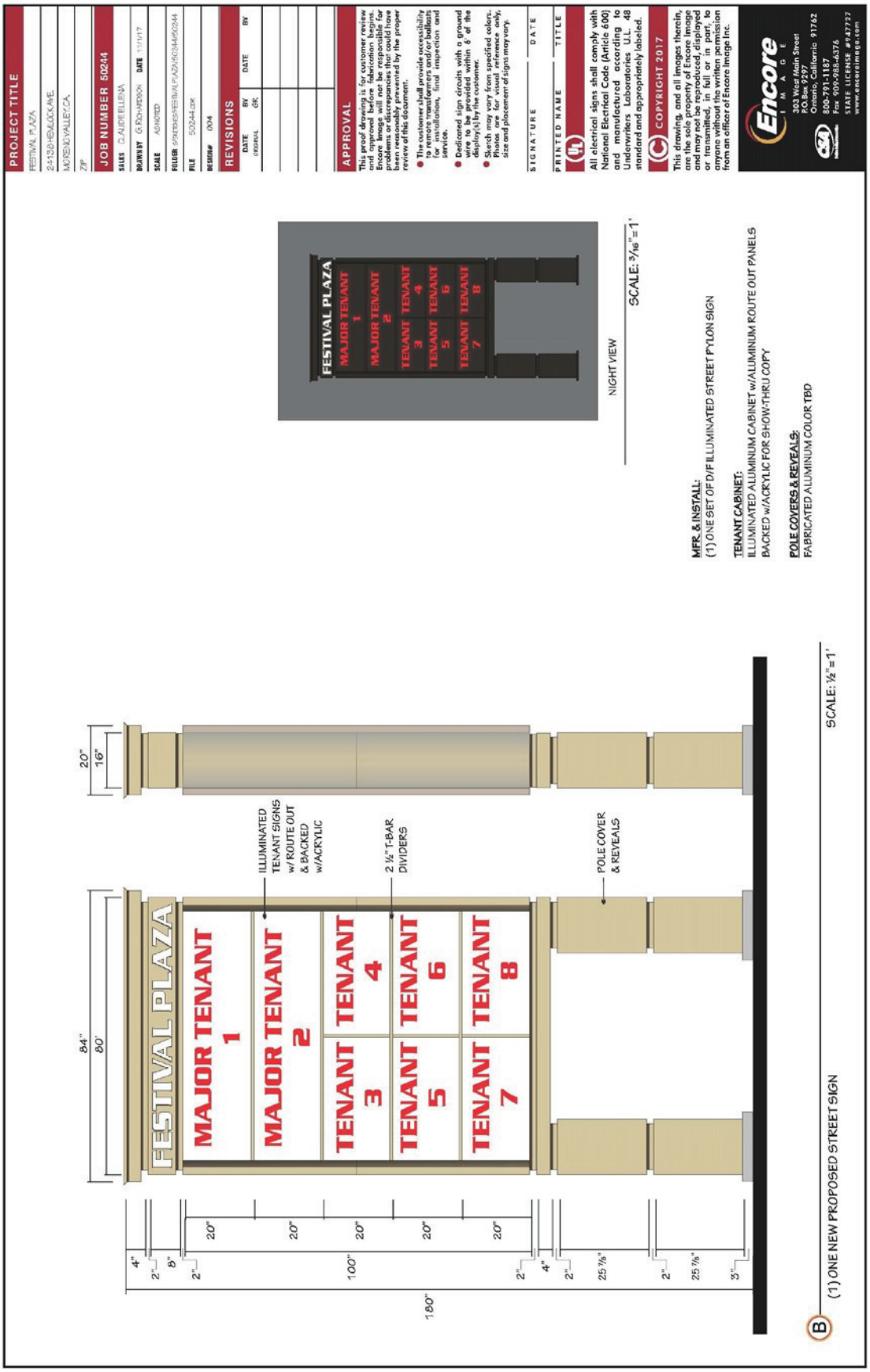
SIGNATURE DATE

PRINTED NAME TITLE

All electrical signs shall comply with National Electrical Code (Article 600) and manufactured according to Underwriters Laboratories U.L. 48 standard and appropriately labeled.

Encore IMAGE
303 West Main Street
P.O.Box 9297
Ontario, California 91762
800-791-1187
Fax 909-988-6376
STATE LICENSE #947727
www.encoreimage.com






OPTION 1
190"
180"
34"
24"
8 ½"
3"
30"
77"
3"
30"
3"
FESTIVAL PLAZA
(5) FIVE NEW PROPOSED ENTRY MONUMENT SIGN
SCALE: 1/2"= 1'-0"
MFR. & INSTALL:
(5) FIVE SETS OF D/F ILLUMINATED ENTRY MONUMENT SIGNS
CABINET:
ILLUMINATED ALUMINUM CABINET w/ALUMINUM ROUTE OUT PANELS
BACKED w/ACRYLIC FOR SHOW-THRU COPY
POLE COVERS & REVEALS:
FABRICATED ALUMINUM COLOR TBD
FESTIVAL PLAZA
NIGHT VIEW
SCALE: NTS
PROJECT TITLE
FESTIVAL PLAZA
24138 HEMLOCK AVE.
MORENO VALLEY, CA.
ZIP
JOB NUMBER 50244
SALES CLAUDE ELLENA
DRAWN BY G. RICHARDSON DATE 11/13/17
SCALE AS NOTED
FOLDER S:\SKETCHES\FESTIVAL PLAZA\50244\50244
FILE 50244.cdr
DESIGN# 005
REVISIONS
DATE BY DATE BY
ORIGINAL GR.
APPROVAL
This proof drawing is for customer review and approval before fabrication begins. Encore Image will not be responsible for problems or discrepancies that could have been reasonably prevented by the proper review of this document.
The customer shall provide accessibility to remote transformers and/or ballasts for installation, final inspection and service.
Dedicated sign circuits with a ground wire to be provided within 6' of the display(s) by the customer.
Sketch may vary from specified colors. Photos are for visual reference only, size and placement of signs may vary.
SIGNATURE DATE
PRINTED NAME TITLE
All electrical signs shall comply with National Electrical Code (Article 600) and manufactured according to Underwriters Laboratories U.L. 48 standard and appropriately labeled.
COPYRIGHT 2017
This drawing, and all images therein, are the sole property of Encore Image and may not be reproduced, displayed or transmitted, in full or in part, to anyone without the written permission from an officer of Encore Image Inc.
Encore IMAGE
303 West Main Street
P.O. Box 9297
Ontario, California 91762
800-791-1187
Fax 909-988-6376
STATE LICENSE #947727
www.encoreimage.com

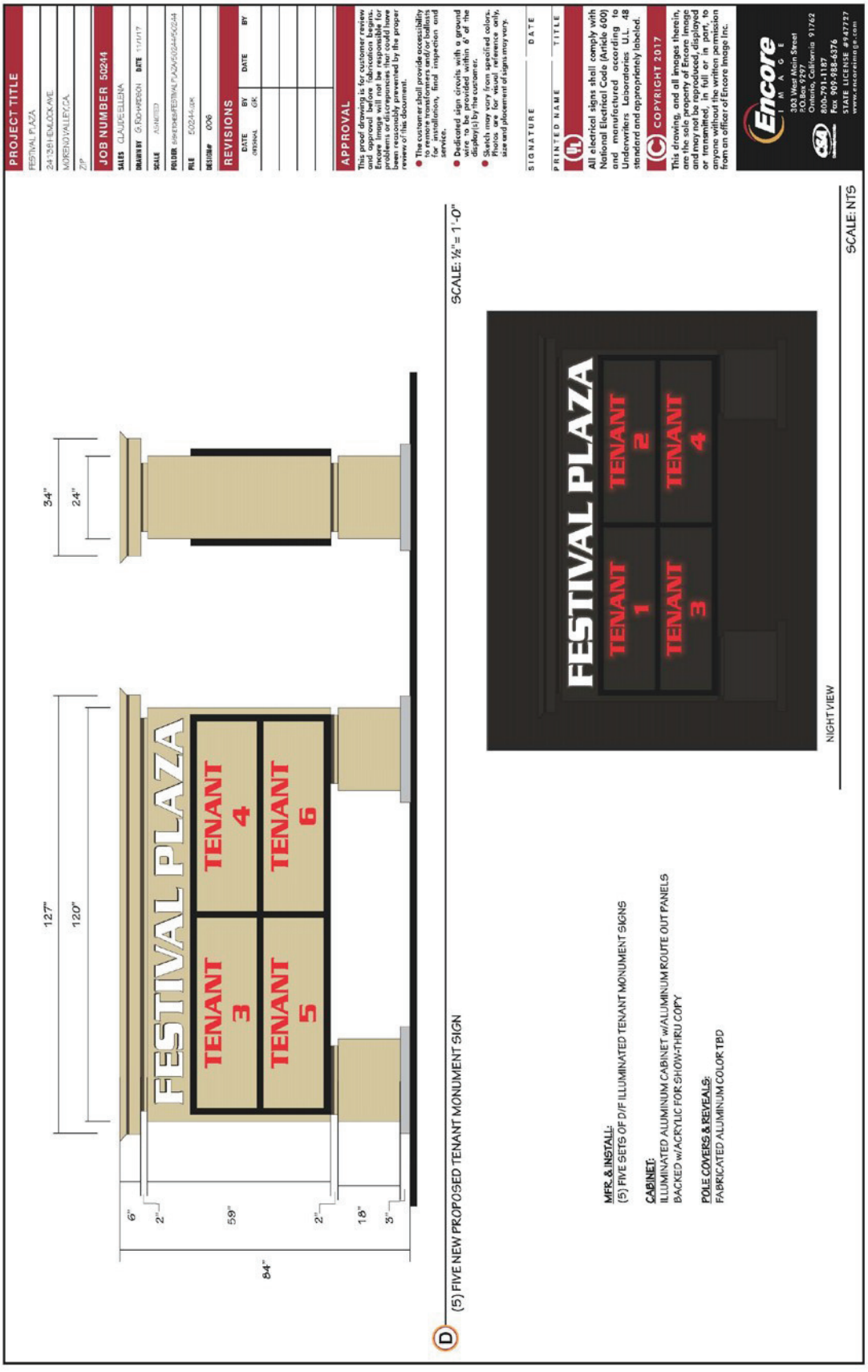


Figure 12-1 Proposed Signage Package

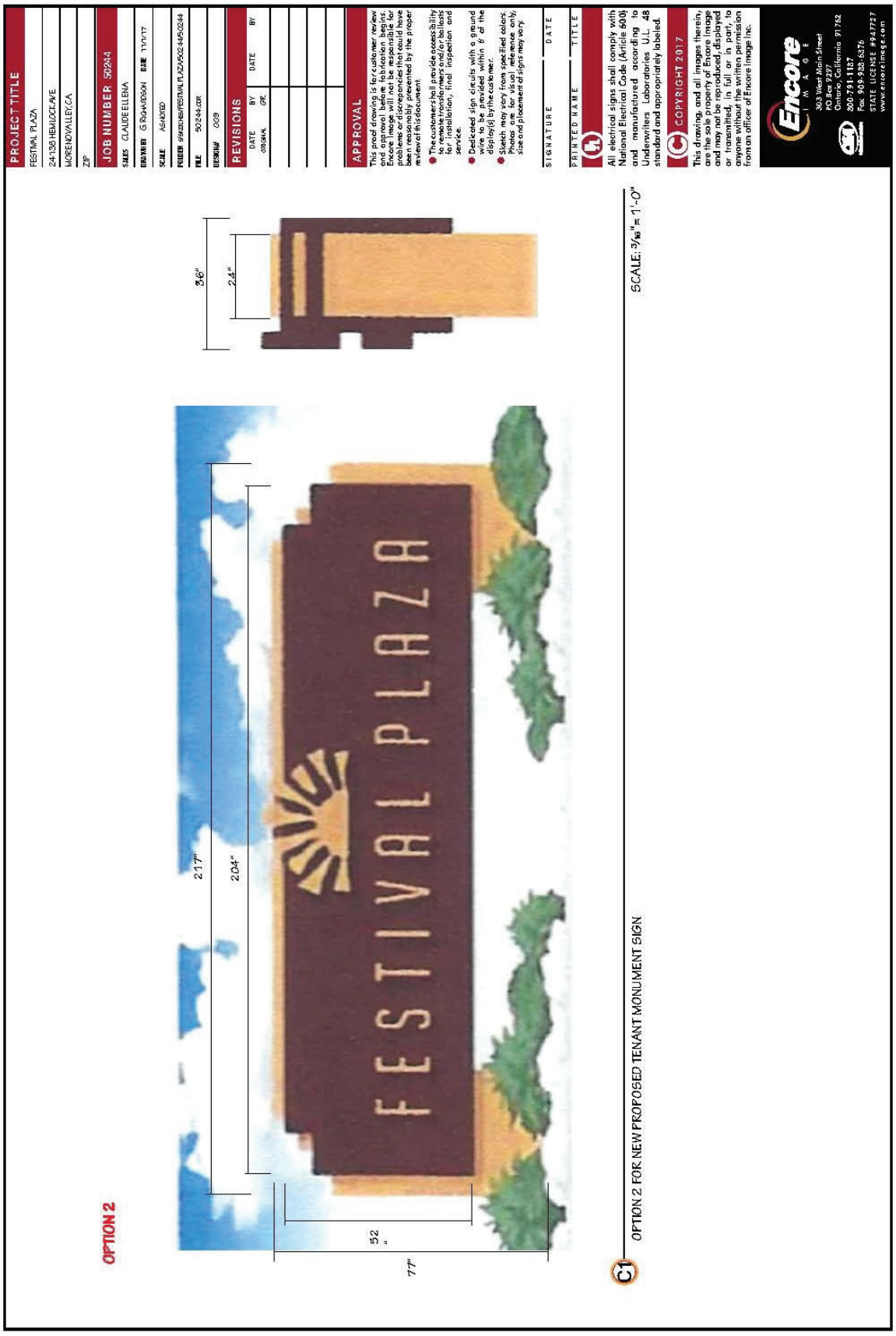


Figure 12-2 Monument Sign Example

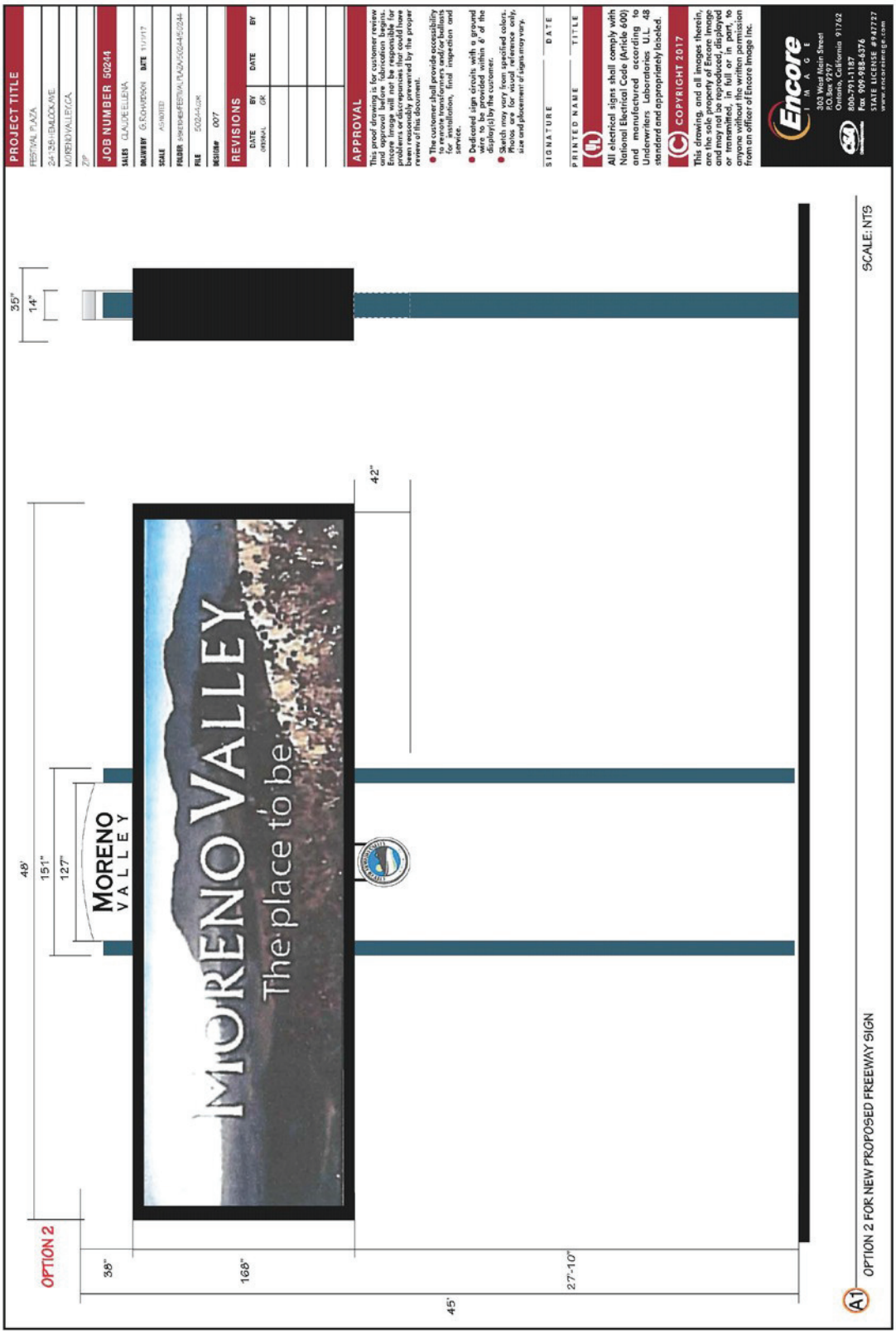


Figure 12-3 Billboard Sign Example

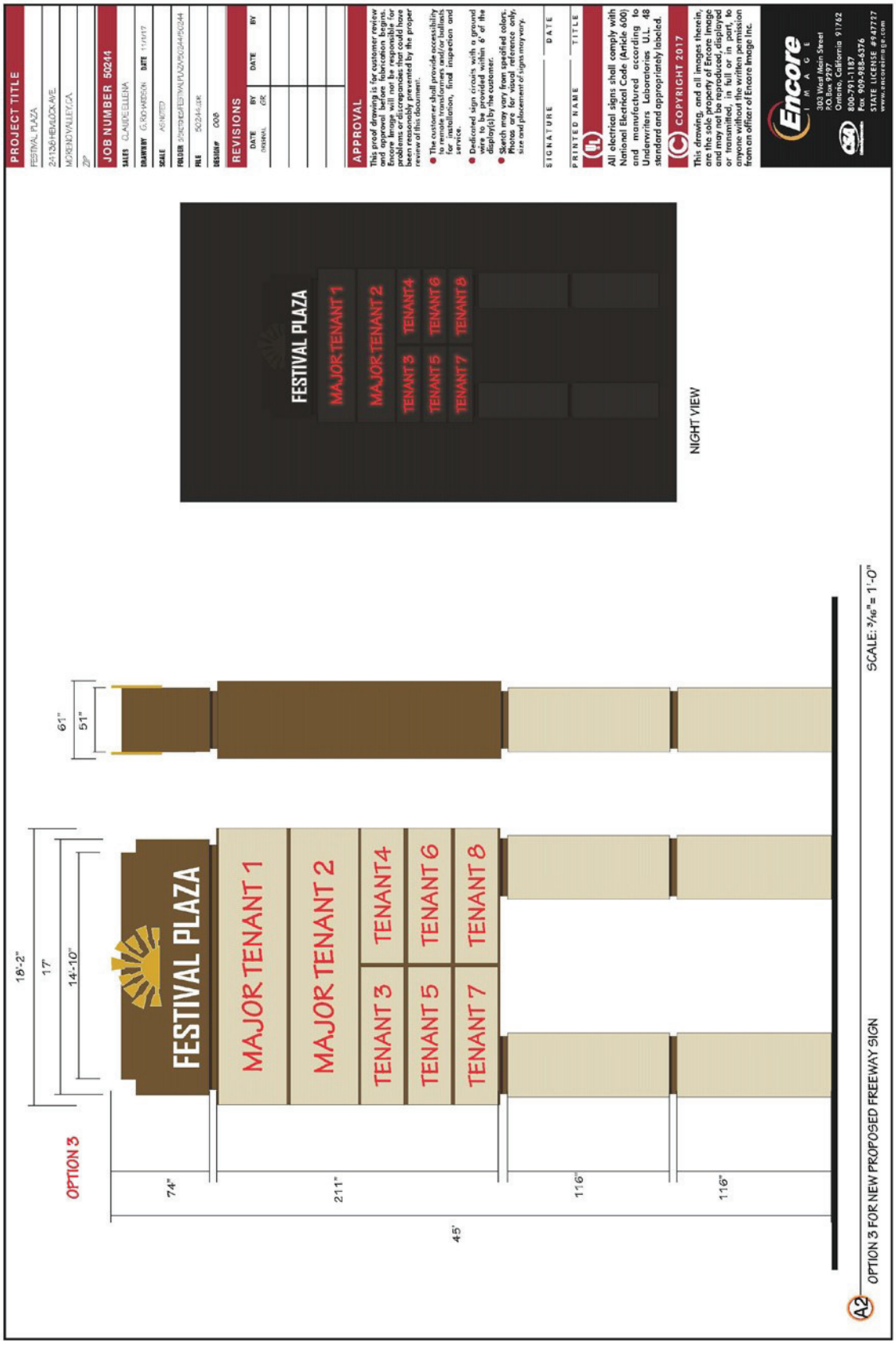


Figure 12-4 Freeway Sign Example

Moreno Valley Festival

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	325.00	1000sqft	7.46	325,000.00	0
Industrial Park	348.00	1000sqft	7.99	348,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction times estimated.

Vehicle Trips - The trip generation rates were adjusted to provide consistency between the trips identified in the Traffic Study. The development contemplated under the Specific Plan is anticipated to serve the local market. As a result, a distance of five miles was selected for home-work, customer-work, and commercial non-work trip lengths.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Mobile Commute Mitigation -

Land Use Change -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	20.00	109.00
tblConstructionPhase	NumDays	300.00	304.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	30.00	66.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	10.00	66.00
tblConstructionPhase	PhaseEndDate	1/4/2018	8/31/2020
tblConstructionPhase	PhaseEndDate	1/4/2018	12/31/2019
tblConstructionPhase	PhaseEndDate	1/4/2018	4/30/2018
tblConstructionPhase	PhaseEndDate	1/4/2018	10/31/2018
tblConstructionPhase	PhaseEndDate	1/4/2018	3/31/2020
tblConstructionPhase	PhaseEndDate	1/4/2018	7/31/2018
tblConstructionPhase	PhaseStartDate	1/5/2018	4/1/2020

tblConstructionPhase	PhaseStartDate	1/5/2018	11/1/2018
tblConstructionPhase	PhaseStartDate	1/5/2018	4/1/2018
tblConstructionPhase	PhaseStartDate	1/5/2018	8/1/2018
tblConstructionPhase	PhaseStartDate	1/5/2018	1/1/2020
tblConstructionPhase	PhaseStartDate	1/5/2018	5/1/2018
tblGrading	AcresOfGrading	165.00	75.00
tblProjectCharacteristics	OperationalYear	2018	2021
tblVehicleTrips	CC_TL	8.40	5.00
tblVehicleTrips	CC_TL	8.40	5.00
tblVehicleTrips	CNW_TL	6.90	5.00
tblVehicleTrips	CNW_TL	6.90	5.00
tblVehicleTrips	CW_TL	16.60	5.00
tblVehicleTrips	CW_TL	16.60	5.00
tblVehicleTrips	DV_TP	35.00	33.00
tblVehicleTrips	PB_TP	11.00	34.00
tblVehicleTrips	PR_TP	54.00	33.00
tblVehicleTrips	ST_TR	2.49	10.00
tblVehicleTrips	ST_TR	49.97	12.00
tblVehicleTrips	SU_TR	0.73	0.00
tblVehicleTrips	SU_TR	25.24	16.00
tblVehicleTrips	WD_TR	6.83	12.44
tblVehicleTrips	WD_TR	42.70	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	5.1979	59.5991	36.0929	0.0863	18.2675	2.6355	20.8460	9.9840	2.4247	12.3563	0.0000	8,734.5527	8,734.5527	1.9523	0.0000	8,758.4198
2019	4.0096	34.5174	31.4399	0.0851	3.4984	1.3950	4.8934	0.9438	1.3125	2.2563	0.0000	8,582.4695	8,582.4695	0.9247	0.0000	8,605.5873
2020	57.7043	14.1112	15.2653	0.0245	0.5589	0.7541	0.9217	0.1482	0.6937	0.7382	0.0000	2,379.3961	2,379.3961	0.7190	0.0000	2,397.3701
Maximum	**57.7043**	**59.5991**	**36.0929**	**0.0863**	**18.2675**	**2.6355**	**20.8460**	**9.9840**	**2.4247**	**12.3563**	**0.0000**	**8,734.5527**	**8,734.5527**	**1.9523**	**0.0000**	**8,758.4198**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	5.1979	59.5991	36.0929	0.0863	7.2470	2.6355	9.8256	3.9263	2.4247	6.2986	0.0000	8,734.5527	8,734.5527	1.9523	0.0000	8,758.4198
2019	4.0096	34.5174	31.4399	0.0851	3.4984	1.3950	4.8934	0.9438	1.3125	2.2563	0.0000	8,582.4695	8,582.4695	0.9247	0.0000	8,605.5873
2020	57.7043	14.1112	15.2653	0.0245	0.5589	0.7541	0.9217	0.1482	0.6937	0.7382	0.0000	2,379.3961	2,379.3961	0.7190	0.0000	2,397.3701
Maximum	**57.7043**	**59.5991**	**36.0929**	**0.0863**	**7.2470**	**2.6355**	**9.8256**	**3.9263**	**2.4247**	**6.2986**	**0.0000**	**8,734.5527**	**8,734.5527**	**1.9523**	**0.0000**	**8,758.4198**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	49.36	0.00	41.34	54.69	0.00	39.46	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.0411	6.3000e-004	0.0690	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		0.1473	0.1473	3.9000e-004		0.1571
Energy	0.0573	0.5209	0.4376	3.1300e-003		0.0396	0.0396		0.0396	0.0396		625.0669	625.0669	0.0120	0.0115	628.7813
Mobile	12.7168	55.1859	101.5237	0.3152	22.4752	0.2580	22.7331	6.0136	0.2406	6.2543		32,143.5001	32,143.5001	1.8807		32,190.5184
Total	**27.8151**	**55.7074**	**102.0303**	**0.3183**	**22.4752**	**0.2978**	**22.7730**	**6.0136**	**0.2805**	**6.2941**		**32,768.7143**	**32,768.7143**	**1.8931**	**0.0115**	**32,819.4568**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.0411	6.3000e-004	0.0690	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		0.1473	0.1473	3.9000e-004		0.1571
Energy	0.0573	0.5209	0.4376	3.1300e-003		0.0396	0.0396		0.0396	0.0396		625.0669	625.0669	0.0120	0.0115	628.7813
Mobile	12.4276	53.2130	93.6860	0.2839	19.8231	0.2343	20.0574	5.3040	0.2185	5.5226		28,964.1741	28,964.1741	1.7494		29,007.9092
Total	**27.5259**	**53.7345**	**94.1925**	**0.2870**	**19.8231**	**0.2742**	**20.0973**	**5.3040**	**0.2584**	**5.5624**		**29,589.3883**	**29,589.3883**	**1.7618**	**0.0115**	**29,636.8476**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	1.04	3.54	7.68	9.84	11.80	7.94	11.75	11.80	7.88	11.63	0.00	9.70	9.70	6.94	0.00	9.70

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2018	4/30/2018	5	21	
2	Site Preparation	Site Preparation	5/1/2018	7/31/2018	5	66	
3	Grading	Grading	8/1/2018	10/31/2018	5	66	
4	Building Construction	Building Construction	11/1/2018	12/31/2019	5	304	
5	Paving	Paving	1/1/2020	3/31/2020	5	65	
6	Architectural Coating	Architectural Coating	4/1/2020	8/31/2020	5	109	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,009,500; Non-Residential Outdoor: 336,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	50.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	250.00	110.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048		3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**		**1.9386**	**1.9386**		**1.8048**	**1.8048**		**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0808	0.0580	0.7526	1.8400e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2300e-003	0.0457		182.9028	182.9028	6.2400e-003		183.0587
Total	**0.0808**	**0.0580**	**0.7526**	**1.8400e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2300e-003**	**0.0457**		**182.9028**	**182.9028**	**6.2400e-003**		**183.0587**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048	0.0000	3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**		**1.9386**	**1.9386**		**1.8048**	**1.8048**	**0.0000**	**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0808	0.0580	0.7526	1.8400e-003	0.1677	1.3400e-003	0.1690	0.0445	1.2300e-003	0.0457		182.9028	182.9028	6.2400e-003		183.0587
Total	**0.0808**	**0.0580**	**0.7526**	**1.8400e-003**	**0.1677**	**1.3400e-003**	**0.1690**	**0.0445**	**1.2300e-003**	**0.0457**		**182.9028**	**182.9028**	**6.2400e-003**		**183.0587**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.0663**	**2.5769**	**20.6432**	**9.9307**	**2.3708**	**12.3014**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0970	0.0695	0.9032	2.2100e-003	0.2012	1.6000e-003	0.2028	0.0534	1.4800e-003	0.0548		219.4833	219.4833	7.4800e-003		219.6704
Total	**0.0970**	**0.0695**	**0.9032**	**2.2100e-003**	**0.2012**	**1.6000e-003**	**0.2028**	**0.0534**	**1.4800e-003**	**0.0548**		**219.4833**	**219.4833**	**7.4800e-003**		**219.6704**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**7.0458**	**2.5769**	**9.6228**	**3.8730**	**2.3708**	**6.2437**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0970	0.0695	0.9032	2.2100e-003	0.2012	1.6000e-003	0.2028	0.0534	1.4800e-003	0.0548		219.4833	219.4833	7.4800e-003		219.6704
Total	**0.0970**	**0.0695**	**0.9032**	**2.2100e-003**	**0.2012**	**1.6000e-003**	**0.2028**	**0.0534**	**1.4800e-003**	**0.0548**		**219.4833**	**219.4833**	**7.4800e-003**		**219.6704**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2272	0.0000	7.2272	3.4404	0.0000	3.4404			0.0000			0.0000
Off-Road	5.0901	59.5218	35.0894	0.0620		2.6337	2.6337		2.4230	2.4230		6,244.4284	6,244.4284	1.9440		6,293.0278
Total	**5.0901**	**59.5218**	**35.0894**	**0.0620**	**7.2272**	**2.6337**	**9.8609**	**3.4404**	**2.4230**	**5.8634**		**6,244.4284**	**6,244.4284**	**1.9440**		**6,293.0278**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8186	0.0000	2.8186	1.3417	0.0000	1.3417			0.0000			0.0000
Off-Road	5.0901	59.5218	35.0894	0.0620		2.6337	2.6337		2.4230	2.4230	0.0000	6,244.4284	6,244.4284	1.9440		6,293.0278
Total	**5.0901**	**59.5218**	**35.0894**	**0.0620**	**2.8186**	**2.6337**	**5.4524**	**1.3417**	**2.4230**	**3.7648**	**0.0000**	**6,244.4284**	**6,244.4284**	**1.9440**		**6,293.0278**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1078	0.0773	1.0035	2.4500e-003	0.2236	1.7800e-003	0.2253	0.0593	1.6400e-003	0.0609		243.8703	243.8703	8.3200e-003		244.0782
Total	**0.1078**	**0.0773**	**1.0035**	**2.4500e-003**	**0.2236**	**1.7800e-003**	**0.2253**	**0.0593**	**1.6400e-003**	**0.0609**		**243.8703**	**243.8703**	**8.3200e-003**		**244.0782**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4681	13.3303	3.3197	0.0288	0.7040	0.0974	0.8014	0.2027	0.0932	0.2959		3,065.2384	3,065.2384	0.2086		3,070.4538
Worker	1.3471	0.9658	12.5439	0.0306	2.7944	0.0223	2.8167	0.7411	0.0205	0.7616		3,048.3792	3,048.3792	0.1039		3,050.9777
Total	**1.8151**	**14.2961**	**15.8637**	**0.0594**	**3.4985**	**0.1197**	**3.6181**	**0.9438**	**0.1137**	**1.0575**		**6,113.6175**	**6,113.6175**	**0.3126**		**6,121.4316**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4681	13.3303	3.3197	0.0288	0.7040	0.0974	0.8014	0.2027	0.0932	0.2959		3,065.2384	3,065.2384	0.2086		3,070.4538
Worker	1.3471	0.9658	12.5439	0.0306	2.7944	0.0223	2.8167	0.7411	0.0205	0.7616		3,048.3792	3,048.3792	0.1039		3,050.9777
Total	**1.8151**	**14.2961**	**15.8637**	**0.0594**	**3.4985**	**0.1197**	**3.6181**	**0.9438**	**0.1137**	**1.0575**		**6,113.6175**	**6,113.6175**	**0.3126**		**6,121.4316**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4241	12.5866	3.0427	0.0285	0.7040	0.0834	0.7874	0.2027	0.0798	0.2824		3,038.4167	3,038.4167	0.2010		3,043.4428
Worker	1.2244	0.8520	11.2334	0.0297	2.7944	0.0218	2.8162	0.7411	0.0200	0.7611		2,952.4726	2,952.4726	0.0923		2,954.7810
Total	**1.6484**	**13.4386**	**14.2761**	**0.0582**	**3.4984**	**0.1051**	**3.6036**	**0.9438**	**0.0998**	**1.0436**		**5,990.8893**	**5,990.8893**	**0.2934**		**5,998.2238**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4241	12.5866	3.0427	0.0285	0.7040	0.0834	0.7874	0.2027	0.0798	0.2824		3,038.4167	3,038.4167	0.2010		3,043.4428
Worker	1.2244	0.8520	11.2334	0.0297	2.7944	0.0218	2.8162	0.7411	0.0200	0.7611		2,952.4726	2,952.4726	0.0923		2,954.7810
Total	**1.6484**	**13.4386**	**14.2761**	**0.0582**	**3.4984**	**0.1051**	**3.6036**	**0.9438**	**0.0998**	**1.0436**		**5,990.8893**	**5,990.8893**	**0.2934**		**5,998.2238**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860
Total	**0.0679**	**0.0456**	**0.6132**	**1.7200e-003**	**0.1677**	**1.2700e-003**	**0.1689**	**0.0445**	**1.1700e-003**	**0.0456**		**171.6626**	**171.6626**	**4.9400e-003**		**171.7860**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860
Total	**0.0679**	**0.0456**	**0.6132**	**1.7200e-003**	**0.1677**	**1.2700e-003**	**0.1689**	**0.0445**	**1.1700e-003**	**0.0456**		**171.6626**	**171.6626**	**4.9400e-003**		**171.7860**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.2359					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**57.4781**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2262	0.1521	2.0441	5.7400e-003	0.5589	4.2400e-003	0.5631	0.1482	3.9000e-003	0.1521		572.2087	572.2087	0.0165		572.6200
Total	**0.2262**	**0.1521**	**2.0441**	**5.7400e-003**	**0.5589**	**4.2400e-003**	**0.5631**	**0.1482**	**3.9000e-003**	**0.1521**		**572.2087**	**572.2087**	**0.0165**		**572.6200**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	57.2359					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**57.4781**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2262	0.1521	2.0441	5.7400e-003	0.5589	4.2400e-003	0.5631	0.1482	3.9000e-003	0.1521		572.2087	572.2087	0.0165		572.6200
Total	**0.2262**	**0.1521**	**2.0441**	**5.7400e-003**	**0.5589**	**4.2400e-003**	**0.5631**	**0.1482**	**3.9000e-003**	**0.1521**		**572.2087**	**572.2087**	**0.0165**		**572.6200**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.4276	53.2130	93.6860	0.2839	19.8231	0.2343	20.0574	5.3040	0.2185	5.5226		28,964.1741	28,964.1741	1.7494		29,007.9092
Unmitigated	12.7168	55.1859	101.5237	0.3152	22.4752	0.2580	22.7331	6.0136	0.2406	6.2543		32,143.5001	32,143.5001	1.8807		32,190.5184

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	4,329.12	3,480.00	0.00	5,473,712	4,827,814
Regional Shopping Center	3,250.00	3,900.00	5200.00	2,763,606	2,437,501
Total	7,579.12	7,380.00	5,200.00	8,237,319	7,265,315

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	5.00	5.00	5.00	59.00	28.00	13.00	79	19	2
Regional Shopping Center	5.00	5.00	5.00	16.30	64.70	19.00	33	33	34

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925
Industrial Park	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0573	0.5209	0.4376	3.1300e-003		0.0396	0.0396		0.0396	0.0396		625.0669	625.0669	0.0120	0.0115	628.7813
NaturalGas Unmitigated	0.0573	0.5209	0.4376	3.1300e-003		0.0396	0.0396		0.0396	0.0396		625.0669	625.0669	0.0120	0.0115	628.7813

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3327.45	0.0359	0.3262	0.2740	1.9600e-003		0.0248	0.0248		0.0248	0.0248		391.4650	391.4650	7.5000e-003	7.1800e-003	393.7912
Regional Shopping Center	1985.62	0.0214	0.1947	0.1635	1.1700e-003		0.0148	0.0148		0.0148	0.0148		233.6019	233.6019	4.4800e-003	4.2800e-003	234.9901
Total		**0.0573**	**0.5209**	**0.4376**	**3.1300e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**		**625.0669**	**625.0669**	**0.0120**	**0.0115**	**628.7813**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	3.32745	0.0359	0.3262	0.2740	1.9600e-003		0.0248	0.0248		0.0248	0.0248		391.4650	391.4650	7.5000e-003	7.1800e-003	393.7912
Regional Shopping Center	1.98562	0.0214	0.1947	0.1635	1.1700e-003		0.0148	0.0148		0.0148	0.0148		233.6019	233.6019	4.4800e-003	4.2800e-003	234.9901
Total		**0.0573**	**0.5209**	**0.4376**	**3.1300e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**		**625.0669**	**625.0669**	**0.0120**	**0.0115**	**628.7813**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.0411	6.3000e-004	0.0690	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		0.1473	0.1473	3.9000e-004		0.1571
Unmitigated	15.0411	6.3000e-004	0.0690	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		0.1473	0.1473	3.9000e-004		0.1571

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.7092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	13.3254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.4400e-003	6.3000e-004	0.0690	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		0.1473	0.1473	3.9000e-004		0.1571
Total	**15.0411**	**6.3000e-004**	**0.0690**	**1.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**		**0.1473**	**0.1473**	**3.9000e-004**		**0.1571**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.7092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	13.3254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.4400e-003	6.3000e-004	0.0690	1.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		0.1473	0.1473	3.9000e-004		0.1571
Total	**15.0411**	**6.3000e-004**	**0.0690**	**1.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**		**0.1473**	**0.1473**	**3.9000e-004**		**0.1571**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

GENERAL BIOLOGICAL ASSESSMENT REPORT
MORENO VALLEY FESTIVAL
CITY OF MORENO VALLEY, CALIFORNIA

Prepared for:

Moreno Valley Festival, LTD
1072 Bristol Street, Suite 100
Costa Mesa, CA 92626

Prepared by:
Hernandez Environmental Services
29376 North Lake Drive
Lake Elsinore, CA 92530

November 2015

TABLE OF CONTENTS

FIGURES

APPENDICES

Summary

Hernandez Environmental Services (HES) was contracted by Moreno Valley Festival to prepare a General Biological Assessment (GBA) and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for a 49-acre proposed project site. The proposed project consists of a commercial/retail and mixed use development. The project site consists of Assessor Parcel Numbers (APNs) 481-020-017, 481-020-019, 481-020-022, 481-020-023, 481-020-028, 481-020-028, 481-090-009, 481-090-018, 481-090-020, 481-090-021, 481-090-022, 481-090-029, 481-090-032, and 481-090-033.

On July 13, 2015, Juan Hernandez, Principal Biologist for HES, conducted a field survey of the approximate 49-acre project site. The project site contains seven habitat types: 23.4 acres of developed habitat, 20.2 acres of disturbed non-native vegetation habitat, 3.20 acres of disturbed non-native grasses habitat, 1.15 acres of disturbed coastal sage scrub, 0.87 acres of ornamental vegetation habitat, 0.16 acres of streambed, and 0.07 acres of mulefat habitat. The project site also contains approximately 0.16 acres of streambed, and 0.07 acres of mulefat habitat for a total of 0.23 acre of riparian habitat. No wildlife movement corridors were found to be present on the project site. The 20.2 acres of disturbed non-native vegetation habitat, and the 3.20 acres of disturbed non-native grasses habitat, is suitable for burrowing owl. Focused surveys were performed in compliance with TLMA requirements. No burrowing owl were found.

The proposed project is expected to impact 23.4 acres of developed habitat, 20.2 acres of disturbed non-native vegetation habitat, 3.20 acres of disturbed non-native grasses habitat, 1.15 acres of disturbed coastal sage scrub, 0.87 acres of ornamental vegetation habitat, 0.16 acres of streambed, and 0.07 acres of mulefat habitat.

The project site was found to have the potential for San Bernardino aster to occur. This species is not covered under the Western Riverside MSHCP but through participation in the plan, and the land acquisition and preservation by the plan, this species would be adequately covered. Cooper's Hawk, Bell's Sage Sparrow, Coastal horned lizard, Orange-throat Whiptail, Coastal Whiptail, Red-diamond Rattlesnake, California Horned Lark, San Diego Black-tailed Jackrabbit are fully covered species under the Western Riverside MSHCP. The proposed project must be consistent with the Western Riverside MSHCP. Payment of the appropriate development mitigation fees will mitigate any impacts to these species. Further, it is recommended that three days prior to any ground disturbing activities or vegetation removal, a qualified biological monitor should conduct a preconstruction survey to identify any sensitive biological resources to flag for avoidance. Any reptile species that may be present within the project area shall be relocated outside of the impact areas.

Due to the presence of suitable nesting bird habitat on the project site, it is recommended that vegetation removal be conducted during the non-nesting season for migratory birds to avoid direct impacts. The migratory bird nesting season is between February 1 and September 15. If vegetation removal will occur during the migratory bird nesting season, between February 1 and September 15, it is recommended that pre-construction nesting bird surveys be performed within three days prior to vegetation removal.

Impacts to approximately 0.16 acres of streambed, and 0.07 acres of mulefat habitat for a total of 0.23 acre of riparian habitat will require consultation with the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Santa Ana Regional Water Quality Control Board to determine the need for permits that must be obtained prior to initiation of construction of the proposed project. In addition, the loss of Western

Riverside MSHCP riverine resources will require preparation of an MSHCP Determination of Biologically Equivalent or Superior Preservation (DBESP).

1.0 Introduction

Hernandez Environmental Services (HES) was contracted by Moreno Valley Festival to prepare a General Biological Assessment (GBA) and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for a 49-acre proposed project site, which is comprised of Assessor's Parcel Numbers (APNs) 481-020-017, 481-020-019, 481-020-022, 481-020-023, 481-020-028, 481-020-028, 481-090-009, 481-090-018, 481-090-020, 481-090-021, 481-090-022, 481-090-029, 481-090-032, and 481-090-033. The proposed project consists of a commercial/retail and mixed use development.

1.1 Project Site Location

The project site is located in the City of Moreno Valley in Riverside County at the southeast intersection of Heacock Street and Ironwood Avenue (Figure 1). The southern boundary is defined by the Moreno Valley Freeway (CA-60). The project site consists of 15 parcels totaling approximately 49.0 acres. Approximately 27.21 acres are developed with the existing Festival Shopping Center and commercial development south of Hemlock Avenue; the remaining 22.39 acres are undeveloped and vacant (Figure 2). The site is located within the United States Geological Survey (USGS) 7.5-Minute Topographic Map Sunnymead Quadrangle. The approximate center point is 33°56'28"N, 117°14'33"W.

1.2 Project Description

The proposed project is the development of the Moreno Valley Festival (Figure 3). The plan area includes approximately 49.0 acres; a portion of the site is currently developed with the Festival Shopping Center on the north side of Hemlock Street and with a fast food establishment and miscellaneous commercial development on the south side of Hemlock Street.

The purpose of this GBA and Western Riverside County MSHCP Consistency Analysis is to identify any potential biological resources that may be present on or adjacent to the project site.

2.0 Methodology

2.1 Literature Review

HES conducted a literature review and reviewed aerial photographs and topographic maps of the project site and surrounding areas. The Sunnymead quad and adjacent surrounding eight quads were used to identify sensitive species in the California Natural Diversity Data Base (CNDDB). Additional resources reviewed during the literature search included the United States Fish and Wildlife (USFWS) Endangered Species Lists, Forest Service List, and the California Native Plant Society's (CNPS) Rare plant lists to obtain species information for the project area.

2.2 Field Survey

On July 13, 2015, Juan Hernandez, Principal Biologist for HES, conducted a field survey of the approximate 49-acre project site. The ambient temperature at 9:30 a.m. was 72˚ Fahrenheit, sunny, with zero to three mile per hour winds from the northeast. The purpose of the field survey was to document the existing habitat conditions, obtain plant and animal species information, view the surrounding uses, assess the potential for state and federal waters, and assess the potential for wildlife movement corridors, sensitive species, and nesting habitat.

The entire project site was surveyed. Linear transects spaced approximately 50 feet apart were walked for 100 percent coverage. All species observed were recorded and are listed in Appendix A. Global Positioning System (GPS) waypoints were taken to delineate specific habitat types, species locations, and any other information that would be useful for the assessment of the property.

3.0 Existing Conditions and Results

3.1 Environmental Setting

The project site is located in a heavily urbanized area in the City of Moreno Valley. The project site has residential homes to the north, residential homes to the east, residential homes to the west, and CA-60 and commercial properties to the south. The project site has been heavily disturbed and no quality native habitat remains onsite. Portions of the property have already been developed with commercial/retail buildings. Other portions of the property consist of vacant, disked lots. The elevation of the project site varies from 1,674 feet above sea level (ASL) to 1,641feeet ASL. There is a small, disturbed, non-meandering ephemeral drainage located in the northwest portion of the property. The drainage crosses the project site from west to east and empties into Indian Basin.

3.2 Soils

The Natural Resources Conservation Service Web Soil Survey identified eight (8) soil types within the GBA 62.50-acre study area. The following soil types are identified in the Soil Survey: Greenfield sandy loam(GyA), 0 to 2 percent slope; Greenfield sandy loam (GyC2), 2 to 8 percent slopes eroded,; Greenfield sandy loam (GyD2), 8 to 15 percent slopes, eroded; Hanford coarse sandy loam (HcC), 2 to 8 percent slopes; Monserate sandy loam, 0 to 5 percent slopes; Ramona sandy loam(RaB2), 2 to 5 percent slopes, eroded; Ramona sandy loam(RaB3), 0 to 5 percent slopes, severely eroded; Tujunga loamy sand (TvC), channeled, 0 to 8 percent slopes. Tujunga Loamy Sand (TvC), channeled 0 to 8 percent slope, is the only hydric soil in the study area. Refer to Appendix D.

3.3 Plant and Habitat Communities

The project site contains seven habitat types: 23.4 acres of developed habitat, 20.2 acres of disturbed non-native vegetation habitat, 3.20 acres of disturbed non-native grasses habitat, 1.15 acres of disturbed coastal sage scrub, 0.87 acres of ornamental vegetation habitat, 0.16 acres of streambed, and 0.07 acres of mulefat habitat (Figure 4).

Table 1
Onsite Habitat

Developed Habitat	Disturbed Non-native Vegetation Habitat	Disturbed Non-native Grasses Habitat	Disturbed Coastal Sage Scrub	Ornamental Vegetation Habitat	Streambed Habitat	Mulefat Habitat
23.4 Acres	20.2 Acres	3.20 Acres	1.15 Acres	0.87 Acres	0.16 Acres	0.07 Acres

The following is a description of each habitat type:

3.3.1 Developed Habitat

Approximately 23.4 acres of developed habitat exists on the project site. The developed habitat contains existing commercial and retail buildings and the majority of the buildings are currently being utilized. This habitat also included parking lot areas, and contain no native habitat and wildlife value.

3.3.2 Disturbed Non-native Vegetation Habitat

The project site contains approximately 20.2 acres of disturbed non-native vegetation habitat. This habitat type has been disturbed and native vegetation has been removed by disking or other anthropomorphic activities. Dominant plant species found in this habitat type consist of black mustard (*Brassia nigra*), mustard (*Brassica tournefortii*), tacalote (*Centaurea melitensis*), bullthistle (*Cirsium vulgare*), field bindweed (*Convolvulus arvensis*), heron's bill (*Erodium cicutarium*), horehound (*Marrubium vulgare*), tree tabacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), and Russian thistle (*Salsola tragus*).

3.3.3 Disturbed Non-native Grasses Habitat

The project site contains approximately 3.20 acres of disturbed non-native grasses habitat. This habitat type has been disturbed and native vegetation has been removed by disking or other anthropomorphic activities. Dominant plant species found in this habitat type consist of slim oats (*Avena barbata*), ripgut

brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail (*Bromus madritensis*), foxtail barley (*Hordeum murinum*), and common barley (*Hordeum vulgare*).

3.3.4 Disturbed Coastal Sage Scrub Habitat

The project site contains approximately 1.15 acres of disturbed coastal sage scrub habitat. This habitat type has shrubs commonly associated with coastal sage scrub, but shows evidence of having been disturbed in the past. The coastal sage scrub does not look very well developed, and has sections were it has obviously been disturbed by anthropomorphic activities. Dominant vegetation in this habitat type include: brittlebush (*Encelia farinosa*), California buckwheat (*Eriogonum fasciculatum*), lotus (*Acmispon strigosus*), gord (*Cucurbita foetidissima*), tarweed (*Deinandra fasciculata*), black sage (*Salvia mellifera*) and telegraph weed (*Heterotheca grandifolia*).

3.3.5 Ornamental Vegetation Habitat

The project site contains approximately 0.87 acres of ornamental vegetation habitat. This habitat type has been created and is composed entirely of non-native trees and shrubs. Common species associated with this habitat type are eucalyptus (*Eucalyptus* sp.), oleander (*Nerium oleander*), and Peruvian pepper tree (*Schinus molle*).

3.3.6 Streambed Habitat

The project site contains approximately 0.16 acres of streambed habitat. This habitat is characterized by sandy streambed with small amounts of native and non-native vegetation. Vegetation species associated with this habitat include: Mexican fan palm (Washingtonia robusta), tree tabacco, horseweed (*Erigeron canadensis*), heliotrope (Heliotropium curassavicum), sunflower (Helianthus annus), and tamarisk (*Tamarix sp*.).

3.3.6 Mulefat Habitat

The project site contains approximately 0.07 acres of mulefat habitat. The ephemeral drainage contains small patches of areas dominated by mulefat (Baccharis salicifolia).

4.0 Sensitive Biological Resources

4.1 Threatened and Endangered Species

A total of 51 sensitive species of plants and 54 sensitive species of animals have the potential to occur on or within the vicinity of the GBA study area. These include those species listed or candidates for listing by the U. S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS). All habitats with the potential to be used by

sensitive species was evaluated during the site visit and a determination has been made for the presence or probability of presence within this report. This section will address those species listed as Candidate, Rare, Threatened, or Endangered under the state and federal endangered species laws or directed to be evaluated under the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP). Sensitive species which have a potential to occur will also be discussed in this section. All other special status species are addressed within Appendix B.

4.1.1 Threatened and Endangered Plants

A total of 11 plant species were identified as state and/or federally listed as Threatened, Endangered, or Candidate. All species have a rank of 1B.1 or 1B.2 in the CNPS Rare Plan Inventory. The GBA survey area is not located within the Western Riverside MSHCP narrow endemic plant overlay and a habitat assessment for narrow endemic plants was not required; however, several of the species identified below are covered species under the MSHCP.

Munz's Onion

Munz's onion (*Allim munzii*) is federally listed as Endangered and State listed as Threatened; the species rank is 1B.1 in the CNPS rare plant inventory. The species is found in grassy openings in coastal-sage scrub vegetation at elevations ranging from 300-900m. Its blooming period is from April to May. The project site has been disked and there is no suitable habitat for this species. **This species is not present.**

San Diego Ambrosia

San Diego Ambrosia (*Ambrosia pumila*) is a federally listed Endangered species and is a rank 1B.1 species in the CNPS rare plant inventory. The species is found in disturbed sites at elevations ranging from 50 – 600 m. Its blooming period is from April to July. The project site has been disked and the disturbed habitat may be suitable for this species. **This species is not present.**

Marsh Sandworth

Marsh sandworth (*Arenaria paludicola*) is federally and State listed as Endangered and is ranked as 1B.1 in the CNPS rare plant inventory. The species is found in wet meadows and marshes at elevations less than 300 meters. The species blooms from late spring into summer. The project site has been disked and the disturbed is not suitable for this species. The basin area on the east side of the property is regularly maintained and does not support suitable habitat for marsh sandworth. **This species is not present.**

San Jacinto Valley Crownscale

San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*) is a federally listed Endangered species and is ranked as 1B.1 in the CNPS rare plant inventory. The species is found in alkaline flats at elevations ranging from 400-500 meters. Its blooming period is April to August. The project site has been disked and the disturbed habitat is not suitable for this species. **This species is not present.**

Nevin's Barberry

Nevin's barberry (*Berberis nevinii*) is a federally and State listed endangered species and is a rank 1B.1 species in the CNPS rare plant inventory. The species is found in sandy to gravelly soils, washes, and chaparral habitats at elevations less than 650 meters. It blooms from March to May. The project site has been disked and the disturbed habitat is not suitable for this species. **This species is not present.**

Thread-leaved Brodiaea

Tread-leaved brodiaea (*Brodiaea filifolia*) is a federally listed Threatened and State listed Endangered species. The species is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in grassland habitats and vernal pools at elevations ranging from 25 to 860 meters. Its blooming period is from March to June. The project site has been disked and the disturbed habitat is not suitable for this species. The basin area on the east side of the property is regularly maintained and does not support suitable habitat for thread-leaved brodiaea. **This species is not present.**

Salt Marsh Bird's-Beak

Salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*) is a federally and State listed Endangered species and is ranked 1B.2 in the CNPS rare plant inventory. This species occurs in coastal salt marsh habitat at elevations less than 10 meters. Its blooming period is from May to October. The project site has been disked and the disturbed habitat is not suitable for this species. **This species is not present.**

Slender-Horned Spineflower

Slender-horned spineflower (*Dodecahema leptoceras*) is a federally and State listed Endangered species and is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in sand or gravel soils at elevations ranging from 200 to 700 meters. Its flowering period is from May to June. The project site does not support suitable habitat for this species. **This species is not present.**

Santa Ana River Woollystar

Santa Ana River Woollystar (*Eriastrum densifolium* ssp. *sanctorum*) is a federally and state listed Endangered species and is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in washes, floodplains, and dry riverbeds at elevations less than 500 meters. Its blooming period is from May to September. The project site does not support suitable habitat for this species. **This species is not present.**

Gambel's Water Cress

Gambel's water cress (*Nasturtium gambelii*) is a federally listed Endangered and State listed Threatened species; it is ranked 1B.1 in the CNPS rare plant inventory. This species occurs in marshes, streambanks, and lake margins at elevations less than 350 meters. Its blooming period is from May to August. The project site does not support suitable habitat for this species. **This species is not present.**

Spreading Navarretia

Spreading navarretia (*Navarretia fossalis*) is a federally listed Threatened species and is ranked 1B.1 in the CNPS rare plant inventory. This species is found in vernal pools and ditches at elevations ranging from 30 to 1300 meters. Its blooming period is from April to June. The project site does not support habitat suitable for this species. **This species is not present.**

4.1.2 Threatened and Endangered Animals

A total of 13 animal species listed as state and/or federally Threatened, Endangered, or Candidate or for special consideration under the Riverside County MSHCP will be reviewed in this section. Sensitive species which have a potential to occur will also be discussed in this section. All sensitive species identified within CNDDB were evaluated; a complete list of species is included in Appendix B.

Southern Mountain Yellow-Legged Frog

Southern mountain yellow-legged frog (*Rana muscosa*) is a federally and state listed endangered species. Additionally the species is listed as a CDFW Species of Special Concern. Populations of the species is southern California occupy a wide elevational range from 1,200 feet to 7,500 feet. Habitat includes rocky, shaded streams with cool waters originating from springs and snowmelt. The project site does not support suitable habitat for this species. **This species is not present.**

Tricolored Blackbird

Tricolored bird (*Agelaius tricolor*) is State listed as endangered and listed by the CDFW as a Species of Special Concern. The species occupies freshwater marshes with canopies of willows (*Salix* spp.) and other riparian trees and require open accessible water and suitable foraging space. The project site does not support suitable nesting habitat for the species. **This species is not present.**

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a CDFW Species of Special Concern and a MSHCP covered species. The species lives in dry open areas with no trees and short grass. Focused surveys for the species were completed and returned negative. **This species is not present.**

Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is federally listed as threatened and state listed as Endangered. It is found in riparian habitat with vegetation such as willow and willow-cottonwood thickets with heavy underbrush. The species is restricted to cottonwood-dominated forests. The project site does not support suitable habitat for this species. **This species is not present.**

Southwestern Willow Flycatcher

Southwestern willow flycatcher (*Empidonax trailii extimus*) is federally and state listed as endangered. The species breeds in dense riparian habitats along rivers, streams, or other wetlands. Vegetation can be dominated by dense growths of willows, seepwillow (*Baccharis* sp.), tamarisk (*Tamarix* sp.) or other large trees. The project site does not support nesting habitat for this species. **This species is not present.**

Bald Eagle

Bald eagle (*Halieaeetus leucocephalus*) is State listed as endangered and is a delisted federal species. The species is fully protected under the regulations of the CDFW. It is found around wetlands, open water areas with an abundance of fish. It nests and roosts in large trees. The project site does not support suitable habitat for this species. **The species is not present.**

Coastal California Gnatcatcher

Coastal Californiagnatcatcher (*Polioptila californica californica*) is a federally listed threatened species and CDFW species of Special Concern. The species range is limited to the California coast and is found only in coastal sage scrub. The project site does not support suitable habitat for this species. **This species is not present.**

Least Bell's Vireo

Least Bell's vireo (*Vireo belii pusillus*) is a federally and State listed endangered species. It is found in riparian forests, riparian scrub, and riparian woodlands. The project site does not support suitable habitat for this species. **This species is not present.**

Santa Ana Sucker

Santa Ana sucker (*Catostomus santaanae*) is a federally listed threatened species and CDFW species of special concern. The species is restricted to southern California rivers. The project site does not support suitable habitat for this species. **This species is not present.**

Quino Checkerspot Butterfly

Quino checkerspot butterfly (*Euphydryas editha quino*) is a federally listed endangered species. Vegetation types that support the Quino checkerspot butterfly include coastal sage scrub, open chaparral, juniper woodland, and native grassland. Suitability of habitat is affected by soil and climatic conditions, as well as other ecological and physical factors. The species range is limited to Riverside and San Diego Counties. The project site does not support suitable habitat for this species. **This species is not present.**

Delhi Sands Flower-Loving Fly

Delhi sands flower-loving fly (*Rhaphimidas terminatus abdominalis*) is a federally listed endangered species. Its habitat is limited to dunes containing sandy soils of the Delhi series. The project site does not support suitable habitat for this species. **This species is not present.**

Stephens' Kangaroo Rat

Stephens' Kangaroo Rat (*Dipodomys stephensi*) is a federally listed endangered species and state listed threatened species. The species is found in coastal sage scrub, and in valley and foothill grasslands. The project site does not support suitable habitat for this species. **This species is not present.**

Lesser Long-Nosed Bat

Lesser long-nosed bat (*Leptonycteris yerbabuenae*) is a federally listed endangered species. This species requires suitable roost sites and extensive populations of columnar cacti and agaves. The project site does not support suitable habitat for this species. **This species is not present.**

4.2 Species with other Special Status Listings

Species which are listed as California Species of Special Concern or are on the CDFW List of Rare plants have all been evaluated and the results can be reviewed within Appendix B. Any of these species that have the potential to be present or are considered present within the project area will have mitigation measures to avoid or minimize impacts in the Recommendations section of this report.

4.3 Critical Habitats

The project site is not located within critical habitat as designated by the USFWS. Critical habitat for the coastal California gnatcatcher occurs approximately three miles to the north and more than four miles to the west of the project site. There is no critical habitat immediately adjacent to the project site.

4.4 Nesting Birds

The project site does have shrubs and trees that can support nesting song birds or raptors. The 23.4 acres of developed habitat, 20.2 acres of disturbed non-native vegetation habitat, 3.20 acres of disturbed non-native grasses habitat, 1.15 acres of disturbed coastal sage scrub, 0.87 acres of ornamental vegetation habitat, 0.16 acres of streambed, and 0.07 acres of mulefat habitat are considered habitat that can be utilized by nesting birds and raptors during the nesting bird season of February 1 through September 15.

4.5 Wildlife Movement Corridors

The project site is too isolated by residential and commercial structures to function as a wildlife movement corridor. There are no major riparian areas or canyons that can function as a corridor for wildlife. The project site also has a high amount of anthropomorphic disturbances to adequately function as a wildlife movement corridor.

4.6 Western Riverside Multiple Species Habitat Conservation Plan

4.6.1 Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

The project site contains approximately 0.16 acres of streambed, and 0.07 acres of mulefat habitat for a total of 0.23 acre of riparian habitat. This habitat is also regulated under Section 1602 of the California Department of Fish and Game Code for the protection of lake or streams and under Section 404 and 401 of the Clean Water Act. This habitat is also considered riparian/riverine areas as defined in Section 6.1.2 of the Western Riverside MSHCP. Any project impacts to this habitat will need to be in compliance with Section 6.1.2 of the Western Riverside MSHCP. No vernal pools were observed within the project boundaries.

4.6.2 Section 6.1.3 Protection of Narrow Endemic Plant Species

The project site is not located within the narrow endemic plants overlay of the MSHCP and there are no habitat assessment requirements for narrow endemic plant species as identified in the MSHCP

4.6.3 Section 6.1.4 Guidelines Pertaining to the Urban/Wildlands Interface

The project site is not located within a Western Riverside MSHCP linkage or criteria cell. Therefore, the project is not subject to Section 6.1.4 pertaining to urban/wildlands interface.

4.6.4 Section 6.3.2 Guidelines Additional Survey Needs and Procedures

Riverside County Transportation and Land Management (TLMA) requires a habitat assessment for burrowing owl. If habitat is present than focused burrowing owl surveys as described in the Western Riverside MSHCP *Burrowing Owl Survey Instructions*. The 20.2 acres of disturbed non-native vegetation habitat, and the 3.20 acres of disturbed non-native grasses habitat, is suitable for burrowing owl. Focused surveys were performed in compliance with TLMA requirements. No burrowing owl were found.

4.7 Other City, County, Regional, State, or Federal Conservation Plans

The project site is located within an independent cell group of the Reche Canyon/Badlands area plan of the Western Riverside MSHCP.

4.8 State and Federal Jurisdictional Drainages

The project site contains approximately 0.16 acres of streambed, and 0.07 acres of mulefat habitat for a total of 0.23 acre of riparian habitat. This habitat is regulated under Section 1602 of the California Department of Fish and Game Code for the protection of lake or streams and under Section 404 and 401 of the Clean Water Act. No vernal pools were observed within the project boundaries.

4.9 Oak Trees

The project site does not contain oak trees.

5.0 Project Impacts

5.1 Impacts to Existing Habitats

The proposed project is expected to impact 23.4 acres of developed habitat, 20.2 acres of disturbed non-native vegetation habitat, 3.20 acres of disturbed non-native grasses habitat, 1.15 acres of disturbed coastal sage scrub, 0.87 acres of ornamental vegetation habitat, 0.16 acres of streambed, and 0.07 acres of mulefat habitat (Figure 5).

5.2 Impacts to Sensitive Species

One species was identified to the potential to occur on site. Project activities were evaluated to determine the potential for impacts to these species.

<u>San Bernardino Aster</u>
The San Bernardino Aster (*Symphyotrichum defoliatum*) is a CNPS 1B.2 listed plant that is found in grasslands or disturbed habitats. It blooms between the months of July and November. The project site contains habitat for this species.

<u>Cooper's Hawk</u>
Cooper's hawk (*Accipiter cooperii hawk*) is a CDFW watch list species and International Union for Conservation of Nature (IUCN) species of least concern. The species foraging habitat includes rivers, and woodlands including willows, cottonwoods, and sycamores. Nesting habitat for this species occurs at the project site in the Eucalyptus trees adjacent to the site. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

<u>Bell's Sage Sparrow</u>
Bell's sage sparrow (*Artemisiospiza belli belli*) is a CDFW watch list species and USFWS bird of conservation concern. The species nests in coastal sage scrub and chaparral. The project site supports

some disturbed coastal sage scrub that may serve as habitat. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

Orange-throat Whiptail

Orange-throat whiptail (*Aspidoscelis typerythra*) is a CDFW species of special concern and IUCN species of least concern. The species inhabits low elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitat. The project site supports some disturbed coastal sage scrub that may serve as habitat. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

Coastal Whiptail

Coastal whiptail (*Aspidoscelis hyperythra*) is a CDFW species of special concern and IUCN species of least concern. It is found in a variety of ecosystems, primarily in hot and dry open areas with sparse foliage – chaparral, woodland, and riparian areas. The project site supports habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

Red-diamond Rattlesnake

Red-diamond rattlesnake (*Crotalus ruber*) is a CDFW species of special concern. The species habitat includes coastal sage scrub or chaparral with granite boulders. The project site supports habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

California Horned Lark

California horned lark (*Eremophila alpestris actia*) is a CDFW watch list species and IUCN species of least concern. The species is found in open areas dominated by sparse low herbaceous vegetation or widely scattered low shrubs. The project site supports habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

Western Yellow Bat

Western yellow bat (*Lasiurus xanthinus*) is a CDFW species of special concern and IUCN species of least concern. The species occupies a range of habitats of extremely arid areas including savannas, secluded woodlands, regions dominated by pasture or croplands, and residential areas. It is insectivorous and often roosts in trees. The project site supports limited roosting habitat for this species. This species is potentially present.

San Diego Black-tailed Jackrabbit

San Diego black-tailed jackrabbit is a CDFW species of special concern. The species habitat includes chaparral and coastal sage scrub. The project site supports limited habitat for this species. This species

is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

Coast Horned Lizard

Coast horned lizard (*Phrynosoma blainvillii*) is a CDFW species of special concern and IUCN species of least concern. The species inhabits open areas of sandy soils and low vegetation in valleys, foothills and semiarid mountains. It is found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. The project site supports limited habitat for this species. This species is potentially present. This species is covered by the Western Riverside MSHCP and is considered adequately conserved.

Lawrence's Goldfinch

Lawrence's goldfinch (*Spinus lawrencei*) is an IUCN species of least concern. The species inhabits open woodlands, chaparral, and weedy fields. The project site supports limited habitat for this species in the basin located adjacent to the eastern project boundary. This species is potentially present.

5.3 Nesting Birds

The project site does have shrubs and trees that can support nesting song birds or raptors. The 23.4 acres of developed habitat, 20.2 acres of disturbed non-native vegetation habitat, 3.20 acres of disturbed non-native grasses habitat, 1.15 acres of disturbed coastal sage scrub, 0.87 acres of ornamental vegetation habitat, 0.16 acres of streambed, and 0.07 acres of mulefat habitat are considered habitat that can be utilized by nesting birds and raptors during the nesting bird season. Potential impacts to nesting birds may occur if ground disturbing activities or vegetation removal occur during the bird nesting season of February 1 through September 15.

5.4 Impacts to Critical Habitat

The project is not located within designated federal critical habitat. No impact to critical habitat would occur.

5.5 Impacts to Wildlife Movement Corridors

No impacts to wildlife movement corridors is expected.

5.6 Conflict with Local Policies or Ordinances Protecting Biological Resources

Project is expecting removal of trees and will have to comply with City of Moreno Valley Landscape Ordinance Municipal Code § 9.17.030.

5.7 Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan

The project is within the Western Riverside MSHCP. If Western Riverside MSHCP guidelines and requirements are followed, no conflicts are expected.

5.8 State and Federal Drainages

The project site will impact approximately 0.16 acres of streambed, and 0.07 acres of mulefat habitat for a total of 0.23 acre of riparian habitat. This habitat is regulated under Section 1602 of the California Department of Fish and Game Code for the protection of lake or streams and under Section 404 and 401 of the Clean Water Act. No impacts to vernal pools are expected.

5.9 Impacts to Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

The project site is expected to impact approximately 0.16 acres of streambed, and 0.07 acres of mulefat habitat for a total of 0.23 acre of riparian habitat. This habitat is also regulated under Section 1602 of the California Department of Fish and Game Code for the protection of lake or streams and under Section 404 and 401 of the Clean Water Act. This habitat is also considered riparian/riverine areas as defined in Section 6.1.2 of the Western Riverside MSHCP. Any project impacts to this habitat will need to be in compliance with Section 6.1.2 of the Western Riverside MSHCP. No vernal pools were observed within the project boundaries.

5.10 Impacts to Section 6.1.3 Protection of Narrow Endemic Plant Species

The project site is not located within the narrow endemic plant overlay of the MSHCP; therefore, no impacts to narrow endemic plants are expected.

5.11 Impacts to Section 6.1.4 Guidelines Pertaining to the Urban/Wildlands Interface

The project site is not located within a Western Riverside MSHCP linkage or criteria cell. Therefore, the project is not subject to Section 6.1.4 pertaining to urban/wildlands interface.

5.12 Impacts to Section 6.3.2 Guidelines Additional Survey Needs and Procedures

Riverside County Transportation and Land Management (TLMA) requires a habitat assessment for burrowing owl. If habitat is present than focused burrowing owl surveys as described in the Western Riverside MSHCP *Burrowing Owl Survey Instructions*. The 20.2 acres of disturbed non-native vegetation habitat, and the 3.20 acres of disturbed non-native grasses habitat, is suitable for burrowing owl and focused surveys were performed in compliance with TLMA requirements. Focused burrowing

owl surveys were conducted in the months of June, July, and August and no burrowing owl were found. No impacts are expected.

5.11 Impacts to Oak Trees

No impacts to oak trees will occur.

6.0 Recommendations

In order to mitigate any potential impacts from project activities, the project should incorporate the following recommendations.

6.1 San Bernardino Aster

This species is not covered under the Western Riverside MSHCP but through participation in the plan, and the land acquisition and preservation by the plan, this species would be adequately covered.

6.2 Western Riverside MSHCP Covered Species

- Cooper's Hawk, Bell's Sage Sparrow, Coastal horned lizard, Orange-throat Whiptail, Coastal Whiptail, Red-diamond Rattlesnake, California Horned Lark, San Diego Black-tailed Jackrabbit are fully covered species under the Western Riverside MSHCP. The proposed project must be consistent with the Western Riverside MSHCP. Payment of the appropriate development mitigation fees will mitigate any impacts to these species. A fee schedule can be found in the Local Development Mitigation Fee Schedule for Fiscal Year 2015.

- Three days prior to any ground disturbing activities or vegetation removal, a qualified biological monitor should conduct a preconstruction survey to identify any sensitive biological resources to flag for avoidance. Any reptile species that may be present within the project area shall be relocated outside of the impact areas.

6.3 Nesting birds

- It is recommended that vegetation removal be conducted outside of the nesting season for migratory birds to avoid direct impacts. The migratory bird nesting season is between February 1 and September 15.

- If vegetation removal will occur during the migratory bird nesting season, between February 1 and September 15, it is recommended that pre-construction nesting bird surveys be performed within three days prior to vegetation removal.

- If active nests are found during nesting bird surveys, they shall be flagged and a 200-foot buffer shall be fenced around the nests.

- A biological monitor shall visit the site once a week during ground disturbing activities to ensure all fencing is in place and no sensitive species are being impacted.

6.4 State and Federal Drainages

- The project proponent shall consult with the California Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Santa Ana Regional Water Quality Control Board to determine the need for permits that must be obtained prior to initiation of construction of the proposed project.
- The loss of Western Riverside MSHCP riverine resources will require preparation of an MSHCP Determination of Biologically Equivalent or Superior Preservation (DBESP).

7.0 Certification

*"**CERTIFICATION**: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief."*

Signed 

PROJECT MANAGER

Fieldwork Performed By:

Juan Hernandez

PRINCIPAL BIOLOGIST

8.0 References

Burt, W. H., 1986. A Field Guide to the Mammals in North American North of Mexico. Houghton Mifflin Company, Boston, Massachusetts.

California Department of Fish and Game, 2013. Special Animals List.

California Native Plant Society, California Native Plant Status Report, 1985a. Centrostegia leptoceras.

California Native Plant Society, California Native Plant Status Report, 1985b. Eriastrum densifolium var. sanctorum.

Garrett, K. and J. Dunn, 1981. Birds of Southern California. Los Angeles Audubon Society. The Artisan Press, Los Angeles, California.

Grenfell, W. E., M. D. Parisi, and D. McGriff, 2003. A Check-list of the Amphibians, Reptiles, Birds and Mammals of California. California Wildlife Habitat Relationship System, California Department of Fish and Game, Sacramento, California.

Grinnell, J., 1933. Review of the Recent Mammal Fauna of California. University of California Publications in Zoology, 40:71-234.

Hall, E. R., 1981. The Mammals of North America, Volumes I and II. John Wiley and Sons, New York, New York.

Hickman, J. C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press.

Ingles, L. G., 1965. Mammals of the Pacific States. Stanford University Press, Stanford, California.

Jameson, jr., E. W. and H. J. Peters. California Mammals. University of California Press, Berkeley, Los Angeles, London. 403 pp.

Lackey, J. 1996. Chaetodipus fallax. Mammalian Species No. 517. American Society of Mammalogists.

McKernan, R. L., 1997. The Status and Known Distribution of the San Bernardino Kangaroo Rat (Dipodomys merriami parvus): Field surveys conducted between 1987 and 1996. Report prepared for the U.S. Fish and Wildlife Service, Carlsbad Field Office.

Meserve, P. 1976. Food relationships of a rodent fauna in a California coastal sage scrub community. Journal of Mammalogy, 57: 300-319.

Munz, P.A., 1974. A Flora of Southern California. University of California Press, Berkeley, California.

Peterson, R. 1990 *A Field Guide to Western Birds*. Houghton Mifflin Company, Boston, MA.

Rey-Vizgirdas, E.M., 1994. Status and Conservation of the Endangered Slender-horned spineflower (*Dodecahema leptoceras*)

Riverside County Integrated Project (RCIP) 2003 Final Multiple Species Habitat Conservation Plan (MSHCP). Riverside, CA.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens 2009 *A Manual of California Vegetation, 2nd edition*. California Native Plant Society Press, Sacramento, CA.

U.S. Fish and Wildlife Service, 1998b. Endangered and Threatened Wildlife and Plants; Final Rule to List the San Bernardino Kangaroo Rat as Endangered, Vol. 63, No. 185, pp. 51005 – 51017.

U.S Fish and Wildlife Service, 2014. Endangered and Threatened Wildlife and Plants. https://www.fws.gov/endangered/species/us-species.html; Accessed June 2015

Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed Novenber 2015.

Wheeler, J., 1988. Recent Ecological Investigations and Present Status of the Endangered Santa Ana River Wooly-Star, Eriastrum densifolium spp. sanctorum (Milliken) Mason. Crossosoma, Vol 14, No. 3. pp. 1-17.

Williams, D. F., 1986. Mammalian Species of Special Concern in California. Wildlife Management Division Administrative Report 86-1. Prepared for The Resources Agency, California Department of Fish and Game.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer and M. White, 1990. California's Wildlife, Volume III Mammals, The Resources Agency, Department of Fish and Game, Sacramento, California.

Zembal, R. and K.J. Kramer, 1984. The known distribution and unknown future of Santa Ana River woolly-star (Eriastrum). Crossosoma, Vol. 10, No. 5.

FIGURES

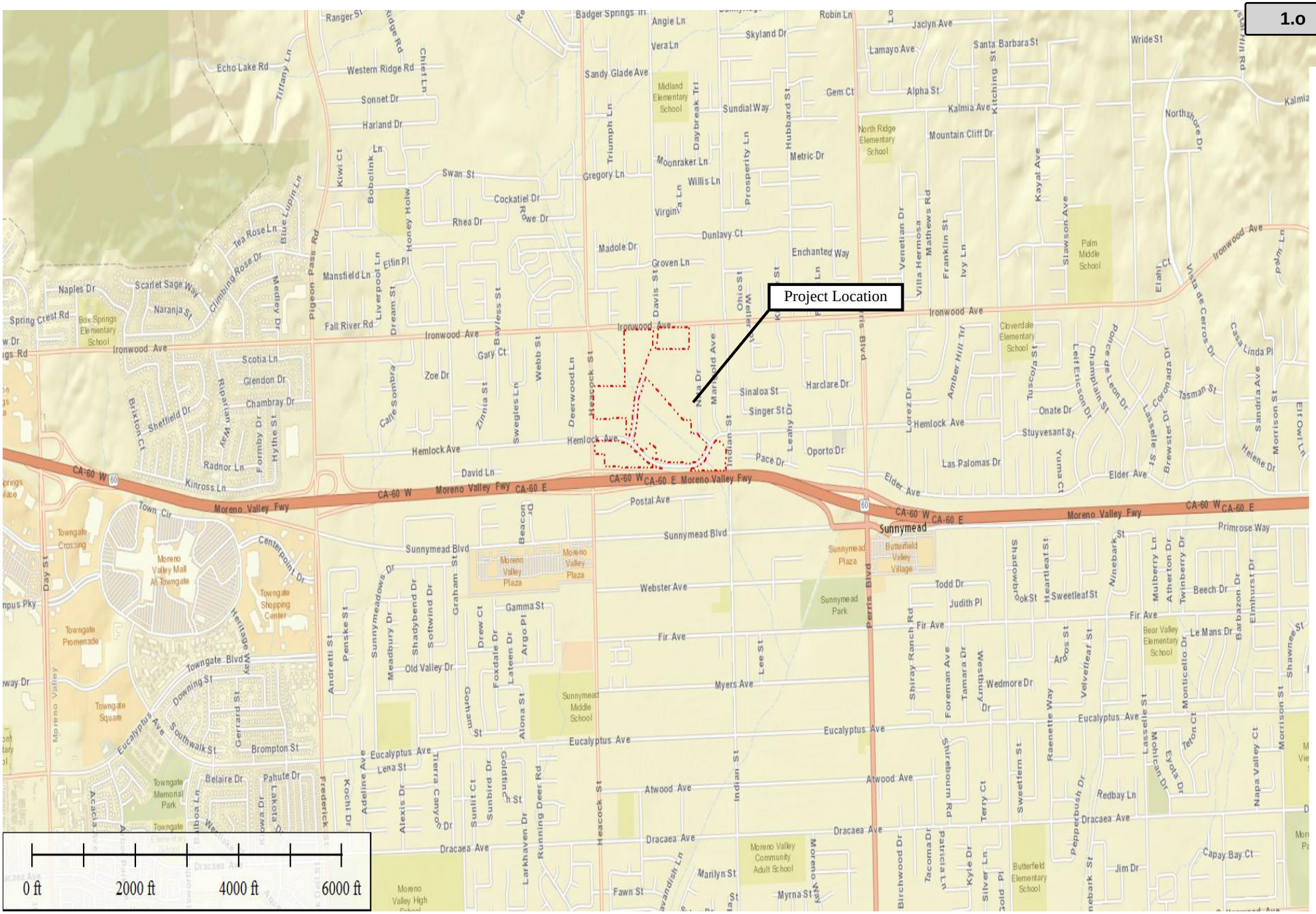


Figure 1

Location Map
Moreno Valley Festival
City of Moreno Valley, Riverside County, CA

Legend

Property Boundary

N

Hernandez Environmental Services

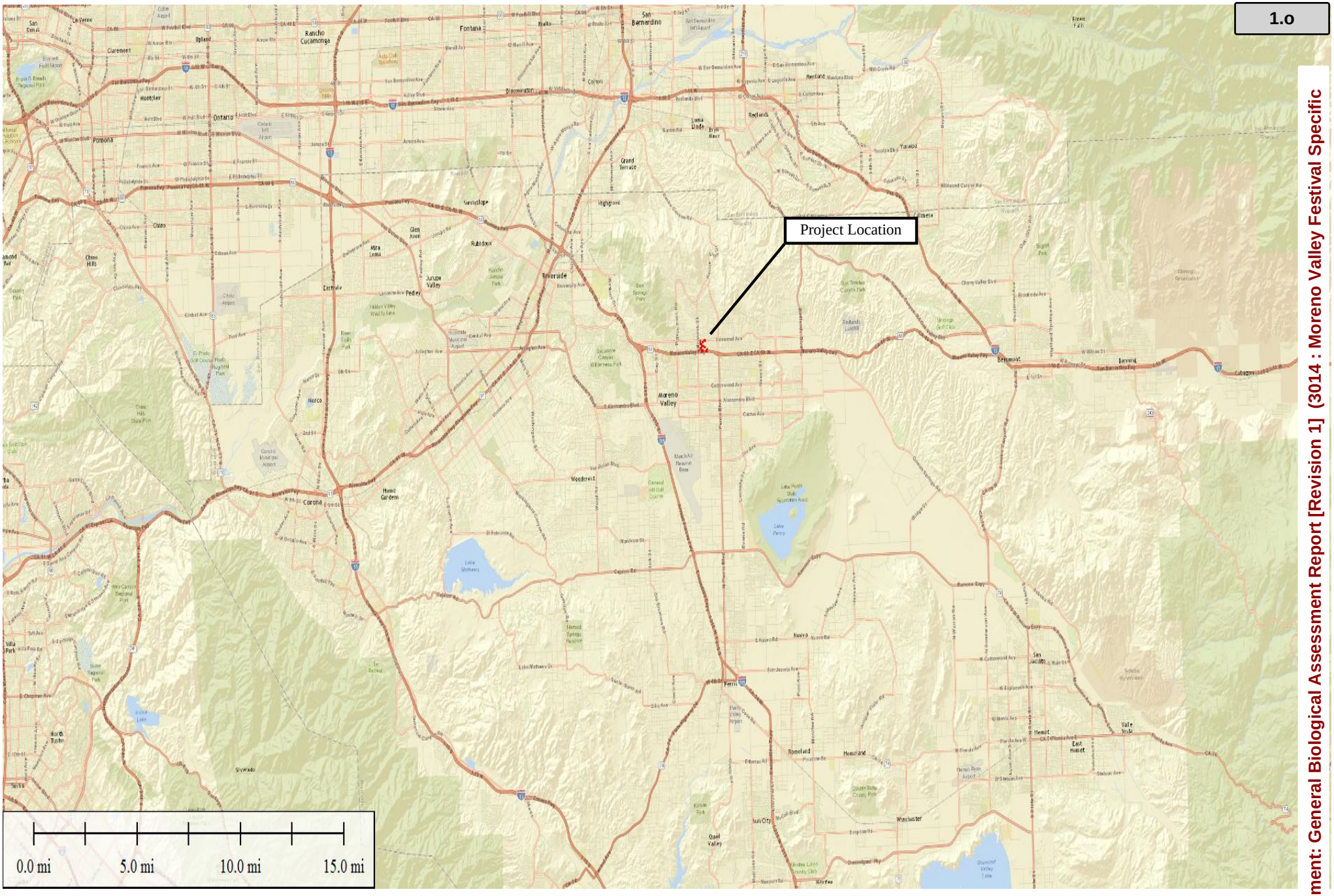


Figure 2

Vicinity Map
Moreno Valley Festival
City of Moreno Valley, Riverside County, CA

Legend

Property Boundary

N

Hernandez Environmen Services

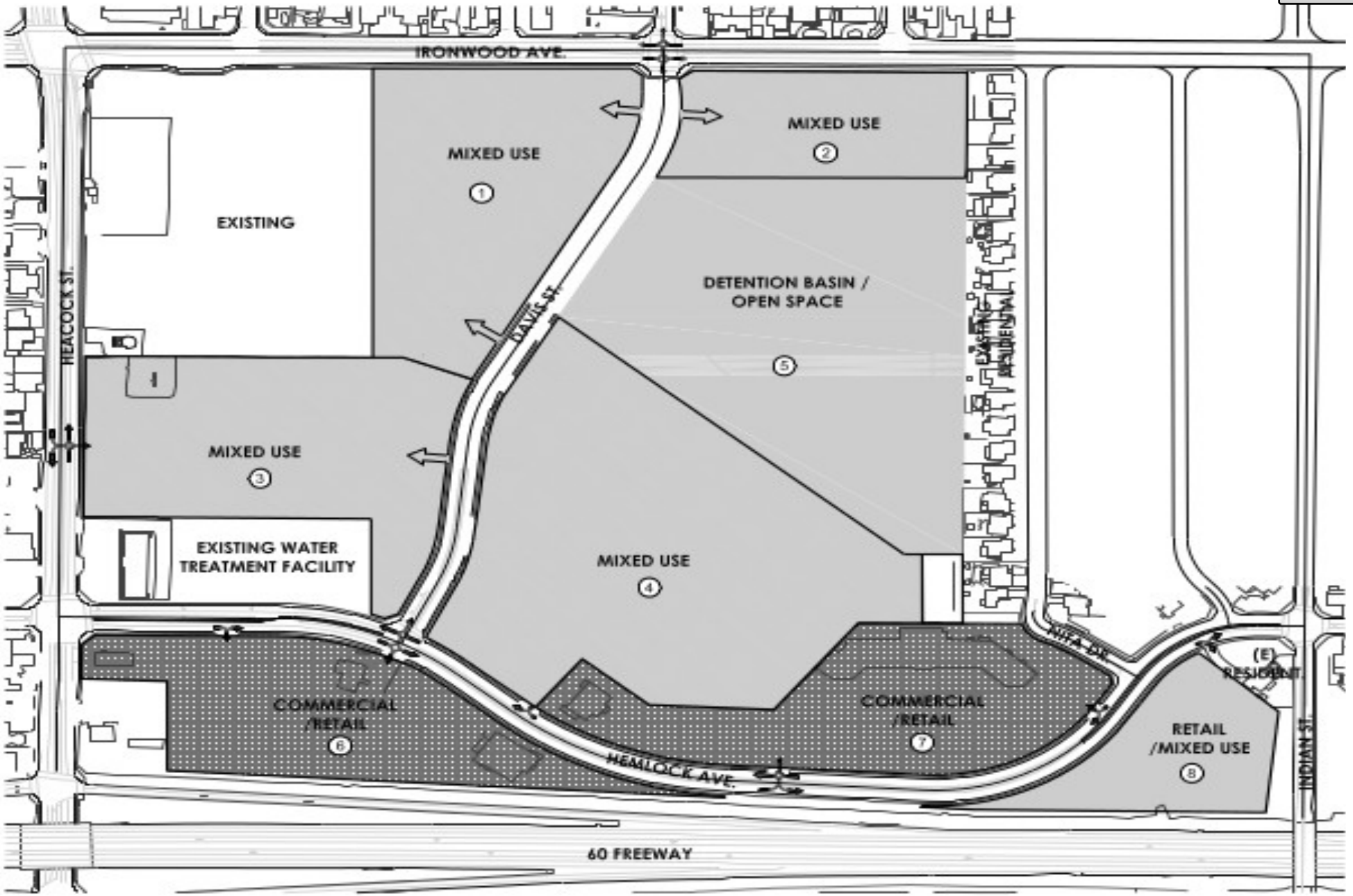


Figure 3

Project Plans
Moreno Valley Festival
City of Moreno Valley, Riverside County, CA

N

Hernandez Environmen Services

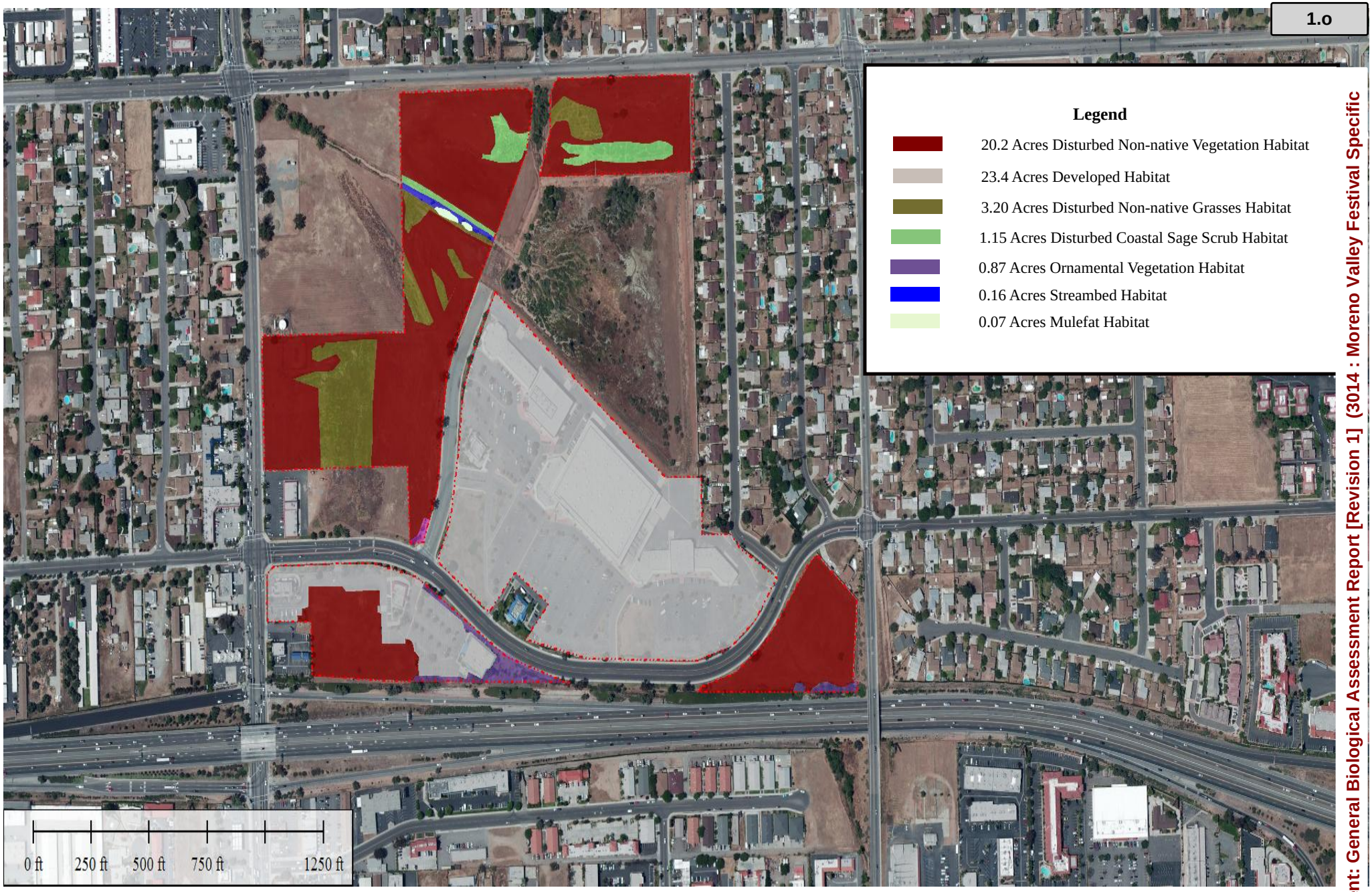


Figure 4

Habitat Map
Moreno Valley Festival
City of Moreno Valley, Riverside County, CA

Hernandez Environmen Services

Appendix A Species List

Plant List

Acmispon strigosus	Lotus
Amaranthus sp.	Pigweed
Ambrosia psilostachya	Western ragweed
Avena barbata	Oats
Baccharis salicifolia	Mulefat
Brassica nigra	Black mustard
Brassica tournefortii	Common mustard
Bromus diandrus	Ripgut brome
Bromus hordeaceus	soft chess
Bromus madritensis	Foxtail
Chamaesyce prostata	Prostate spurge
Centaurea melitensis	Tacalote
Cirsium vulgare	Bull thistle
Convolvulus arvensis	Field bindweed
Cucurbita foetidissima	Gord
Datura stramonium	Jimson weed
Deinandra fasciculata	Tarweed
Encelia farinosa	Brittlebush
Erigeron canadensis	Horseweed
Eriogonum fasciculatum	California buckwheat
Erodium cicutarium	Filaree
Eucalyptus sp.	Eucalyptus
Helianthus petiolaris	Sunflower
Hirschfeldia incana	Mustard

Hordeum murinum	Foxtail barley
Hordeum vulgare	Barley
Isocoma menziesii	Goldenbush
Malva parviflora	Cheeseweed
Marrubium vulgare	Horehound
Nerium oleander	Oleander
Nicotina glauca	Tree tabacco
Ricinus communis	Castor bean
Rumex crispus	Curly dock
Salix laevigata	Red Willow
Salix lasiolepsis	Arroyo Willow
Salsola tragus	Russian Thistle
Salvia apiana	White sage
Salvia mellifera	Black sage
Sambucus mexicana	Mexican elderberry
Schinus molle	Peruvian pepper tree
Tribulus terrestris	Puncture vine
Trichostema lanceolatum	Vinegar weed
Washingtonia robusta	Mexican Fan palm

Animal List

Aphelocoma californiaca	Western scrub jay
Buteo jamaicensis	Red-tailed Hawk
Calypte anna	Anna's hummingbird
Canis latrans	Coyote
Corvus corax	Raven
Corvus brachyrhynchos	Crow
Hirundo rustica	Barn swallow
Mimus polyglottos	Mocking bird

Passer domesticus	House Sparrow
Sayornis nigricans	Black phoebe
Sceloporus occidentalis	Western fence lizard
Streptopelia decaocto	Euroasian collard dove
Sylvilagus audubonii	Desert cottontail
Thomomys bottae	Botha's pocket gopher
Tyrannus verticalis	Western kingbird
Zenaida macroura	Mourning dove

Appendix A Species List

Plant List

Acmispon strigosus	Lotus
Amaranthus sp.	Pigweed
Ambrosia psilostachya	Western ragweed
Avena barbata	Oats
Baccharis salicifolia	Mulefat
Brassica nigra	Black mustard
Brassica tournefortii	Common mustard
Bromus diandrus	Ripgut brome
Bromus hordeaceus	soft chess
Bromus madritensis	Foxtail
Chamaesyce prostata	Prostate spurge
Centaurea melitensis	Tacalote
Cirsium vulgare	Bull thistle
Convolvulus arvensis	Field bindweed
Cucurbita foetidissima	Gord
Datura stramonium	Jimson weed
Deinandra fasciculata	Tarweed
Encelia farinosa	Brittlebush
Erigeron canadensis	Horseweed
Eriogonum fasciculatum	California buckwheat
Erodium cicutarium	Filaree
Eucalyptus sp.	Eucalyptus
Helianthus petiolaris	Sunflower
Hirschfeldia incana	Mustard

Hordeum murinum	Foxtail barley
Hordeum vulgare	Barley
Isocoma menziesii	Goldenbush
Malva parviflora	Cheeseweed
Marrubium vulgare	Horehound
Nerium oleander	Oleander
Nicotina glauca	Tree tabacco
Ricinus communis	Castor bean
Rumex crispus	Curly dock
Salix laevigata	Red Willow
Salix lasiolepsis	Arroyo Willow
Salsola tragus	Russian Thistle
Salvia apiana	White sage
Salvia mellifera	Black sage
Sambucus mexicana	Mexican elderberry
Schinus molle	Peruvian pepper tree
Tribulus terrestris	Puncture vine
Trichostema lanceolatum	Vinegar weed
Washingtonia robusta	Mexican Fan palm

Animal List

Aphelocoma californiaca	Western scrub jay
Buteo jamaicensis	Red-tailed Hawk
Calypte anna	Anna's hummingbird
Canis latrans	Coyote
Corvus corax	Raven
Corvus brachyrhynchos	Crow
Hirundo rustica	Barn swallow
Mimus polyglottos	Mocking bird

Passer domesticus	House Sparrow
Sayornis nigricans	Black phoebe
Sceloporus occidentalis	Western fence lizard
Streptopelia decaocto	Euroasian collard dove
Sylvilagus audubonii	Desert cottontail
Thomomys bottae	Botha's pocket gopher
Tyrannus verticalis	Western kingbird
Zenaida macroura	Mourning dove

APPENDIX B

Plants

Scientific Name	Common Name	Federal Listing	State Listing	CNPS Listing	Other Status	Habitat	Potential for Presence
Abronia villosa var. aurita	chaparral sand-verbena	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Sandy places in coastal-sage scrub, chaparral; Elevation: < 1600 m. Flowering Time: Mar--Aug	**Habitat too disturbed, disked, and no sandy areas. Not present.**
Allium munzii	Munz's onion	Endangered	Threatened	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Grassy openings in coastal-sage scrub; Elevation: 300--900 m. Flowering Time: Apr--May	**Habitat too disturbed and disked. Not present.**
Ambrosia pumila	San Diego ambrosia	Endangered	None	1B.1		Disturbed sites; Elevation: 50--600 m. Flowering Time:Apr--Jul	**Not inside narrow endemic plant survey area. Not present.**
Arenaria paludicola	marsh sandwort	Endangered	Endangered	1B.1	SB_SBBG-Santa Barbara Botanic Garden	Wet meadows, marshes; Elevation: < 300 m. Flowering Time: Late spring—summertime	**Project area too disturbed. Basin is maintained. Not present.**
Astragalus hornii var. hornii	Horn's milk-vetch	None	None	1B.1	BLM_S-Sensitive	Salty flats, lake shores; Elevation: 60--300 m. Flowering Time: May--Sep	**No habitat present. Not present.**
Astragalus pachypus var. jaegeri	Jaeger's milk-vetch	None	None	1B.1	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Rocky or sandy areas; Elevation: 450--1200 m. Flowering Time: Dec--Jun	**Habitat too disturbed and disked Not present.**
Atriplex coronata var. notatior	San Jacinto Valley crownscale	Endangered	None	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Alkaline flats; Elevation: 400--500 m. Flowering Time: Apr--Aug	**No habitat present. Not present.**

Plants

Atriplex parishii	Parish's brittlescale	None	None	1B.1	USFS_S-Sensitive	Alkaline or clay soils; Elevation: < 470 m. Flowering Time: Jun--Oct	**No habitat present. Not present.**
Atriplex serenana var. davidsonii	Davidson's saltscale	None	None	1B.2		Bluffs; Elevation: < 200 m. Flowering Time: Apr--Oct	**No habitat present. Not present.**
Berberis nevinii	Nevin's barberry	Endangered	Endangered	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden	Sandy to gravelly soils, washes, chaparral; Elevation: < 650 m. Flowering Time: Mar--May	**No habitat present. Not present.**
Brodiaea filifolia	thread-leaved brodiaea	Threatened	Endangered	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Grassland, vernal pools; Elevation: 25--860 m. Flowering Time: Mar--Jun	**Project area too disturbed. Basin is maintained. Not present.**
California macrophylla	round-leaved filaree	None	None	1B.1	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden	Open sites, grassland, scrub; Elevation: < 1200 m. Flowering Time: Mar--Jul	**Habitat too disturbed and disked Not present.**
Calochortus plummerae	Plummer's mariposa-lily	None	None	4.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Dry, rocky chaparral, yellow-pine forest; Elevation: < 1700 m. Flowering Time: May--Jul	**No habitat present. Not present.**

Canyon Live Oak Ravine Forest	Canyon Live Oak Ravine Forest	None	None				**Not Present.**
Carex comosa	bristly sedge	None	None	2B.1		Wet places; Elevation: < 400 m. Flowering Time: Jul--Sep	**No habitat present. Not present.**
Caulanthus simulans	Payson's jewelflower	None	None	4.2	USFS_S-Sensitive	Chaparral, scrub, pinyon/juniper woodland; Elevation: 400--2200 m. Flowering Time: Mar--Jun	**Habitat too disturbed and disked Not present.**
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Endangered	Endangered	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Coastal salt marsh; Elevation: < 10 m. Flowering Time: May--Oct	**No habitat present. Not present.**
Chorizanthe parryi var. parryi	Parry's spineflower	None	None	1B.1	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Sand; Elevation: 90--800 m. Flowering Time: May--Jun	**No habitat present. Not present.**
Chorizanthe polygonoides var. longispina	long-spined spineflower	None	None	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden	Sand; Elevation: 30--1500 m. Flowering Time: Apr--Jun	**No habitat present. Not present.**
Chorizanthe xanti var. leucotheca	white-bracted spineflower	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Sand or gravel; Elevation: 400--1300 m. Flowering Time: Apr--Jun	**No habitat present. Not present.**

Cuscuta obtusiflora var. glandulosa	Peruvian dodder	None	None	2B.2		On herbs including Alternanthera, Dalea, Lythrum, Polygonum, Xanthium; Elevation: +- < 500 m. Time: Jul--Oct	**No habitat present. Not present.**
Dodecahema leptoceras	slender-horned spineflower	Endangered	Endangered	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Sand or gravel; Elevation: 200--700 m. Flowering Time: May--Jun	**No habitat present. Not present.**
Eriastrum densifolium ssp. sanctorum	Santa Ana River woollystar	Endangered	Endangered	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Washes, floodplains, dry riverbeds; Elevation: < 500 m. Flowering Time: May--Sep	**No habitat present. Not present.**
Galium californicum ssp. primum	Alvin Meadow bedstraw	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Shade, lower elevations in Jeffrey-, Coulter-pine forests; Elevation: 1350--1700 m. Flowering Time: Mar--Jul	**No habitat present. Not present.**
Harpagonella palmeri	Palmer's grapplinghook	None	None	4.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Dry, semi-barren sites in chaparral, coastal scrub, grassland; Elevation: < 1000m. Bioregional . Flowering Time: Mar--Apr	**Habitat too disturbed and disked Not present.**
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	None	None	1A		Marshes; Elevation: < 500 m. Flowering Time: Aug--Oct	**No habitat present. Not present.**
Horkelia cuneata var. puberula	mesa horkelia	None	None	1B.1	USFS_S-Sensitive	Dry, sandy, coastal chaparral; Elevation: 70--870 m. Flowering Time: Mar--Jul	**Habitat too disturbed and disked Not present.**
Imperata brevifolia	California satintail	None	None	2B.1	SB_SBBG-Santa Barbara Botanic Garden | USFS_S-Sensitive	Wet springs, meadows, streambanks, floodplains; Elevation: < 500 m. Bioregional Distribution: Flowering Time: Sep--May	**Site is too high in elevation for this species. Not present.**

Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None	None	1B.1	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden	Saline places, vernal pools; Elevation: < 1000 m.Flowering Time: Apr--May	**No habitat present. Not present.**
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	None	None	4.3		Chaparral, coastal sage scrub, bollms Jan-July.	**Habitat too disturbed and disked Not present.**
Lycium parishii	Parish's desert-thorn	None	None	2B.3		Sandy to rocky slopes, canyons; Elevation: < 1000 m. Flowering Time: Mar--Apr	**No habitat present. Not present.**
Monardella macrantha ssp. hallii	Dicots	None	None	1B.3	SB_RSABG-Rancho Santa Ana Botanic Garden | USFS_S-Sensitive	Chaparral, woodland; Elevation: 600--2000 m. Flowering Time: May--Aug	**No habitat present. Not present.**
Myosurus minimus ssp. apus	Dicots	None	None	3.1		Vernal pools, flowers May-June.	**No habitat present. Not present.**
Nama stenocarpum	mud nama	None	None	2B.2		Intermittently wet areas; Elevation: < 810 m. Flowering Time: Mar--Oct	**No habitat present. Not present.**
Nasturtium gambelii	Gambel's water cress	Endangered	Threatened	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden	Marshes, streambanks, lake margins; Elevation: < 350 m. Flowering Time: May--Aug	**No habitat present. Not present.**

Navarretia fossalis	spreading navarretia	Threatened	None	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Vernal pools, ditches; Elevation: 30--1300 m. Flowering Time: Apr--Jun	**No habitat present. Not present.**
Ribes divaricatum var. parishii	Parish's gooseberry	None	None	1A		Moist woodland; Elevation: 60--310 m. Flowering Time: Mar--Apr Note: Possibly extinct.	**No habitat present. Not present.**
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub	None	None				**Not Present.**
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	None	Rare	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden | SB_SBBG-Santa Barbara Botanic Garden | USFS_S-Sensitive	Chaparral, woodland, open conifer forest; Elevation: 1000--2200 m. Flowering Time: Jun--Aug	**No habitat present. Not present.**
Sidalcea neomexicana	Salt Spring checkerbloom	None	None	2B.2	USFS_S-Sensitive	Alkaline springs, marshes; Elevation: generally < 1500 m. Flowering Time: Apr--Jun	**No habitat present. Not present.**
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	None	None				**Not Present.**
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	None	None				**Not Present.**

Southern Riparian Forest	Southern Riparian Forest	None	None				**Not Present.**
Southern Riparian Scrub	Southern Riparian Scrub	None	None				**Not Present.**
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	None	None				**Not Present.**
Southern Willow Scrub	Southern Willow Scrub	None	None				**Not Present.**
Sphenopholis obtusata	prairie wedge grass	None	None	2B.2		Wet meadows, streambanks, ponds; Elevation: 240--2870 m. Flowering Time: Apr--Jun	**No habitat present. Not present.**
Streptanthus campestris	southern jewelflower	None	None	1B.3	BLM_S-Sensitive | USFS_S-Sensitive	Open, rocky conifer forest, chaparral, woodland; Elevation: 900--2300 m. Flowering Time: May--Jun	**No habitat present. Not present.**
Symphyotrichum defoliatum	San Bernardino aster	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Grassland, disturbed places; Elevation: < 2050 m. Flowering Time: Jul--Nov	**Potentially present.**
Tortula californica	California screw moss	None	None	1B.2	BLM_S-Sensitive	sandy, soil, chenopod scrub, and valley foothill grasslands.	**No habitat present. Not present.**
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	None	None	2B.1		Moist places, drying riverbeds; Elevation: < 500 m. Flowering Time: May--Sep	**Site is too high in elevation for this species. Not present.**

Animals

Scientific Name	Common Name	Federal Listing	State Listing	Other Status	Habitat	Potential for Presence
Accipiter cooperii	Cooper's hawk	None	None	CDFW_WL-Watch List | IUCN_LC-Least Concern	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	Nesting habitat present in Eucalyptus trees on and adjacent to project area.
Agelaius tricolor	tricolored blackbird	None	Endangered	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Nests in freshwater marsh habitat wit Typha sp. And willows being dominant.	**No habitat for this species. Not present.**
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	None	None	CDFW_WL-Watch List	on steep, dry, rocky hillsides with plenty of grasses and a scattering of shrubs and small trees, such as sagebrush or scrub oaks. Recently burned areas can provide good, open habitat. The birds tend to avoid areas of dense shrubs.	**No habitat for this species. Not present.**

Animals

Anniella pulchra pulchra	silvery legless lizard	None	None	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Occurs in moist warm loose soil with plant cover. Moisture is essential. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Often can be found under surface objects such as rocks, boards, driftwood, and logs.	**No habitat for this species. Not present.**
Antrozous pallidus	pallid bat	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	The pallid bat is usually found in rocky, mountainous areas and near water. They are also found over more open, sparsely vegetated grasslands, and they seem to prefer to forage in the open.	**No habitat for this species. Not present.**

Aquila chrysaetos	golden eagle	None	None	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | CDFW_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Golden Eagles live in open and semiopen country featuring native vegetation across most of the Northern Hemisphere. They avoid developed areas and uninterrupted stretches of forest. They are found primarily in mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs. Golden Eagles nest on cliffs and steep escarpments in grassland, chapparal, shrubland, forest, and other vegetated areas.	**No habitat for this species. Not present.**
Artemisiospiza belli belli	Bell's sage sparrow	None	None	CDFW_WL-Watch List | USFWS_BCC-Birds of Conservation Concern	Nests in coastal sage scrub and chaparral.	**Some very disturbed coastal sage scrub is present. Potentially present.**
Asio otus	long-eared owl	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	require a combination of grassland or other open country for foraging, and dense tall shrubs or trees for nesting and roosting. Pine stands and windbreaks or shelterbelts are favored winter roost habitat.	**No habitat for this species. Not present.**

Aspidoscelis hyperythra	orangethroat whiptail	None	None	CDFW_SSC -Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	This species inhabits low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitat	**Some very disturbed coastal sage scrub is present. Potentially present.**
Aspidoscelis tigris stejnegeri	coastal whiptail	None	None		Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage - chaparral, woodland, and riparian areas.	**Some habitat may be present. Potentially present.**
Athene cunicularia	burrowing owl	None	None	BLM_S-Sensitive | CDFW_SSC -Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Lives in dry, open areas with no trees and short grass.	**Surveys for this species were conducted on no burrowing owl were found. Not present.**
Buteo regalis	ferruginous hawk	None	None	CDFW_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Open country, primarily prairies, plain and badlands, breeding in trees near streams or on steep slopes, sometimes on mounds in open desert.	**No nesting habitat for this species. Not present.**

Animals

Buteo swainsoni	Swainson's hawk	None	Threatened	BLM_S-Sensitive | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Swainson's Hawks favor open habitats for foraging.	**No nesting habitat for this species. Not present.**
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	None	None	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Coastal sage scrub with thickets of Opuntia sp.	**No nesting habitat for this species. Not present.**
Catostomus santaanae	Santa Ana sucker	Threatened	None	AFS_TH-Threatened | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable	Flowing perennial or intermittent southern California streams.	**No habitat for this species. Not present.**
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None	None	CDFW_SSC-Species of Special Concern	shrublands that vary from sparse desert shrublands to dense coastal scrub. Tends to be more abundant where rocks or shrubs provide cover. Lives in a variety of habitats: desert slopes, agave, rocky areas, coastal sage scrub, etc.	**No habitat for this species. Not present.**

					dry shrublands, desert, and near-desert areas. They are found among scattered rocks and boulders or on talus slopes. Preferred habitat is often on south-facing hillsides at elevations from sea level to over 2,000 meters. Rosy boas are rarely found far from rock cover. They seem to prefer habitats near free water, such as canyon or desert streams, but are not restricted to such areas.	
Charina trivirgata	rosy boa	None	None	IUCN_LC-Least Concern | USFS_S-Sensitive		**No habitat for this species. Not present.**
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Endangered	BLM_S-Sensitive | NABCI_RWL-Red Watch List | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Breeding habitat primarily consists of large blocks, or contiguous areas, of riparian habitat, particularly cottonwood–willow riparian woodlands.	**No habitat for this species. Not present.**
Crotalus ruber	red-diamond rattlesnake	None	None	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Coastal sage scrub or chaparral with granite boulders.	**Some habitat may be present. Potentially present.**
Diadophis punctatus modestus	San Bernardino ringneck snake	None	None	USFS_S-Sensitive	Prefers moist habitats, including wet meadows, rocky hillsides, gardens, farmland, grassland, chaparral, mixed coniferous forests, woodlands.	**No habitat for this species. Not present.**

Animals

Dipodomys stephensi	Stephens' kangaroo rat	Endangered	Threatened	IUCN_EN-Endangered	Typical habitat includes sparsely vegetated areas (perennial cover less than 30%) with loose, friable, well-drained soil (generally at least 0.5 m deep) and flat or gently rolling terrain.	**No habitat for this species. Not present.**
Elanus leucurus	white-tailed kite	None	None	BLM_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern	Commonly found in savanna, open woodlands, marshes, desert grassland, partially cleared lands, and cultivated fields.	**No nesting habitat for this species. Not present.**
Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Endangered	NABCI_RWL-Red Watch List	Riparian forests.	**No nesting habitat for this species. Not present.**
Emys marmorata	western pond turtle	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive	Found in ponds, lakes, streams, large rivers, slow-moving sloughs, and quiet waters. The turtles prefer aquatic habitats with exposed areas for basking, with aquatic vegetation, such as algae and other water plants, but they also live in clear waters, especially where there is cover such as boulders or fallen trees in the waterThe western pond turtle also spends significant amounts of time in upland terrestrial habitats and has been found more than one kilometre from water.	**No nesting habitat for this species. Not present.**

Animals

Eremophila alpestris actia	California horned lark	None	None	CDFW_WL-Watch List | IUCN_LC-Least Concern	Open areas dominated by sparse low herbaceous vegetation or widely scattered low shrubs. Nests in hollow on ground often next to grass tuft or clod of earth or manure.	**Habitat for this species is present. Potentially present.**
Eumops perotis californicus	western mastiff bat	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | WBWG_H-High Priority	present only where there are significant rock features offering suitable roosting habitat. It is found in a variety of habitats, from desert scrub to chaparral to oak woodland and into the ponderosa pine belt.	**No habitat for this species. Not present.**
Euphydryas editha quino	quino checkerspot butterfly	Endangered	None	XERCES_CI-Critically Imperiled	The larvae may use either Plantago erecta or Castilleja exserta, both of which may be common in meadows and upland sage scrub/chapparal habitat.	**No habitat for this species. Not present.**
Gila orcuttii	arroyo chub	None	None	AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	southern California coastal drainages.	**No habitat for this species. Not present.**

Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	generally found close to water	**No habitat for this species. Not present.**
Icteria virens	yellow-breasted chat	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forests.	**No habitat for this species. Not present.**
Lampropeltis zonata (parvirubra)	California mountain kingsnake (San Bernardino population)	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Found in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub. Wooded areas near a stream with rock outcrops, talus or rotting logs that are exposed to the sun are good places to find this snake.	**No habitat for this species. Not present.**

Lanius ludovicianus	loggerhead shrike	None	None	CDFW_SSC -Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Open country with scattered shrubs and trees is the typical habitat of Loggerhead Shrike, but the species can also be found in more heavily wooded habitats with large openings and in very short habitats with few or no trees.	**No habitat for this species. Not present.**
Lasiurus xanthinus	western yellow bat	None	None	CDFW_SSC -Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	This species occupies a range of habitats of extremely arid areas to dry areas. It inhabits savannas, secluded woodlands, regions dominated by pasture or croplands, and even tolerates residential areas. It is insectivorous. It often roosts in trees.	**Very limited roosting habitat for this species. Potentially present.**
Leptonycteris yerbabuenae	lesser long-nosed bat	Endangered	None	IUCN_VU-Vulnerable | WBWG_H-High Priority	This bat roosts in caves and mines, often in colonies of several thousand.	**No habitat for this species. Not present.**
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None	None	CDFW_SSC -Species of Special Concern	Chaparral and coastal sage scrub.	**Very limited habitat for this species. Potentially present.**
Neotoma lepida intermedia	San Diego desert woodrat	None	None	CDFW_SSC -Species of Special Concern	Chaparral and coastal sage scrub.	**No habitat for this species. Not present.**

Animals

Nyctinomops femorosaccus	pocketed free-tailed bat	None	None	CDFW_SSC -Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Roosts in caves, rock crevices in cliff faces, and man-made structures.	**No habitat for this species. Not present.**
Onychomys torridus ramona	southern grasshopper mouse	None	None	CDFW_SSC -Species of Special Concern	Believed to inhabit flat, sandy, valley floor habitats	**No habitat for this species. Not present.**
Perognathus longimembris brevinasus	Los Angeles pocket mouse	None	None	CDFW_SSC -Species of Special Concern	includes lower elevation grassland, alluvial sage scrub, and coastal sage scrub.	**No habitat for this species. Not present.**
Phrynosoma blainvillii	coast horned lizard	None	None	BLM_S-Sensitive | CDFW_SSC -Species of Special Concern | IUCN_LC-Least Concern	Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills.	**Very limited habitat for this species. Potentially present.**
Plegadis chihi	white-faced ibis	None	None	CDFW_WL-Watch List | IUCN_LC-Least Concern	Found in marsh habitat.	**No habitat for this species. Not present.**

Animals

Polioptila californica californica	coastal California gnatcatcher	Threatened	None	CDFW_SSC -Species of Special Concern | NABCI_YWL-Yellow Watch List	Coastal sage scrub.	**No habitat for this species. Not present.**
Rana muscosa	southern mountain yellow-legged frog	Endangered	Endangered	CDFW_SSC -Species of Special Concern | IUCN_EN-Endangered | USFS_S-Sensitive	Rocky stream courses in southern California perennial or intermittent streams.	**No habitat for this species. Not present.**
Rhaphiomidas terminatus abdominalis	Delhi Sands flower-loving fly	Endangered	None		Habitat consists of Delhi sands.	**No habitat for this species. Not present.**
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	None	None	AFS_TH-Threatened | CDFW_SSC -Species of Special Concern | USFS_S-Sensitive	Cobble and rock southern California intermittent and perennial streams.	**No habitat for this species. Not present.**
Setophaga petechia	yellow warbler	None	None	CDFW_SSC -Species of Special Concern | USFWS_BCC-Birds of Conservation Concern	Riparian scrub and thickets.	**No habitat for this species. Not present.**

Spea hammondii	western spadefoot	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Upland coastal sage scrub and needs vernal or seasonal pools to breed.	**No habitat for this species. Not present.**
Spinus lawrencei	Lawrence's goldfinch	None	None	IUCN_LC-Least Concern | NABCI_YWL-Yellow Watch List | USFWS_BCC-Birds of Conservation Concern	Open woodlands, chaparral, and weedy fields.	**Very limited habitat for this species in the basin. Potentially present.**
Streptocephalus woottoni	Riverside fairy shrimp	Endangered	None	IUCN_EN-Endangered	Vernal pool habitat.	**No habitat for this species. Not present.**
Taxidea taxus	American badger	None	None	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Coastal sage scrub, chaparral, mountain woodlands, desert habitat.	**No habitat for this species. Not present.**

Animals

Thamnophis hammondii	two-striped garter snake	None	None	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Generally found around pools, creeks, cattle tanks, and other water sources, often in rocky areas, in oak woodland, chaparral, brushland, and coniferous forest.	**No habitat for this species. Not present.**
Vireo bellii pusillus	least Bell's vireo	Endangered	Endangered	IUCN_NT-Near Threatened | NABCI_YWL-Yellow Watch List	Riparian areas dominated by mulefat and willows.	**No habitat for this species. Not present.**

APPENDIX C

Moreno Valley Trails
Site Photographs

Hernandez Environmental Services

Disturbed non-native vegetation habitat.

Disturbed non-native grass habitat.

Moreno Valley Trails
Site Photographs

Hernandez Environmental Services

Disturbed coastal sage scrub habitat.

Stream habitat with nmulefat habitat to the center right.

Moreno Valley Trails
Site Photographs

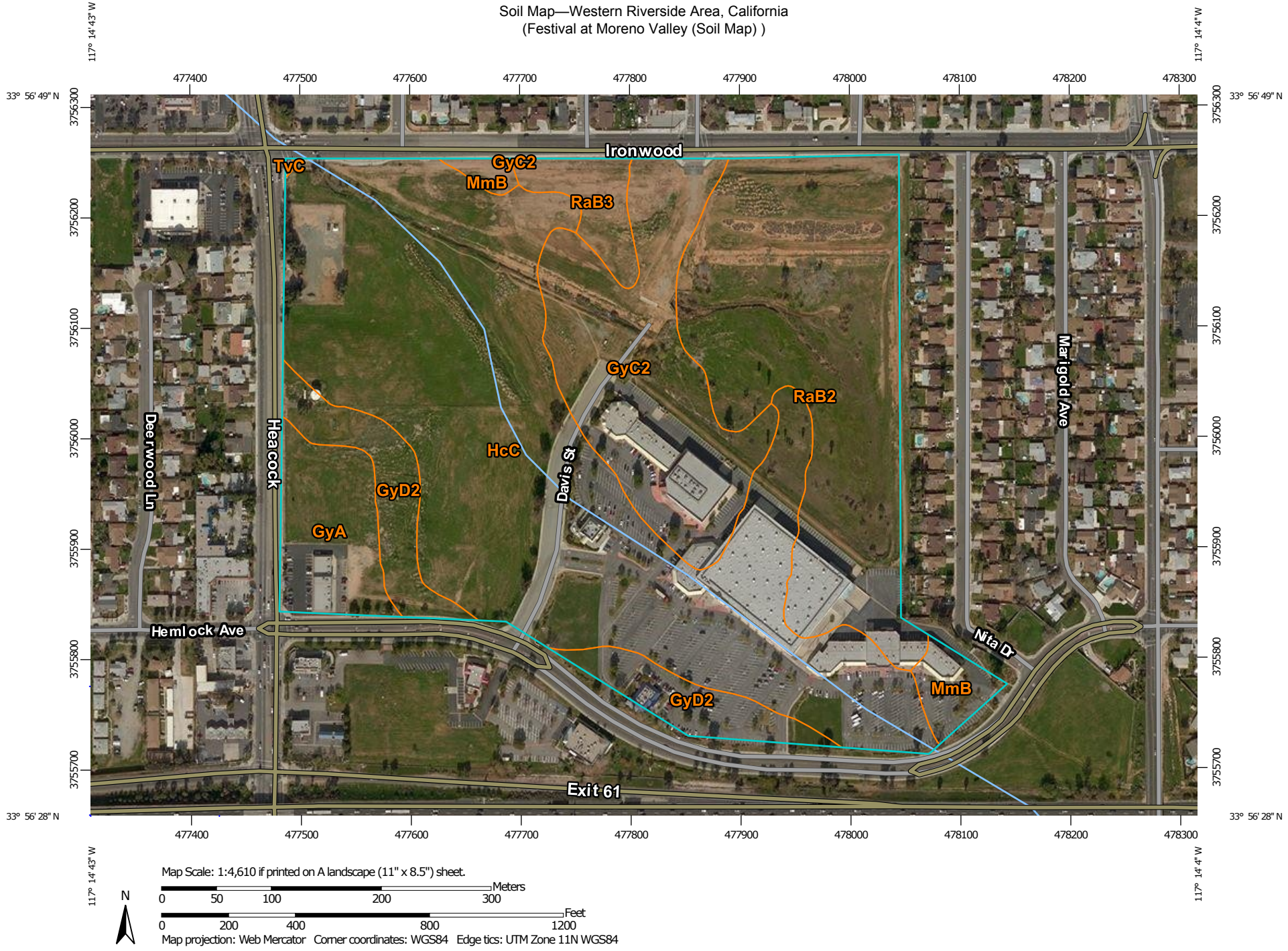
Hernandez Environmental Services

Ornamental habitat

Disturbed non-native vegetation habitat with euclyptus tree and developed portions of property.

APPENDIX D

Soil Map—Western Riverside Area, California
(Festival at Moreno Valley (Soil Map))



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 7, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

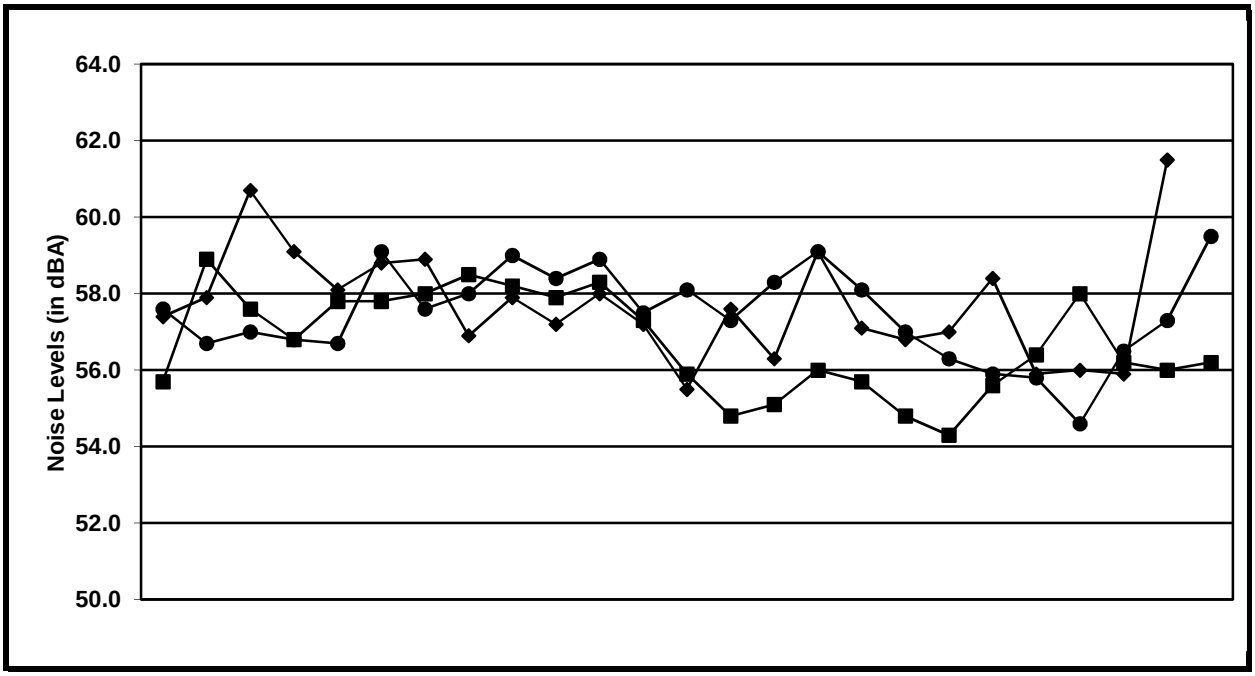
Date(s) aerial images were photographed: Jan 14, 2015—Jan 21, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Western Riverside Area, California (CA679)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
GyA	Greenfield sandy loam, 0 to 2 percent slopes	3.5	5.2%
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	9.9	14.7%
GyD2	Greenfield sandy loam, 8 to 15 percent slopes, eroded	4.6	6.9%
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	30.8	45.7%
MmB	Monserate sandy loam, 0 to 5 percent slopes	1.4	2.1%
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded	15.6	23.1%
RaB3	Ramona sandy loam, 0 to 5 percent slopes, severely eroded	1.6	2.4%
TvC	Tujunga loamy sand, channeled, 0 to 8 percent slopes	0.0	0.0%
Totals for Area of Interest		**67.4**	**100.0%**

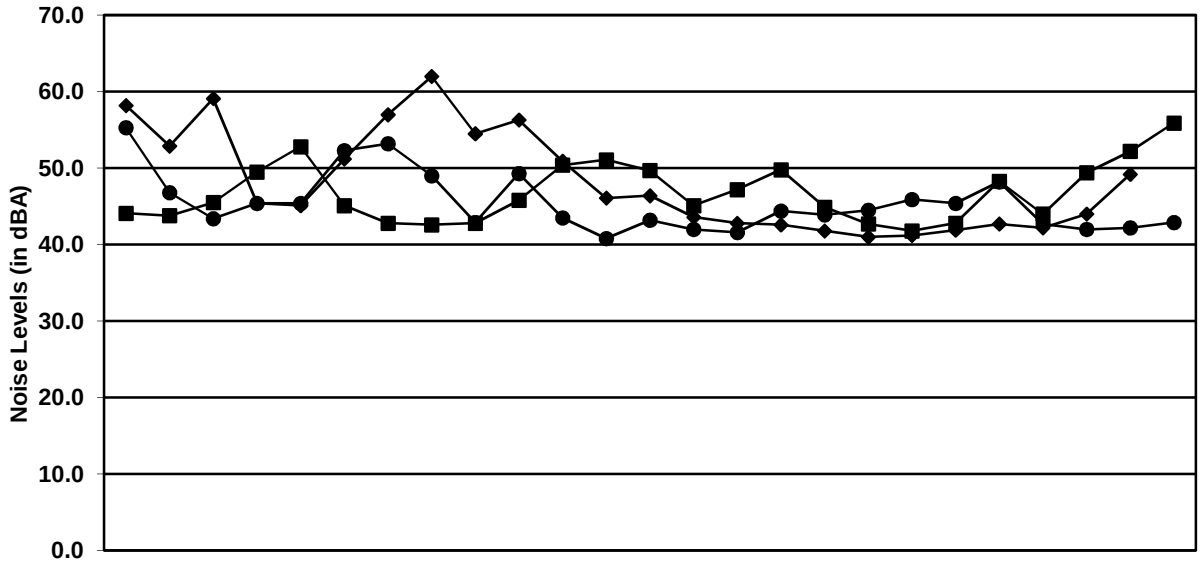
Actual Noise Levels During Measurement				Noise Measurement Results in Leq%				
1-25	26-50	51-75	76-100	L%	1-25	26-50	51-75	76-100
56.0	57.4	55.7	57.6	L_{99}	62.4	61.5	58.9	59.5
56.8	57.9	58.9	56.7		60.4	60.7	58.5	59.1
62.4	60.7	57.6	57.0	L_{90}	60.1	59.1	58.3	59.1
60.1	59.1	56.8	56.8		58.9	59.1	58.2	59.0
58.8	58.1	57.8	56.7		58.8	58.9	58.0	58.9
58.4	58.8	57.8	59.1		58.5	58.8	58.0	58.4
58.1	58.9	58.0	57.6		58.4	58.4	57.9	58.3
57.2	56.9	58.5	58.0		58.4	58.1	57.8	58.1
60.4	57.9	58.2	59.0		58.1	58.0	57.8	58.1
56.7	57.2	57.9	58.4		57.9	57.9	57.6	58.0
55.9	58.0	58.3	58.9		57.8	57.9	57.3	57.6
57.3	57.2	57.3	57.5	L_{50}	57.3	57.6	56.8	57.6
56.3	55.5	55.9	58.1		57.2	57.4	56.4	57.5
56.7	57.6	54.8	57.3		56.9	57.2	56.2	57.3
55.7	56.3	55.1	58.3		56.8	57.2	56.2	57.3
55.3	59.1	56.0	59.1		56.7	57.1	56.0	57.0
55.4	57.1	55.7	58.1		56.7	57.0	56.0	57.0
55.2	56.8	54.8	57.0		56.4	56.9	55.9	56.8
56.9	57.0	54.3	56.3		56.3	56.8	55.7	56.7
57.8	58.4	55.6	55.9	L_{25}	56.0	56.5	55.7	56.7
56.4	55.9	56.4	55.8		55.9	56.3	55.6	56.5
57.9	56.0	58.0	54.6		55.7	56.0	55.1	56.3
58.5	55.9	56.2	56.5	L_{10}	55.4	55.9	54.8	55.9
58.4	61.5	56.0	57.3		55.3	55.9	54.8	55.8
58.9	56.5	56.2	59.5		55.2	55.5	54.3	54.6



Noise Measurements
in Moreno Valley (10:15am) Davis S

Source: Blodgett/Baylosis Environmental Planning

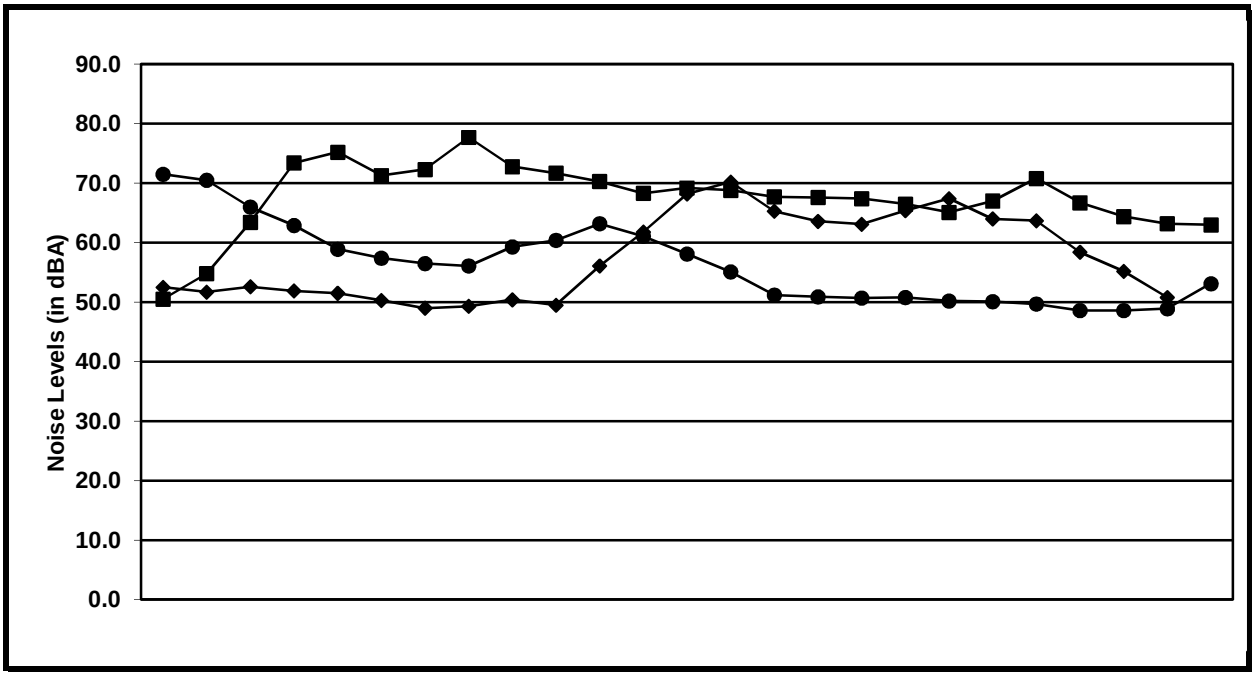
Actual Noise Levels During Measurement				Noise Measurement Results in Leq%				
1-25	26-50	51-75	76-100	L%	1-25	26-50	51-75	76-100
55.1	58.2	44.1	55.3	L_{99}	55.6	62.0	55.9	55.3
51.7	52.9	43.8	46.8		55.5	59.1	52.8	53.2
46.8	59.1	45.5	43.4	L_{90}	55.2	58.2	52.2	52.3
49.8	45.4	49.5	45.4		55.1	57.0	51.1	49.3
51.6	45.1	52.8	45.4		54.9	56.3	50.4	49.0
50.1	51.2	45.1	52.3		54.6	54.5	49.8	48.2
48.0	57.0	42.8	53.2		54.6	52.9	49.7	46.8
44.7	62.0	42.6	49.0		53.3	51.2	49.5	45.9
45.4	54.5	42.8	42.9		53.2	50.9	49.4	45.4
45.3	56.3	45.8	49.3		52.8	49.3	48.3	45.4
42.4	50.9	50.4	43.5		52.2	49.2	47.2	45.4
44.3	46.1	51.1	40.8	L_{50}	52.0	46.4	45.8	44.5
45.3	46.4	49.7	43.2		51.7	46.1	45.5	44.4
51.3	43.6	45.1	42.0		51.6	45.4	45.1	43.9
54.6	42.8	47.2	41.6		51.3	45.1	45.1	43.5
52.2	42.6	49.8	44.4		50.1	44.0	44.9	43.4
52.8	41.8	44.9	43.9		49.8	43.6	44.1	43.2
53.3	41.0	42.7	44.5		48.0	42.8	44.0	42.9
55.5	41.2	41.8	45.9		46.8	42.7	43.8	42.9
55.2	41.9	42.8	45.4	L_{25}	45.4	42.6	42.8	42.7
54.6	42.7	48.3	48.2		45.3	42.2	42.8	42.2
54.9	42.2	44.0	42.7		45.3	41.9	42.8	42.0
53.2	44.0	49.4	42.0	L_{10}	44.7	41.8	42.7	42.0
52.0	49.2	52.2	42.2		44.3	41.2	42.6	41.6
55.6	49.3	55.9	42.9		42.4	41.0	41.8	40.8



Noise Measurements in Moreno Valley Nita Dr

Source: Blodgett/Baylosis Environmental Planning

Actual Noise Levels During Measurement				Noise Measurement Results in Leq%				
1-25	26-50	51-75	76-100	L%	1-25	26-50	51-75	76-100
76.2	52.5	50.5	71.5	L_{99}	76.4	70.2	77.7	71.5
76.4	51.7	54.8	70.5		76.2	68.2	75.2	70.5
63.8	52.6	63.4	66.0	L_{90}	71.6	67.4	73.4	66.0
60.0	51.9	73.4	62.9		70.5	65.4	72.8	63.2
56.4	51.5	75.2	58.9		69.4	65.3	72.3	62.9
55.4	50.3	71.3	57.4		68.9	64.0	71.7	61.1
60.0	49.0	72.3	56.5		66.1	63.7	71.3	60.4
61.8	49.3	77.7	56.1		65.0	63.6	70.8	59.3
62.4	50.4	72.8	59.3		63.8	63.1	70.3	58.9
60.8	49.5	71.7	60.4		63.8	61.8	69.2	58.1
63.8	56.1	70.3	63.2		62.4	58.4	68.8	57.4
69.4	61.8	68.3	61.1	L_{50}	61.8	56.1	68.3	56.5
71.6	68.2	69.2	58.1		61.3	55.2	67.7	56.1
70.5	70.2	68.8	55.1		60.8	52.6	67.6	55.1
68.9	65.3	67.7	51.2		60.0	52.5	67.4	53.1
65.0	63.6	67.6	50.9		60.0	51.9	67.0	51.2
66.1	63.1	67.4	50.7		56.4	51.7	66.7	50.9
61.3	65.4	66.5	50.8		55.9	51.5	66.5	50.8
55.9	67.4	65.1	50.2		55.4	50.8	65.1	50.7
53.9	64.0	67.0	50.1	L_{25}	54.6	50.4	64.4	50.2
54.6	63.7	70.8	49.7		53.9	50.3	63.4	50.1
53.6	58.4	66.7	48.6		53.9	49.8	63.2	49.7
53.9	55.2	64.4	48.6	L_{10}	53.6	49.5	63.0	48.9
52.0	50.8	63.2	48.9		52.0	49.3	54.8	48.6
50.6	49.8	63.0	53.1		50.6	49.0	50.5	48.6



Noise Measurements in Moreno Valley along Heacock

Source: Blodgett/Baylosis Environmental Planning

Traffic Impact Analysis

FESTIVAL AT MORENO VALLEY

Prepared for:
BlackRidge Real Estate Group, LLC

January 2018

Prepared by:

603 Park Center Drive, Suite 108
Santa Ana, CA 92705
Phone: 949-656-7910

www.transpogroup.com
TG Project Number: 17261

Moreno Valley Case Number: PEN16-0015

Table of Contents

Figures

Tables

Appendices

I. Introduction

The purpose of this Traffic Impact Analysis (TIA) is to identify potential traffic-related impacts associated with the Festival at Moreno Valley proposed Specific Plan (project) located in the City of Moreno Valley (City). The project proposes to modify the existing 180,000 square feet of retail land use to a business park and retail uses.

The project is bounded by the SR 60 Freeway to the South, Ironwood Avenue to the North, Heacock Street to the West, and Nita Drive to the East. Currently, some of the parcels are vacant while others have some retail uses. In the City's latest adopted land use plan, the area designations include commercial, open space, and office uses.

This TIA has been prepared consistent with the City's *Traffic Impact Analysis Preparation Guide* (August 2007). A *Scoping Agreement for Traffic Analysis Study* has been prepared by Transpo and was approved by the City in November 2017. The Scoping Agreement is provided in Appendix A. The Lead Agency of the proposed project is the City of Moreno Valley.

Purpose and Objectives of the Traffic Study

The purpose of this traffic study is to evaluate the traffic and circulation impacts of the proposed project. The objectives of this traffic study include:

- Documentation of existing traffic conditions and future traffic conditions corresponding to the "Existing plus Project" scenario (consisting of existing year 2017 plus project conditions), "Near-Term Year 2022" (five-year horizon consisting of existing plus ambient growth plus cumulative projects) With and Without Project conditions, and a "Buildout Year 2040" (consisting of the General Plan Buildout Year) With and Without Project conditions.
- Determination of additional circulation system features and system management actions needed to achieve the City's levels of service requirements with implementation of the proposed project.

Site Location and Study Area

Figure 1 illustrates the project site location, while Figure 2 illustrates the project study area and traffic control. Regional access to the project site is provided by State Route 60 (SR 60) via its interchange with Heacock Street. Local access is provided by Heacock Street, Hemlock Avenue, and Ironwood Avenue. Per Scoping Agreement, the study area intersections and roadway segments are as follows:

Study Area Intersections

1. Heacock Street (NS) at Ironwood Avenue (EW)
2. Heacock Street (NS) at Project Access (EW)
3. Heacock Street (NS) at Hemlock Avenue (EW)
4. Heacock Street (NS) at SR 60 Freeway WB Ramps (EW)
5. Heacock Street (NS) at SR 60 Freeway EB Ramps (EW)
6. Project Access (NS) at Hemlock Avenue (EW)
7. Davis Street (NS) at Hemlock Avenue (EW)
8. Project Access (NS) at Hemlock Avenue (EW)
9. Project Access (NS) at Hemlock Avenue (EW)
10. Project Access (NS) at Hemlock Avenue (EW)
11. Nita Drive (NS) at Hemlock Avenue (EW)
12. Davis Street (NS) at Ironwood Avenue (EW)
13. Indian Street (NS) at Ironwood Avenue (EW)
14. Indian Street (NS) at Hemlock Avenue(EW)
15. Indian Street (NS) at Sunnymead Boulevard (EW)

Study Area Roadway Segments

1. Heacock Street – Ironwood Avenue to Hemlock Avenue
2. Heacock Street – Hemlock Avenue to SR 60 Freeway WB Ramps
3. Indian Street – Ironwood Avenue to Hemlock Avenue
4. Indian Street south of Hemlock Avenue
5. Ironwood Avenue west of Heacock Street
6. Ironwood Avenue – Heacock Street to Indian Street
7. Ironwood Avenue east of Indian Street
8. Hemlock Avenue west of Heacock Street
9. Hemlock Avenue – Heacock Street to Indian Street
10. Hemlock Avenue east of Indian Street

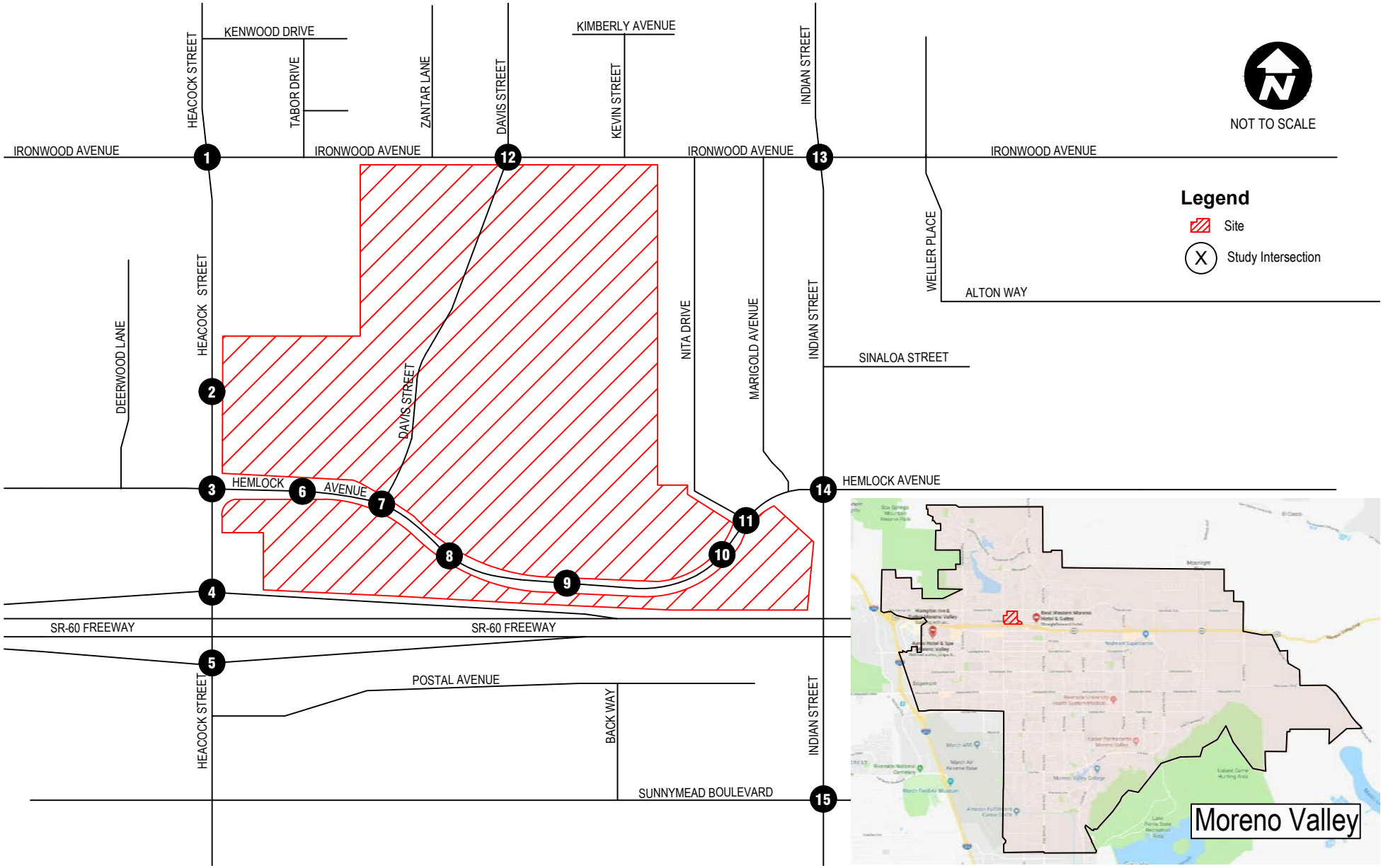
All study area intersections and roadway segments are within the jurisdiction of the City.

Project Description

The proposed project will include the development of 348,000 square feet of business park and 365,000 square feet of retail over eight planning areas as illustrated in the site plan Figure 3. Existing uses on the site include shopping centers, restaurants, and an auto service shop. Per the City's Adopted Land Use Map the area is zoned as mostly as Commercial and Open Space with an Office zoning to the southeast corner of Ironwood Avenue and Davis Street. The open space is shown in Planning Area 5 (refer to Figure 3) and is retained as such under proposed project conditions.
Existing and proposed land uses are shown in Table 1. The proposed project opening year is 2022 and no project phasing is assumed.

Table 1. Existing and Proposed Land Uses

Planning Area	Existing Uses		Proposed Uses	
	Type of Use	Size	Type of Use	Size
1			Business Park	135,000 sf
2			Business Park	35,000 sf
3			Business Park	178,000 sf
			Retail	15,000 sf
4	Shopping (Retail) Center	162,250 sf	Retail	255,000 sf
	Fast Food Restaurant with Drive Through (Yoshinoya)	3,900 sf		
5	Open Space		Open Space	
6	Fast Food Restaurant with Drive Through (Arby's)	2,700 sf	Retail	35,000 sf
	Fast Food Restaurant without Drive Through (KFC)	2,700 sf		
	Auto Service (Jiffy Lube)	3 Service Positions		
	High-Turnover Sit-down Restaurant (Centanario)	8,800 sf		
7	Shopping (Retail) Center	33,675 sf	Retail	40,000 sf
8			Retail	20,000 sf



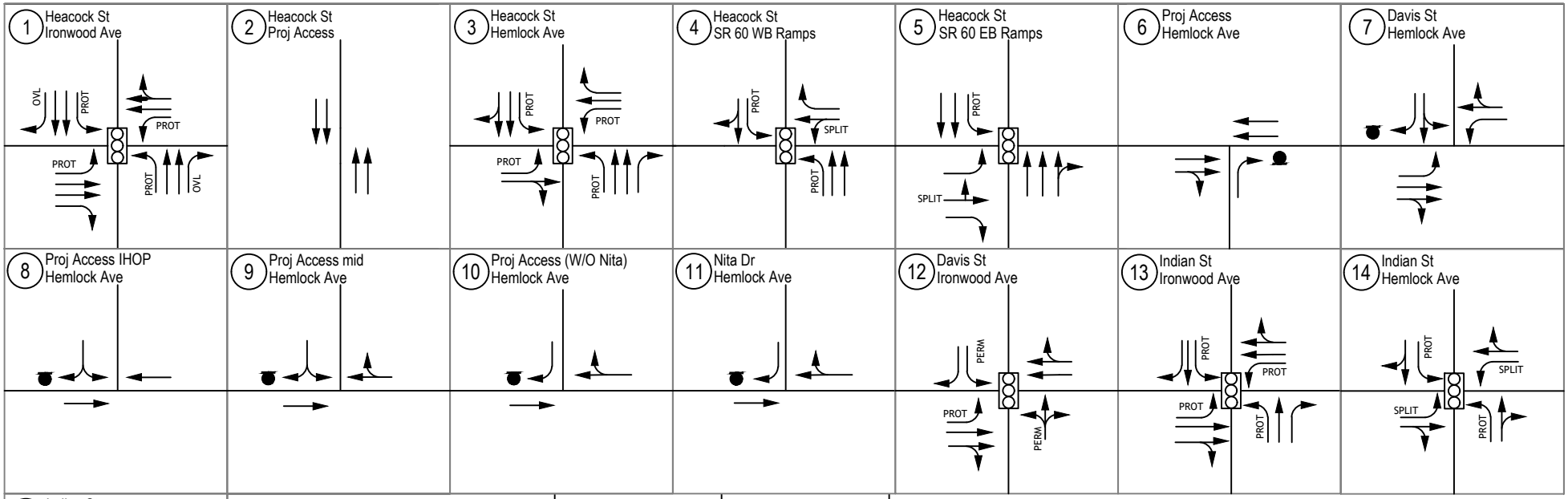
Source: Google Maps, 09/2017.

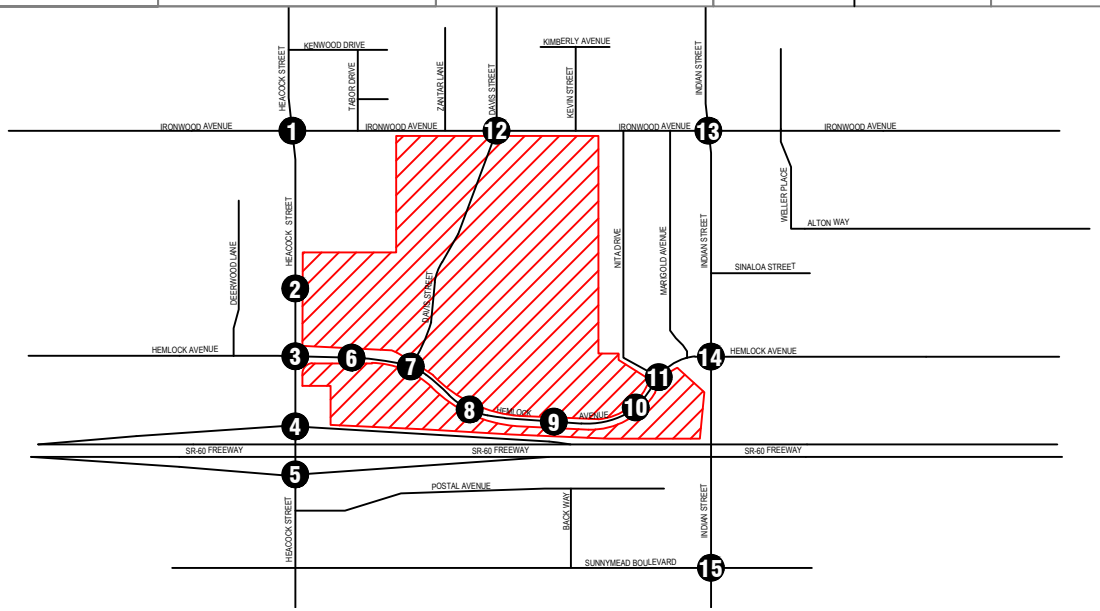
Project Site Location and Study Area

FIGURE 1

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.





NOT TO SCALE

Legend

- Site
- X Study Intersection
- Lane Geometrics
- Traffic Signal
- Stop Sign

PROT	Protected Left Turn Phasing
PERM	Permitted Left Turn Phasing
SPLIT	Split Phasing
DEFACTO	Defacto Right Turn Lane
OVL	Overlapping Right Turn Phasing
FREE	Free Movement
XD	Number of lanes (divided roadway)
XU	Number of lanes (undivided roadway)

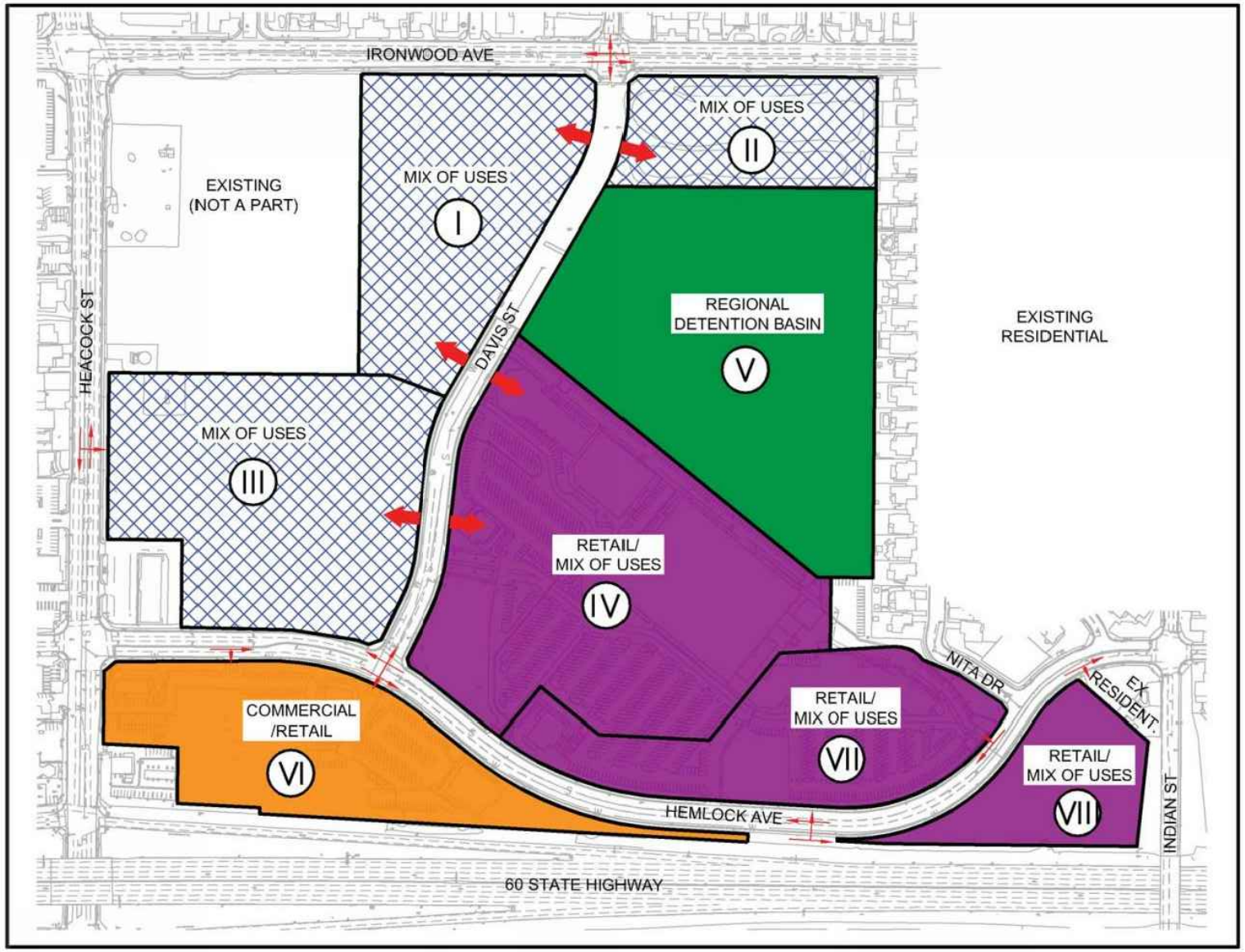
Study Area Intersection and Roadway Geometrics and Traffic Control

FIGURE 2

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.

Jan 29, 2018 - 4:39pm emilyc C:\Users\emilyc\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig2-Geometrics



NOT TO SCALE

Project Site Plan

Festival at Moreno Valley

FIGURE 3

transpogroup
WHAT TRANSPORTATION CAN BE.

Methodology

Intersections

Per City TIA guidelines, the study area intersections were analyzed under the latest version of the *Highway Capacity Manual* (HCM) "Operations" methodology using the *Synchro* level of service (LOS) software program which is consistent with the HCM 2010 methodology. The HCM 2010 methodology determines the control delay a driver may experience at the intersection. If an intersection could not be analyzed using the HCM 2010 methodology because of a particular intersection configuration (e.g., U-turn movements), the HCM 2000 methodology was used.

The degree of congestion at an intersection is described by the level of service, which ranges from LOS A to LOS F, with LOS A representing free-flow conditions with little delay and LOS F representing over-saturated traffic flow throughout the peak hour. A complete description of the meaning of level of service can be found in the Highway Research Board Special Report 209, *Highway Capacity Manual* (HCM 2000). Brief descriptions of the six levels of service for signalized and unsignalized intersections based on the HCM methodology are shown in Table 2.

Table 2. Level of Service Definitions for Intersections

Level of Service	Control Delay in Seconds (signalized)	Control Delay in Seconds (unsignalized)
A	0.0 – 10.0 seconds	0.0 – 10.0 seconds
B	10.1 – 20.0 seconds	10.1 – 15.0 seconds
C	20.1 – 35.0 seconds	15.1 – 25.0 seconds
D	35.1 – 55.0 seconds	25.1 – 35.0 seconds
E	55.1 – 80.0 seconds	35.1 – 50.0 seconds
F	80.1 seconds or greater	50.1 seconds or greater

Table 3 below provides detailed descriptions of each level of service

Table 3. Level of Service (LOS) Descriptions

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Source: *Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.*

Roadway Segments

Per City TIA guidelines, Table 4 provides the LOS criteria for roadway segments based on daily traffic volumes.

Table 4. Level of Service Definitions for Roadway Segments

Roadway	A	B	C	D	E
6-lane Divided Arterial	33,900	39,400	45,000	50,600	56,300
4-lane Divided Arterial	22,500	26,300	30,000	33,800	37,500
4-lane Undivided Arterial	15,000	17,500	20,000	22,500	25,000
2-lane Industrial Collector	7,500	8,800	10,000	11,300	12,500
2-lane Undivided Residential	n/a	n/a	n/a	n/a	2,000

Significance Criteria

The City's significance threshold is based on the *City of Moreno Valley General Plan* (July 2006) which states:

- *LOS D is applicable to intersections and roadway segments that are adjacent to freeway on/off ramps, and/or adjacent land uses. LOS C is applicable to all other intersections and roadway segments. Boundary intersections are assumed to be LOS D.*

Therefore, if the project causes an intersection to operate below the minimum standard, the project would cause a significant project-specific impact at that intersection, and specific mitigation measures must be developed to improve the intersection's LOS back to pre-project levels.

Traffic Analysis Scenarios

This traffic study analyzed the following traffic scenarios:

Existing Condition

Existing traffic volumes were collected at the study intersections and roadway segments in August 2017 during a typical weekday. The existing traffic scenario constitutes the environmental setting in accordance with the *California Environmental Quality Act* (CEQA) analysis at the time that the hearing body reviews the proposed project.

Existing with-Project Condition

The Existing with-Project Condition traffic was developed by adding the proposed project traffic to the Existing Condition traffic volumes. This scenario was the basis for determining project-specific impacts and mitigation measures under existing conditions.

Near Term Year 2022 Baseline Condition

Per City requirements, the Near Term year of analysis would be 2022, a five-year horizon from the existing traffic condition. The proposed project is anticipated to be built and occupied by year 2022. Near-Term year traffic in this scenario was forecast for 2022 by applying an annual ambient growth rate (2% per year per the City's Scoping Agreement) to the existing traffic volumes. In addition to the ambient growth rate, traffic from approved and pending projects (i.e. cumulative projects) in the project's vicinity was added.

Near Term Year 2022 with-Project Condition

The Near Term Year 2022 with-Project Condition traffic was developed by adding the proposed project traffic to the Near-Term Year Baseline Condition. This scenario was also the basis for determining project-specific impacts and mitigation measures for the Near Term Year.

General Plan Buildout Baseline Condition

General Plan Buildout (2040) without Project traffic conditions were derived from the Moreno Valley Transportation Analysis Model which in turn is based-upon the Riverside Transportation Analysis Model (RivTAM) refined to represent General Plan Buildout conditions for the City of Moreno Valley. Traffic volumes for street segments in the study area were obtained from the 2007 and 2035 TransCAD model data sets to establish annual growth rates for each approach leg of the study intersection. Separate growth rates were developed for AM and PM peak period model data volumes. These annual growth rates were applied to the 2017 turning movement counts to forecast traffic growth to 2040 conditions. Consistent with all travel demand model post-processing methods, the forecasts were checked for reasonableness and adjusted if necessary. For example, model adjustments were made to better balance forecasted volume growth between adjacent study intersections.

General Plan Buildout with-Project Condition

The General Plan Buildout with-Project traffic forecasts were determined by adding the project traffic to the General Plan Buildout Baseline (without project) traffic forecasts from the Transportation Analysis Model. The General Plan Buildout traffic forecasts used in the traffic analysis were refined with existing peak hour traffic count data collected at intersection analysis locations.

II. Area Conditions

The following section describes the existing traffic conditions in the project study area. Existing traffic volumes were collected at the study intersections and roadway segments in August 2017 during a typical weekday.

Street System

As mentioned earlier regional access to the project site is provided by State Route 60 (SR 60) via its interchange with Heacock Street. In the project vicinity, the SR 60 consists of two general purpose lanes and one carpool lane per direction. Local access is provided by Heacock Street, Hemlock Avenue, and Ironwood Avenue.

Characteristics of the existing street system in the proposed project vicinity are summarized in Table 5. The roadway classifications are as per the City of Moreno Valley General Plan Circulation Element. Cross-sections described are those in the vicinity of the project and they might vary at intersections to accommodate turning lanes.

Heacock Street is a muti-modal corridor with pedestrian, bicycle, auto, and transit uses. It is also designated as a truck route while at the same time having Class 2 bicycle lanes on both sides between Ironwood Ave and the SR 60 ramps.

Table 5. Street Characteristics

	Heacock St	Ironwood Ave	Indian St	Hemlock Ave	Davis St
Classification	Arterial	Minor Arterial	Minor Arterial	-	-
Traffic Cross-section	4 lanes + TWLT	4 lanes + TWLT	2 lanes	Varies[3]	2 lanes + TWLT[4]
Posted Speed Limit	35	40	35	30	-
Truck Route	Yes	Yes[5]	No	No	No
Transit	RTA 11	RTA 11	-	RTA 11	-
Bicycle Lanes	Class 2	Class 3	Class 3	-	-
Sidewalks	Both Sides	Both Sides	SB Only	Both Sides	Both Sides

1. TWLT: Two Way Left Turn
2. ADT: Average Daily Traffic
3. The cross-section of Hemlock in 4 lanes divided west of Davis St and two lanes with a TWLT east of Davis St. West of Indian St the TWLT is converted to a median
4. Davis St is not paved to the north of the existing development
5. Ironwood Ave is a truck route between Perris Blvd and Pigeon Pass Rd

Transit

Riverside Transit Agency (RTA) Route 11 buses run in the immediate vicinity of the project site. Buses serving this route run in either of two loops, clockwise or counterclockwise, starting from and terminating at the Moreno Valley Mall.

The major destinations served by this route include in addition to the Mall, Festival at Moreno Valley, the Post Office, Kaiser Medical Offices, Riverside County Superior Court, City Hall, and Moreno Valley High School.

In the immediate vicinity of the project Route 11 runs on Heacock St south of Hemlock Ave, on Hemlock Ave, and on Ironwood Ave. Bus stops are in the vicinity of the Hemlock/Davis, Hemlock/Indian, Indian/Ironwood and Ironwood/Heacock intersections.

Service frequencies are about one bus every hour on both weekdays and weekends. Weekday operations are between 5 AM and 10 PM and weekend operations are between 8.30 AM and 8.30 PM.

Pedestrian and Bicycle Systems

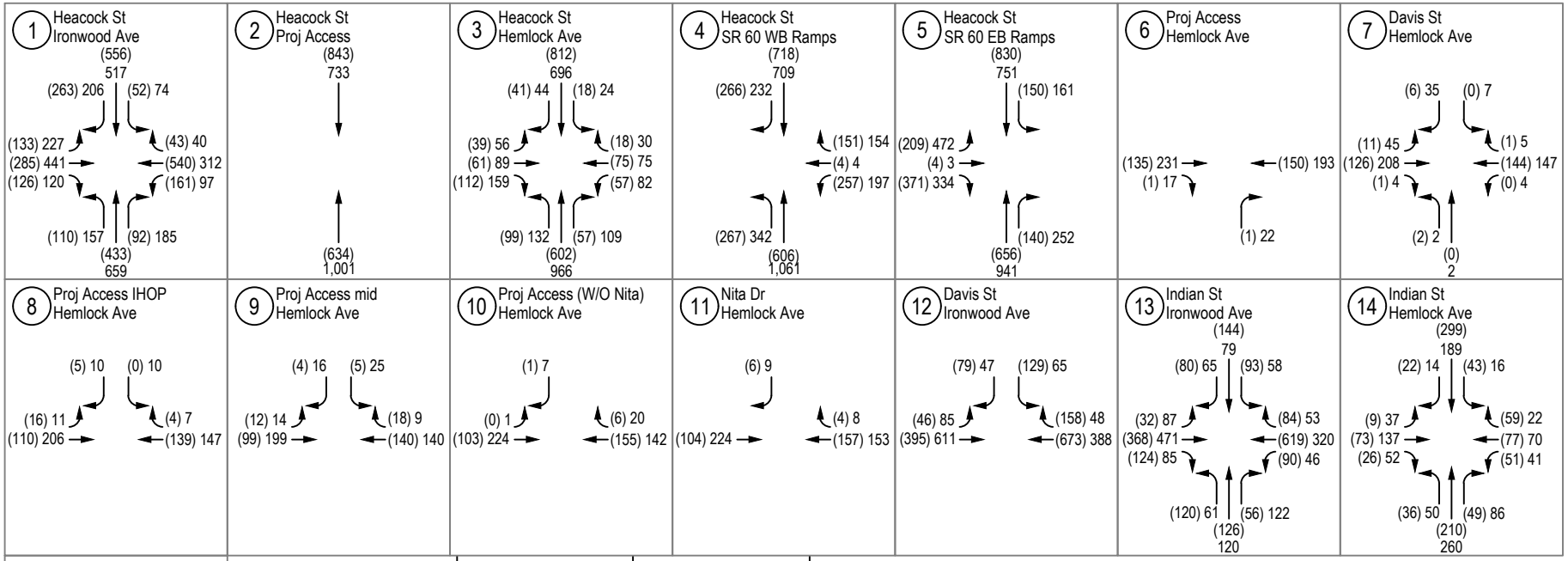
As presented in Table 5, sidewalks exist on both side of most streets in the immediate vicinity of the project with the exception of Indian Street where sidewalks are only available in the southbound direction.
Davis St currently does not connect to Ironwood Avenue and until the connection is established as part of this project, pedestrian accessibility will be served mainly by Heacock St and Nira Dr.
Standard pedestrian crosswalks (consisting of two solid parallel lines) are available at all the study area signalized intersections where pedestrian crossings are permitted.

Bicycle lanes described in Table 5 are as per the City's Bicycle Master Plan. Class 2 bike lanes are on-street paths that are located along the edge of a street with a striped lane denoting this bike path. Class 3 bike routes also are located along a street edge, but are not striped. These paths are identified by street signs only.
In the immediate project vicinity Heacock St is the only Class 2 facility while Ironwood Ave and Indian St are designated as Class 3 facilities. The Bicycle Master Plan recommends the following in the project vicinity:

- Class 2 bike lane along Hemlock between Indian St and Heacock St
- Class 2 bike lane along Heacock St (south of Hemlock Ave)
- Class 2 bike lane along Ironwood Ave
- Class 3 bike route along Davis St

Traffic Volumes

Existing traffic volumes were collected at the study intersections and roadway segments in August 2017.
Figure 4 shows the existing AM and PM peak hour traffic volumes at the study intersections, while Figure 5 shows the existing daily traffic volumes on the study area roadway segments. The raw traffic volume count sheets are provided in Appendix B.

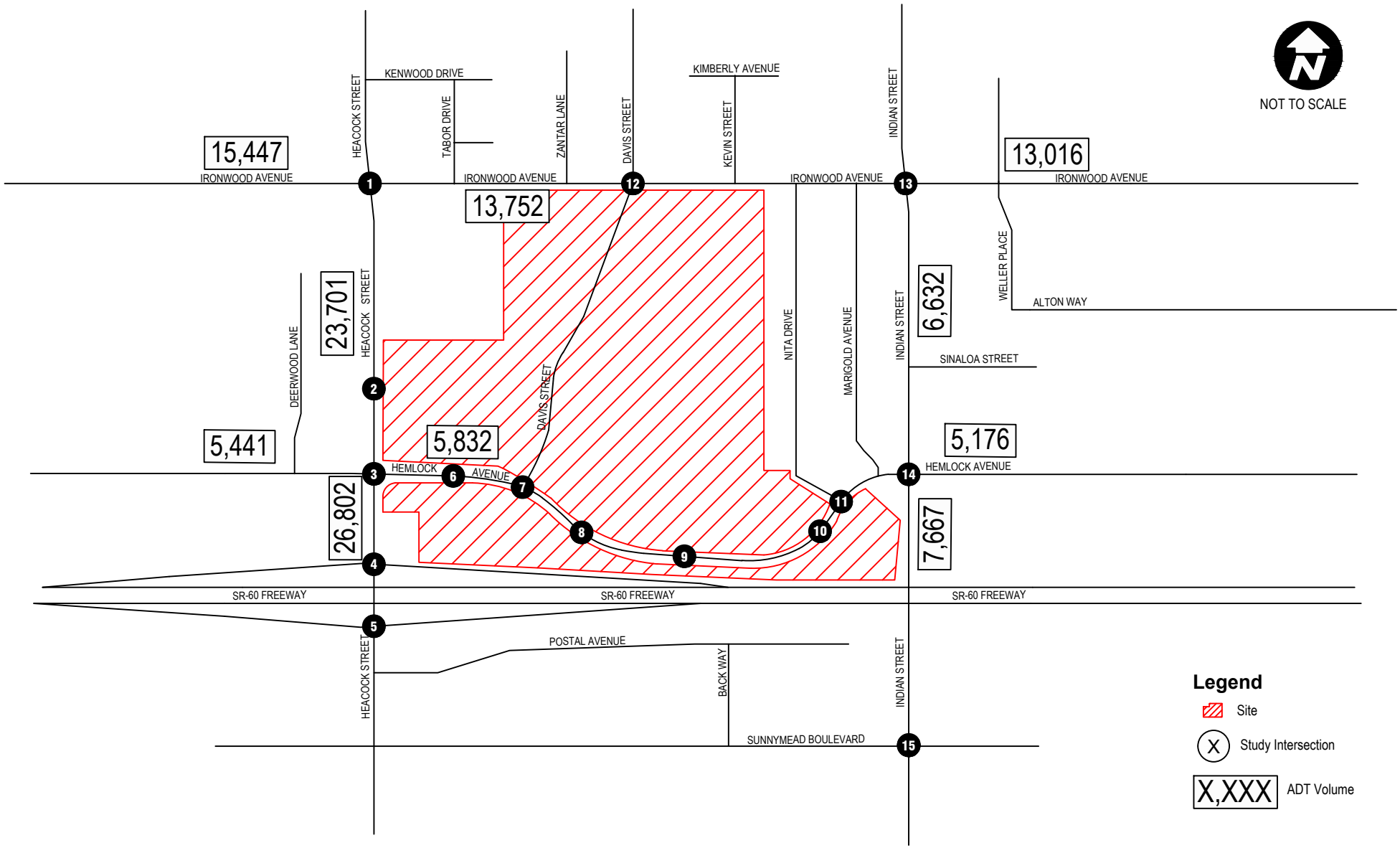


Existing AM and PM Peak Hour Traffic Volumes

FIGURE 4

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.



Existing Daily Traffic Volumes

Festival at Moreno Valley

FIGURE 5

transpogroup
WHAT TRANSPORTATION CAN BE.

Dec 04, 2017 - 4:24pm emilyc C:\Users\emilyc\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig5-ex adt

Levels of Service

Intersection Operations

Level of Service Analysis

Based on the analysis methodology described in Section I, the existing AM and PM peak hour traffic volumes were input into the *Synchro* LOS software to determine the existing intersection delay and LOS values. Table 6 presents the results of the existing intersection LOS analysis, while the LOS calculation sheets are provided in Appendix C.

Table 6. Existing Without-Project Weekday Peak Hour Intersection LOS

Intersection	Traffic Control	City's LOS Standard	AM Peak		PM Peak	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. Heacock Street/Ironwood Avenue	Signal	LOS D	C	26.9	C	28.0
2. Heacock Street/(new) Project Access	OWSC	LOS D	-	-	-	-
3. Heacock Street/Hemlock Avenue	Signal	LOS D	B	18.9	C	22.3
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	21.8	B	19.6
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	21.9	C	21.8
6. Project Access/Hemlock Avenue	OWSC	LOS C	A	8.7	A	9.9
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.1	B	13.5
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.1	B	10.0
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.7	B	10.3
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.1
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.2
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	25.8	C	33.0
13. Indian Street/Ironwood Avenue	Signal	LOS D	C	32.1	C	25.9
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	22.3	C	22.1
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	21.2	C	27.3

1. Level of Service
2. Delay measured in seconds/vehicle
3. Delay and LOS are based on Highway Capacity Manual 2010
4. Signal = Traffic Signal (evaluated using the HCM Methodology)
5. TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)
6. OWSC = One Way Stop Controlled (evaluated using the HCM Methodology)

Based on the existing LOS analysis, all study area intersections are currently operating with a satisfactory LOS as per City's standards during both peak hours.

Queuing Analysis

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table 7 with detailed calculation in Appendix C.
Table 7 shows that the existing 95th percentile queue lengths exceed storage space. It should be noted that the 95th percentile queue is not necessarily ever observed, it is simply based on statistical calculations. In other words, if traffic was observed for 100 cycles, the 95th percentile queue would be the queue experienced with the 95th busiest cycle (or 5% of the time). It is however used by many jurisdictions as the basis for calculating storage lengths.

As shown in Table 7, the queue lengths of various intersection approaches exceed the existing pocket length under existing conditions. Mitigation measures are presented in Section V.

Table 7. Existing Without-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	95th Percentile Queue[1]		Exceeds Existing Pocket Length	
			AM	PM	AM	PM
1. Heacock Street/Ironwood Avenue	EBL	90	149	**126**	**Yes**	**Yes**
	WBL	135	**178**	108	**Yes**	No
	NBL	140	127	**175**	No	**Yes**
	SBL	100	70	88	No	No
2. Heacock Street/(new) Project Access	No pocket Lanes and/or No Queues					
3. Heacock Street/Hemlock Avenue	EBL	70	50	70	No	No
	WBL	360	66	92	No	No
	NBL	100	98	136	No	**Yes**
	SBL	95	31	39	No	No
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	**239**	**256**	**Yes**	**Yes**
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	101	213	**Yes**	**Yes**
	SBL	190	150	160	No	No
6. Project Access/Hemlock Avenue	No pocket Lanes and/or No Queues					
7. Davis Street/Hemlock Avenue	EBL	180	0	3	No	No
8. Project Access IHOP/Hemlock Avenue	No pocket Lanes and/or No Queues					
9. Project Access (middle dwy)/Hemlock Avenue	No pocket Lanes and/or No Queues					
10. Project Access (w/o Nita Dr)/Hemlock Avenue	No pocket Lanes and/or No Queues					
11. Nita Drive/Hemlock Avenue	No pocket Lanes and/or No Queues					
12. Davis Street/Ironwood Avenue	EBL	150	**88**	**162**	No	**Yes**
	SBL	40	111	61	**Yes**	**Yes**
13. Indian Street/Ironwood Avenue	EBL	95	51	103	No	**Yes**
	WBL	100	109	64	**Yes**	No
	NBL	110	139	78	**Yes**	No
	SBL	80	112	75	**Yes**	No
14. Indian Street/Hemlock Avenue	EBL	150	19	46	No	No
	WBL	80	56	49	No	No
	NBL	145	50	63	No	No
	SBL	100	54	28	No	No
15. Indian Street/Sunnymead Boulevard	EBL	90	62	**136**	No	**Yes**
	WBL	100	33	61	No	No
	NBL	145	89	104	No	No
	SBL	90	68	77	No	No

1. Calculated using Synchro – bold numbers indicate where Synchro yielded "95th percentile volume exceeds capacity, queue maybe longer." The queues were evaluated in Simtraffic at these locations.

Signal Warrant Analysis

The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization. Detailed worksheets are provided in Appendix C.

Roadway Segments

Based on the analysis methodology described in Section I, the existing daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values presented in Table 4 above. Table 8 presents the results of the existing roadway segment LOS analysis.

Based on the existing roadway segment analysis, all study area roadway segments currently operate with LOS D or better.

Table 8. Existing Condition Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Number of Lanes	Divided/ Undivided	ADT[1]	LOS Standard[2]	Maximum Capacity ADT[3]	V/C	LOS	Exceeds Threshold ?
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	4	Divided	23,701	LOS D	37,500	0.632	B	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	4	Divided	26,802	LOS D	37,500	0.715	C	No
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	2	Undivided	6,632	LOS D	12,500	0.531	A	No
4. Indian Street - South of Hemlock Avenue	Minor Arterial	2	Undivided	7,667	LOS D	12,500	0.613	B	No
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	4	Divided	15,447	LOS C	37,500	0.412	A	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	4	Divided	13,752	LOS C	37,500	0.367	A	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	4	Divided	13,016	LOS C	37,500	0.347	A	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	2	Undivided	5,441	LOS C	12,500	0.435	A	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	4	Divided	5,832	LOS C	37,500	0.156	A	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	2	Undivided	5,176	LOS C	12,500	0.414	A	No

1. ADT: Average Daily Traffic
2. LOS based on City of Moreno Valley Roadway Segment LOS Values (Table 4)
3. Based on City of Moreno Valley Guidelines daily service volume standards table (LOS E). Four Lane Divided Arterial and Two Lane Industrial Collector used as classifications.
4. Roadway classification and LOS standard not listed in City Guidelines, assumed to be Minor Arterial, Two Lane Industrial Collector, with LOS Standard C.

III. Project Future Traffic

This section describes the project trip generation, distribution, and assignment. These have been agreed upon with the City prior to embarking on the TIA and documented in the scoping agreement included in Appendix A.

Trip Generation

Weekday daily, AM and PM peak hour trip generation estimates for the proposed project were developed using trip rates provided in the *Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, 2017*. Summaries of the trip generation rates and resulting vehicle trips for the proposed project are presented in Table 9.

Comparison to Specific Plan 205

The total trip generation of the project (before accounting for internal capture, pass-by or existing uses) was found to be 18,108 daily trips with 482 trips in the AM Peak (298 inbound and 185 outbound) and 1,537 trips in the PM Peak (735 inbound and 802 outbound). These trip generation numbers are compared to the approved Festival at Moreno Valley Specific Plan 205 trip generation numbers (Greiner Engineering Study 1986) and the results are illustrated in Table 10. As shown in Table 9, the current proposed specific plan generates less trips than the Specific Plan 205 to the order of 214 trips Daily and 900 trips in the PM Peak (note that AM Peak period was not assessed in the Greiner Engineering Study).

Internal Trip Capture and Pass-by

Internal capture was calculated using methodology from NCHRP 684 Mixed Use Spreadsheet which yields an internal trip capture of 7% in the AM peak and 4% in PM Peak and Daily.
Pass-by trip rates for the retail component of the project were estimated at 34% during PM peak hour and 17% during the AM peak hour and Daily based on the *Institute of Transportation Engineers (ITE), Trip Generation, 10th Edition, 2017*. These calculation sheets were submitted with the scoping agreement and approved by the City.

Net New Trips

The existing land uses were provided by the Client and the net new trips of the project are calculated by accounting for the existing uses as shown in Table 11. The net new trips generated by the project are calculated to be 7,612 daily trips with 527 trips in the PM Peak (231 inbound and 295 outbound). During the AM peak the project would produce less trips than existing conditions whereby the project is forecasted to remove 78 trips from the street system (21 inbound and 56 outbound).

Table 9. Proposed Project Trip Generation

	LU	Units	Daily	AM Peak Hour IN	AM Peak Hour OUT	AM Peak Hour TOTAL	PM Peak Hour IN	PM Peak Hour OUT	PM Peak Hour TOTAL
Trip Rates									
Shopping Center[1]	Code 820	TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Business Park[2]	Code 770	TSF	12.44	0.24	0.16	0.40	0.19	0.23	0.42
Project Trip Generation									
Planning Area 1									
Business Park	135.000	TSF	1,679	33	21	54	26	31	57
Subtotal			*1,679*	*33*	*21*	*54*	*26*	*31*	*57*
Planning Area 2									
Business Park	35.000	TSF	435	9	5	14	7	8	15
Subtotal			*435*	*9*	*5*	*14*	*7*	*8*	*15*
Planning Area 3									
Business Park	178.000	TSF	2,214	43	28	71	34	40	75
Retail	15.000	TSF	566	9	5	14	27	30	57
Subtotal			*2,781*	*52*	*33*	*85*	*62*	*70*	*132*
Planning Area 4									
Retail	255.000	TSF	9,626	149	91	240	466	505	972
Subtotal			*9,626*	*149*	*91*	*240*	*466*	*505*	*972*
Planning Area 6									
Retail	35.000	TSF	1,321	20	13	33	64	69	133
Subtotal			*1,321*	*20*	*13*	*33*	*64*	*69*	*133*
Planning Area 7									
Retail	40.000	TSF	1,510	23	14	38	73	79	152
Subtotal			*1,510*	*23*	*14*	*38*	*73*	*79*	*152*
Planning Area 8									
Retail	20.000	TSF	755	12	7	19	37	40	76
Subtotal			*755*	*12*	*7*	*19*	*37*	*40*	*76*
Total Trip Generation			*18,108*	*298*	*185*	*482*	*735*	*802*	*1,537*
Internal Trip Capture[3]			-724	-21	-13	-34	-29	-32	-61
Pass-By Trips[4]			-2,342	-29	-29	-58	-236	-237	-473
Net Trip Generation With Internal Trip Capture and Pass By			**15,041**	**248**	**142**	**390**	**469**	**533**	**1,003**
Existing Land Uses (includes Internal Trip Capture and Pass-By Reductions)[5]			7,429	269	199	468	238	238	476
Net New Trips (Project – Existing)			**7,612**	**-21**	**-56**	**-78**	**231**	**295**	**527**

Note: TSF = Thousand Square Feet

1. Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center.
2. rip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 770 - Business Park.
3. Internal capture calculated using methodology from NCHRP 684 Mixed Use Spreadsheet (AM = 7%, PM/Daily = 4%)
4. Pass-by trip rate for Retail Uses (34% during PM peak hour, 17% during the AM peak hour and Daily based on weekend mid-day) from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center.
5. Refer to Table 10 for details
6. Note that Planning Area 5 is Open Space and as such is not included above

Table 10. Proposed Project Trip Generation Versus Greiner Engineering (SP 205)

	LU	Units	Daily	AM Peak Hour			PM Peak Hour		
				IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed Project Total Traffic (No Internal Trip Capture or Pass-by Reductions)			18,108	298	185	482	735	802	1,537
Greiner Engineering Study (Table 3) (No Internal Trip Capture or Pass-by Reductions)			18,322	--	--	--	1,081	1,356	2,437
Trip Generation With Internal Trip Capture and Pass By			**-214**	**--**	**--**	**--**	**-346**	**-554**	**-900**

1. Greiner Engineering – Specific Plan 205 Site Specific Analysis – December 1986
2. Greiner Engineering Study did not evaluate the AM Peak Hour as PM is the more peak with highest number of trips

Table 11. Existing Project Site Trip Generation

	LU	Units	Daily	AM Peak Hour IN	AM Peak Hour OUT	AM Peak Hour TOTAL	PM Peak Hour IN	PM Peak Hour OUT	PM Peak Hour TOTAL
Trip Rates[1]									
Shopping Center	820	TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Fast Food Restaurant With Drive Through	934	TSF	470.95	20.50	19.69	40.19	16.99	15.68	32.67
Fast Food Restaurant Without Drive Through	933	TSF	346.23	15.06	10.04	25.10	14.17	14.17	28.34
High-Turnover Sit-down Restaurant	932	TSF	112.18	5.47	4.47	9.94	6.06	3.71	9.77
Automobile Service	941	SP	40.00	2.01	0.99	3.00	2.72	2.13	4.85
Project Trip Generation									
Planning Area 1	Vacant								
Planning Area 2	Vacant								
Planning Area 3	Vacant								
Planning Area 4									
Shopping Center (Retail Center)	162.250	TSF	6,125	95	58	153	297	321	618
Fast Food Restaurant With Drive Through (Yoshinoya)	3.900	TSF	1,837	80	77	157	66	61	127
Subtotal			*7,962*	*174*	*135*	*309*	*363*	*383*	*746*
Planning Area 6									
Fast Food Restaurant With Drive Through (Arby's)	2.700	TSF	1,272	55	53	109	46	42	88
Fast Food Restaurant Without Drive Through (KFC)	2.700	TSF	935	41	27	68	38	38	77
Auto Service (Jiffy Lube)	3	SP	120	6	3	9	8	6	15
High-Turnover Sit-down Restaurant (Centanario)	8.800	TSF	987	48	39	87	53	33	86
Subtotal			*3,314*	*150*	*123*	*273*	*146*	*120*	*265*
Planning Area 7									
Shopping Center (Retail Center)	33.675	TSF	1,271	20	12	32	62	67	128
Subtotal			*1,271*	*20*	*12*	*32*	*62*	*67*	*128*
Planning Area 8	*Vacant*								
Total Trip Generation			*12,546*	*344*	*269*	*614*	*570*	*569*	*1,139*
Internal Trip Capture[2]			-2,886	-17	-13	-31	-131	-131	-262
Pass-By Trips For Shopping Center[3]			-1,257	-16	-15	-31	-131	-130	-261
Pass-By Trips For Fast Food With Drive Through[4]			-777	-33	-33	-66	-53	-53	-106
Pass-By Trips For High-Turnover Sit-down Restaurant[5]			-197	-9	-8	-17	-17	-17	-34
Total Pass-by Trips			*-2,232*	*-58*	*-57*	*-115*	*-201*	*-200*	*-401*
Net Trip Generation With Internal Trip Capture and Pass By			**7,429**	**269**	**199**	**468**	**238**	**238**	**476**

Note: TSF = Thousand Square Feet

1. Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center, Land Use Code 934 - Fast-Food Restaurant With Drive-Through Window, Land Use Code 933 - Fast-Food Restaurant Without Drive-Through Window, Land Use Code 932 - High-Turnover (Sit-Down) Restaurant, Land Use Code 941 - Quick Lubrication Vehicle Shop.
2. Internal capture calculated using methodology from NCHRP 684 Mixed Use Spreadsheet
3. Pass-by trip rates (35% during PM peak hour, 17% for AM peak hour and Daily) from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center.
4. Pass-by trip rates (49% during PM peak hour, 25% for AM peak hour and Daily) from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 934 - Fast Food Restaurant with Drive Through.
5. Pass-by trip rates (40% during PM peak hour, 20% for AM peak hour and Daily) from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 932 - High Turnover Sit-down Restaurant.

Trip Distribution and Assignment

Regional and local trip distribution percentages for the proposed project were based on logical peak hour commute patterns and approved in the City's Scoping Agreement. Figure 6 and Figure 7 illustrate the Retail outbound and inbound trip distribution percentages respectively, while Figure 8 and Figure 9 illustrate the outbound and inbound trip distribution percentages for the Business Park component of the project respectively. The trip distribution percentages at each intersection were applied to the proposed project's weekday AM and PM peak hour trip generation estimates to calculate the project trip assignment. The resulting weekday AM, and PM peak hour trip assignments are also shown on Figure 10.

Background Cumulative Traffic

Ambient Growth Rate

Traffic Conditions prior to the time that the proposed development is completed will be estimated by increasing the existing traffic counts by a growth rate of 2% per year. The ambient growth rate will be applied from 2017 till 2022.

Cumulative Projects

The cumulative project list includes reasonably foreseeable development projects which are either approved or being processed concurrently in the study. A list of these projects was compiled in collaboration with the City's Planning Department (Economic Development) and location of each cumulative project is shown in Figure 11, while the trip generation of each cumulative project is shown in Table 12.
The cumulative project trips where then distributed and assigned on the study area intersections as shown in Figure 12.

Near Term and General Plan Traffic Forecasts

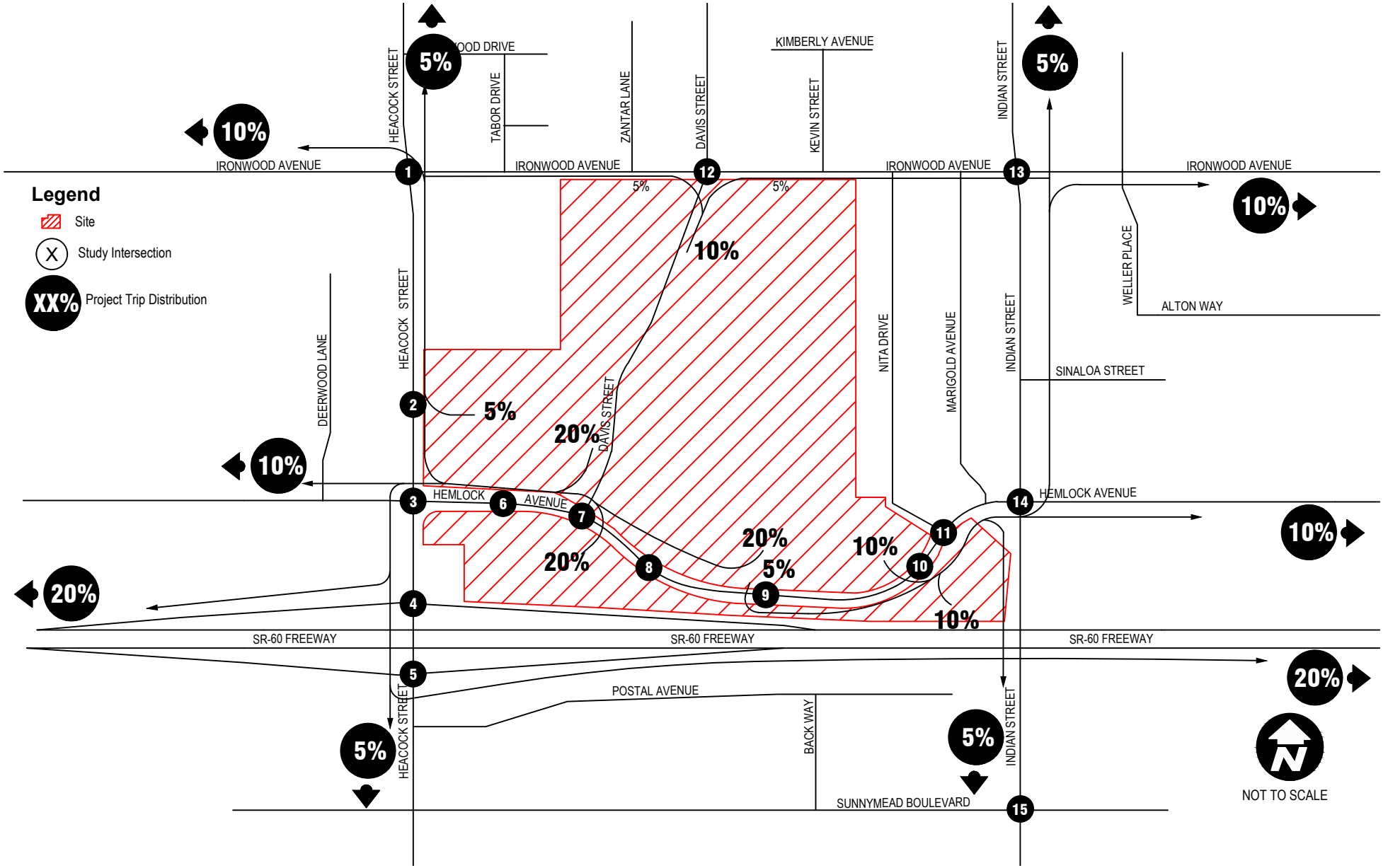
A "buildup" and "buildout" analysis were carried out. The "buildup" scenario corresponds to Near Term Year 2022 and was used to approximate the Opening Year Cumulative traffic forecasts. The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast the Near Term Year 2022 background traffic conditions. The Opening Year Cumulative traffic forecasts include background traffic, traffic generated by other cumulative development projects within the study area, and the traffic generated by the proposed Project. The 2022 roadway network is similar to the existing conditions roadway network with the exception of future roadways and intersections proposed to be developed by the Project.
The "buildout" approach is used to forecast the General Plan Buildout Without and With Project conditions of the study area. The Moreno Valley Transportation Analysis Model (based on RivTam) was used for this analysis.

Table 12. Cumulative Projects Trip Generation

	LU	Units	Daily	AM Peak Hour IN	AM Peak Hour OUT	AM Peak Hour TOTAL	PM Peak Hour IN	PM Peak Hour OUT	PM Peak Hour TOTAL
Trip Rates[1]									
Shopping Center	820	TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Office	710	TSF	9.74	1.00	0.16	1.16	0.18	0.97	1.15
Hotel	310	RM	8.36	0.28	0.19	0.47	0.31	0.29	0.60
Single Family Residential	210	DU	9.44	0.19	0.56	0.74	0.62	0.37	0.99
Multi-Family Housing	220	DU	7.32	0.11	0.35	0.46	0.35	0.21	0.56
Project Trip Generation									
1. Moreno Valley Plaza (Shopping Center)	341.000	TSF	12,873	199	122	321	624	676	1,299
Minus Pass-By Trips[2]			-1,287	-20	-12	-32	-118	-128	-247
Subtotal Moreno Valley Plaza (Shopping Center)			*11,585*	*179*	*110*	*288*	*505*	*547*	*1,052*
2. Olivewood Plaza (Office)	22.758	TSF	222	23	4	26	4	22	26
3. Riverside County Office Building (Office)	52.000	TSF	506	52	8	60	10	50	60
4. Sleep Inn & Suites (Hotel)	66	RM	552	18	13	31	20	19	40
5. Econo Lodge (Hotel)	51	RM	426	14	10	24	16	15	31
6. Holiday Inn Express (Hotel)	153	RM	1,279	42	29	72	47	45	92
7. Best Western Hotel and Suites (Hotel)	59	RM	493	16	11	28	18	17	35
8. Tract 32710 (Single Family Residential)	6	DU	57	1	3	4	4	2	6
9. Tract 32126 (Single Family Residential)	35	DU	330	6	19	26	22	13	35
10. Tract 36761 (Single Family Residential)	7	DU	66	1	4	5	4	3	7
11. Tract 31621 (Single Family Residential)	12	DU	113	2	7	9	7	4	12
12. Tract 35956 (Single Family Residential)	2	DU	19	0	1	1	1	1	2
13. PA15-0042 (Multi-Family Apartments)	39	DU	285	4	14	18	14	8	22
14. Tract 31814 (Multi-Family Condos)	60	DU	439	6	21	28	21	12	34
15. Tract 33771 (Multi-Family Condos)	12	DU	88	1	4	6	4	2	7
16. PEN 16-0066 (Multi-Family Apartments)	12	DU	88	1	4	6	4	2	7
17. Tract 35663 (Multi-Family Condos)	12	DU	88	1	4	6	4	2	7
18. Tract 35769 (Multi-Family Condos)	16	DU	117	2	6	7	6	3	9
19. PA09-0006 (Multi-Family Apartments)	15	DU	110	2	5	7	5	3	8
Total Trip Generation			**7,429**	**269**	**199**	**468**	**238**	**238**	**476**

Note: TSF = Thousand Square Feet, DU = Dwelling Unit, RM = Room Vehicle

1. Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center, Land Use Code 710 – Office, Land Use Code 310 – Hotel, Land Use Code 210 - Single Family Residential, Land Use Code 220- Multi-Family Housing (Low-Rise).
2. Pass-by trip rates (19% during PM peak hour, 10% for AM peak hour and Daily) from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center



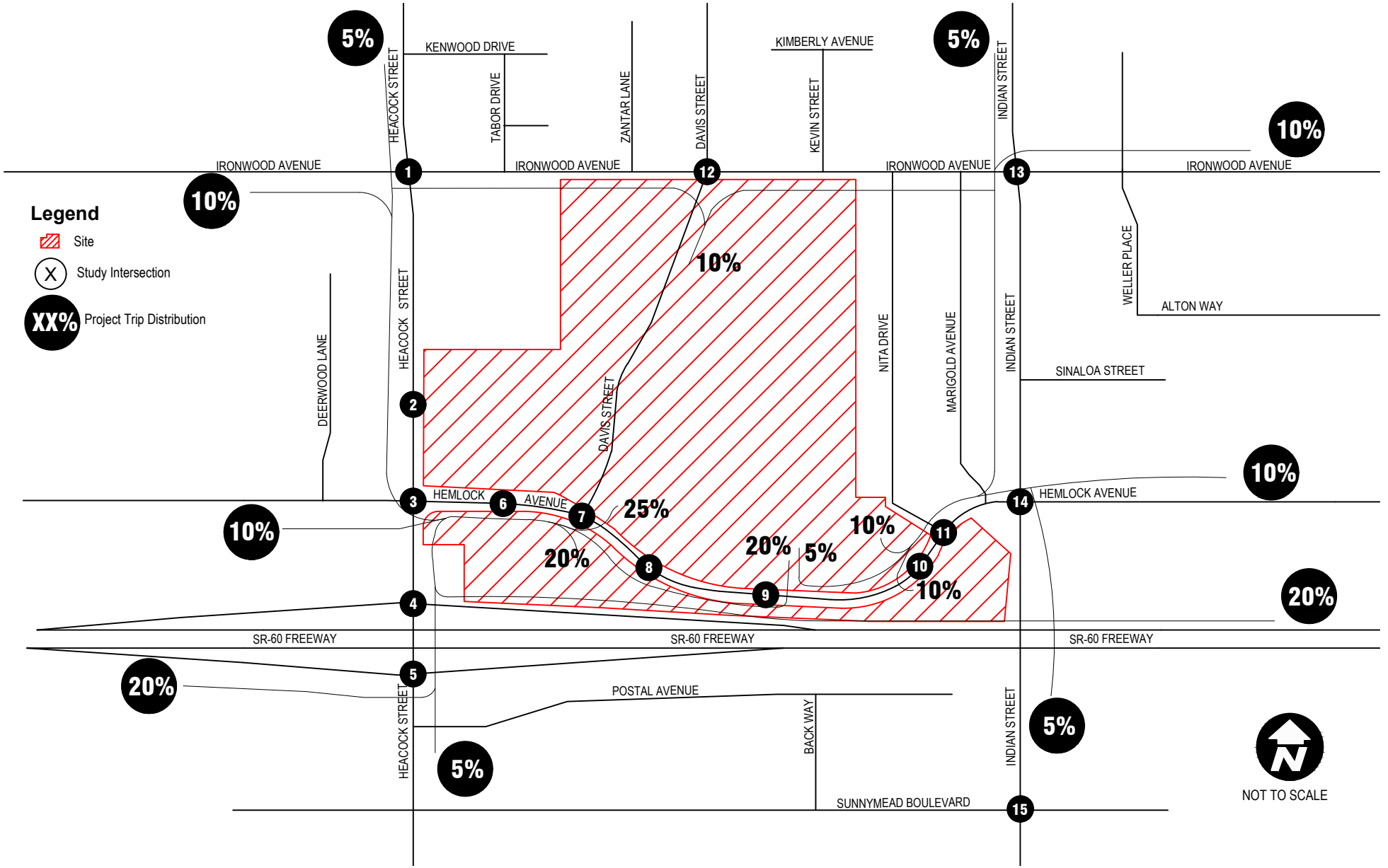
Source: Google Maps, 09/2017.

Retail Distribution Outbound

Festival at Moreno Valley

FIGURE 6

transpogroup
WHAT TRANSPORTATION CAN BE.



Source: Google Maps, 09/2017.

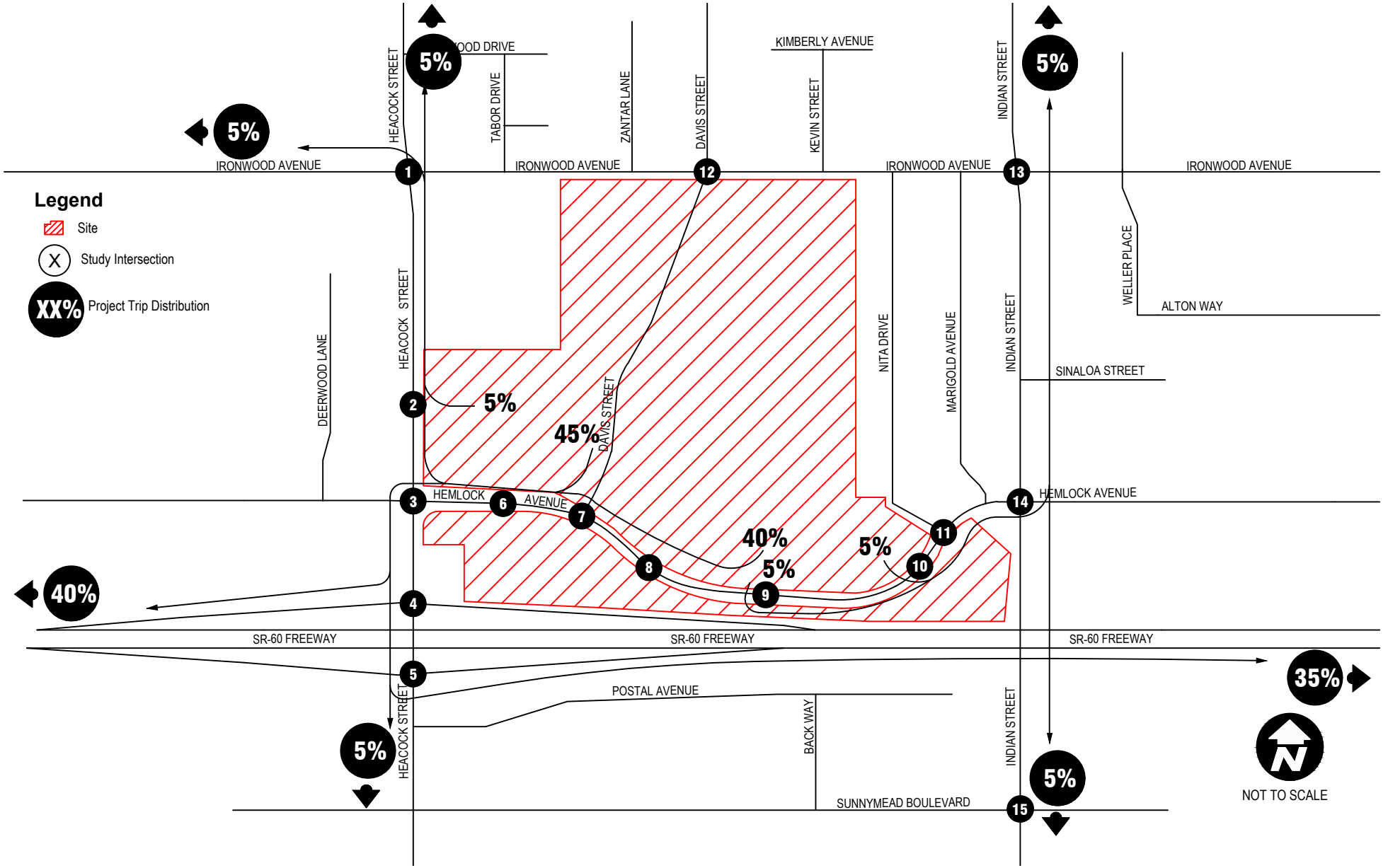
Retail Distribution Inbound

Festival at Moreno Valley

FIGURE 7

transpogroup
WHAT TRANSPORTATION CAN BE.

Dec 04, 2017 - 4:25pm emilyc C:\Users\emilyc\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig7-Retail Distribution Inbound



Source: Google Maps, 09/2017.

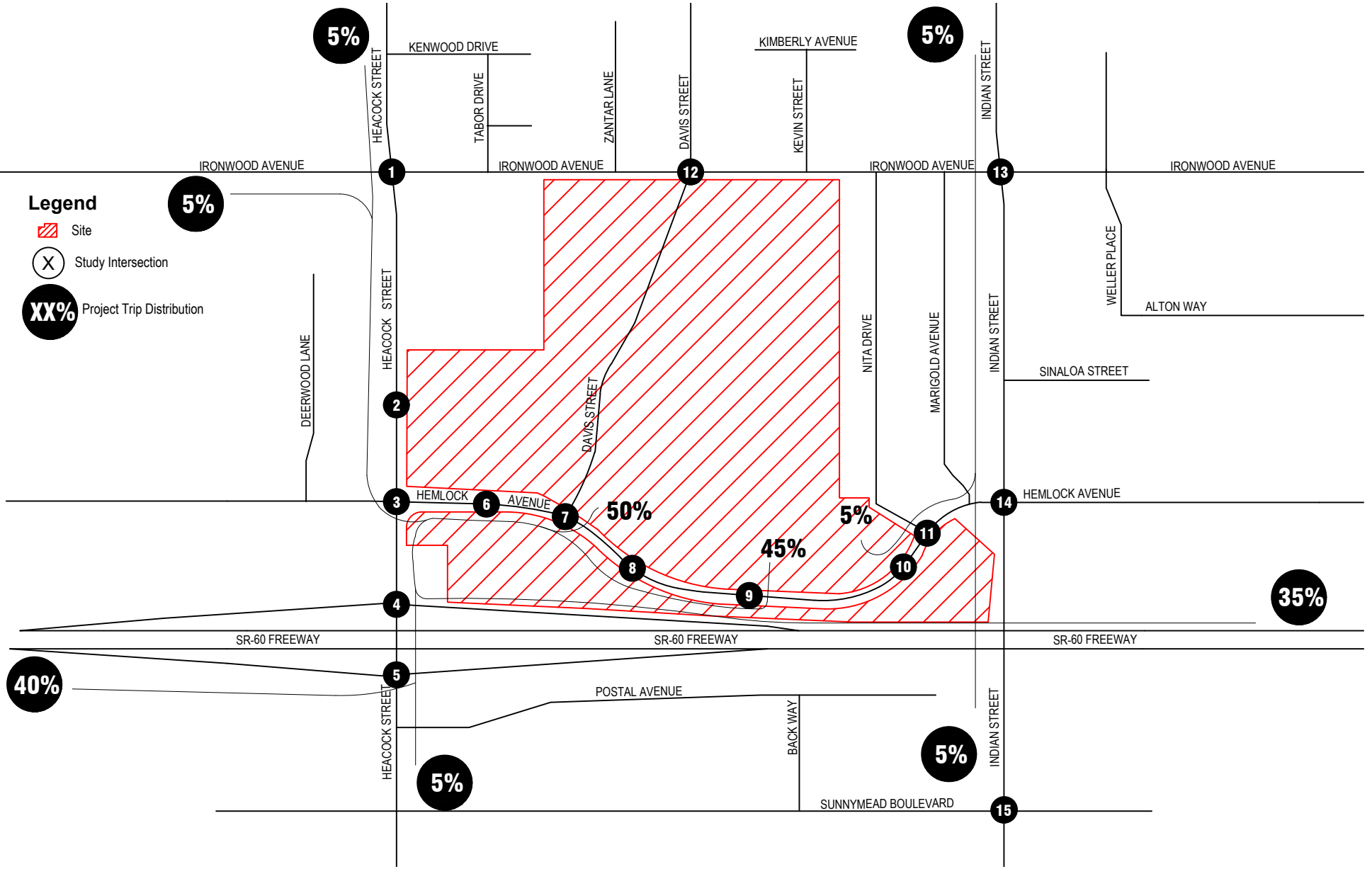
Business Park Distribution Outbound

FIGURE 8

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.

Dec 04, 2017 - 4:25pm emilyc C:\Users\emilyc\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig8-Business Park Distribution Outbound



Source: Google Maps, 09/2017.

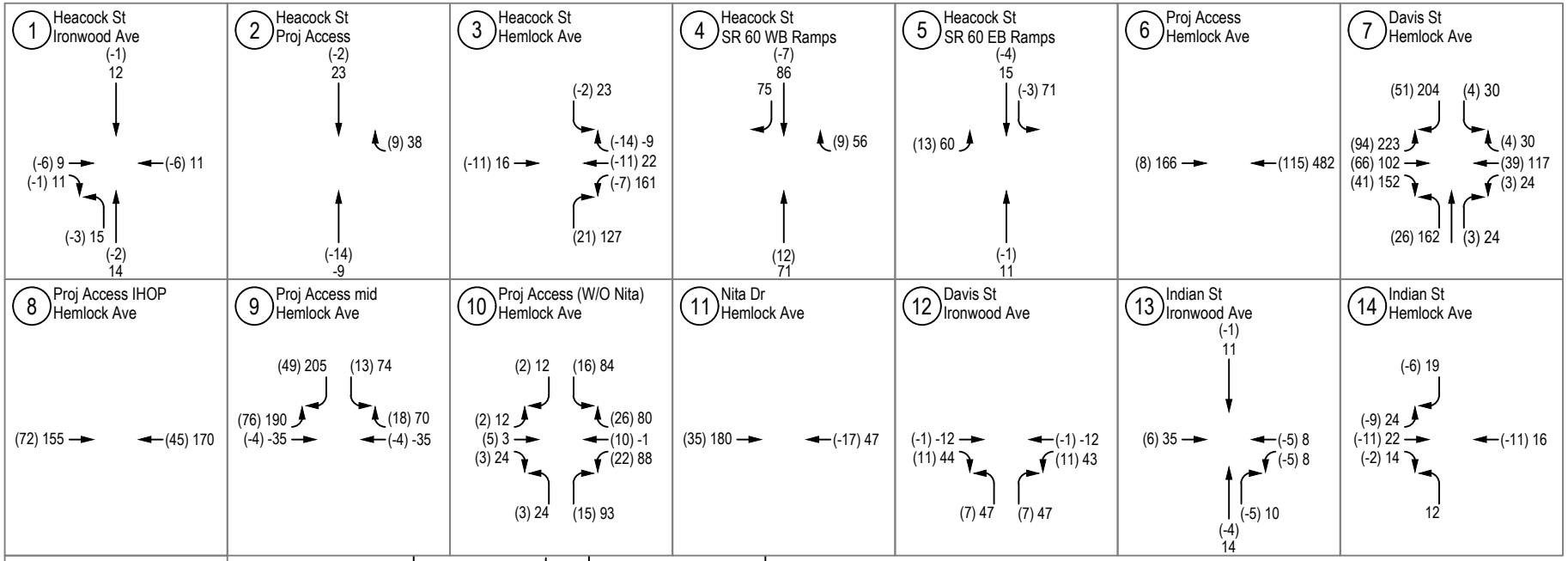
Business Park Distribution Inbound

Festival at Moreno Valley

FIGURE 9

transpogroup
WHAT TRANSPORTATION CAN BE.

Dec 04, 2017 - 4:26pm emilyc C:\Users\emilyc\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig9-Business Park Distribution Inbound

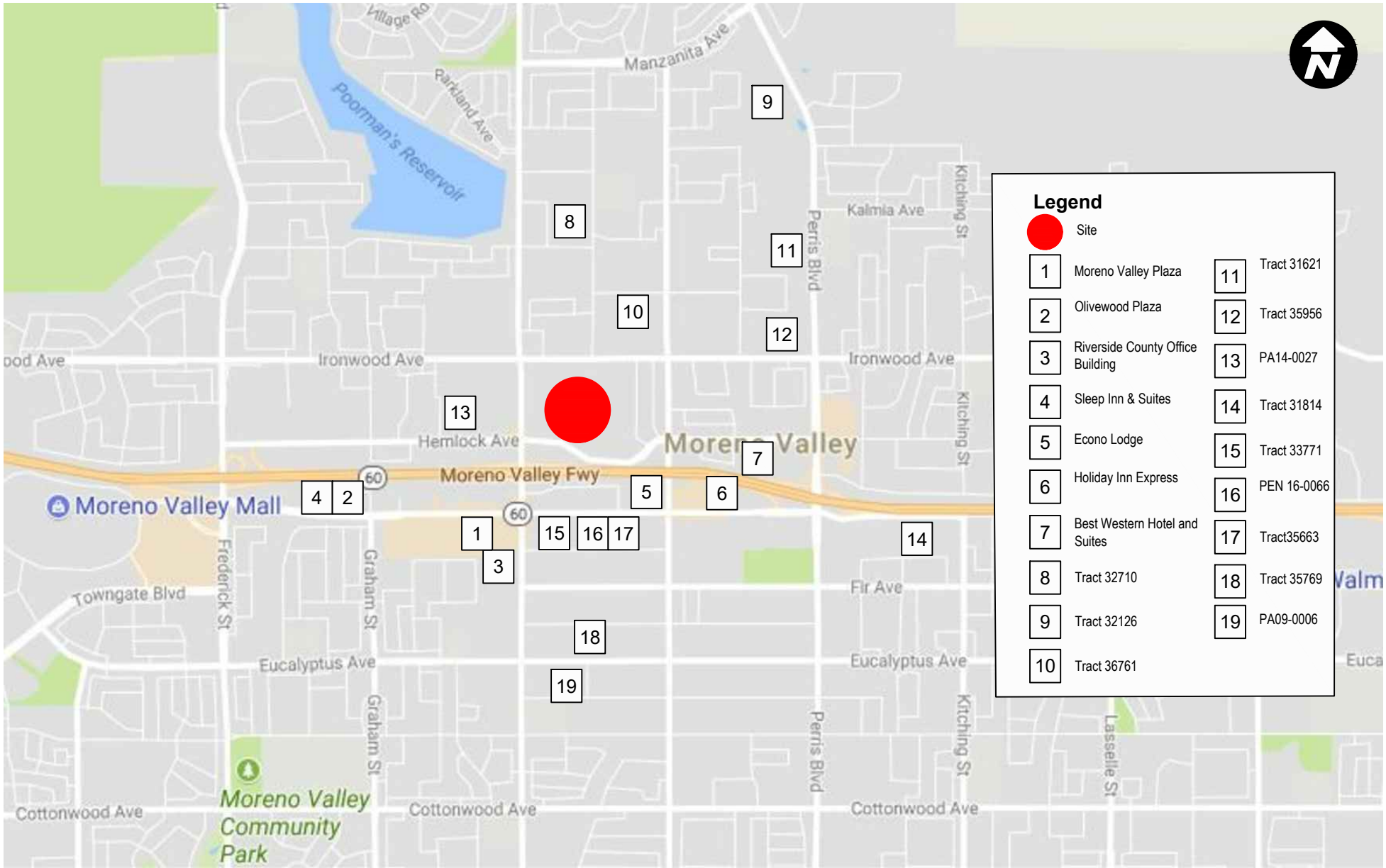


Project Trip Distribution and Assignment

Festival at Moreno Valley

FIGURE 10

transpogroup WHAT TRANSPORTATION CAN BE.



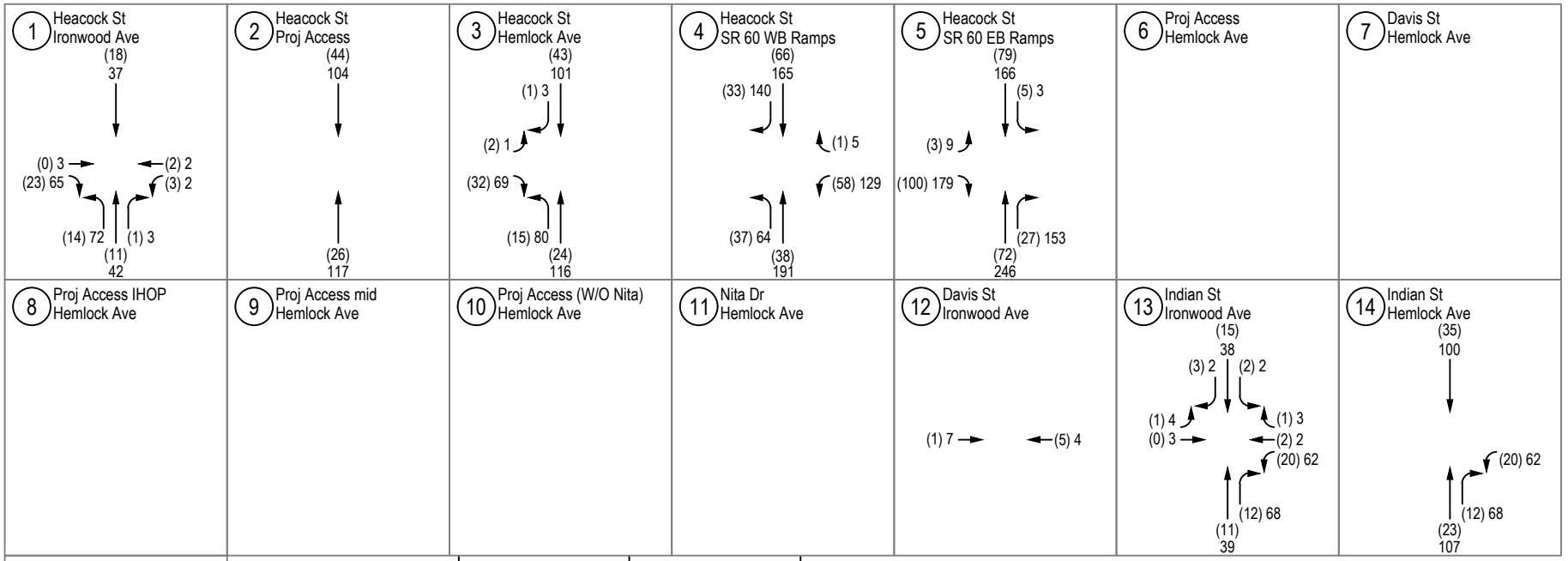
Source: City of Moreno Valley, November 2017.

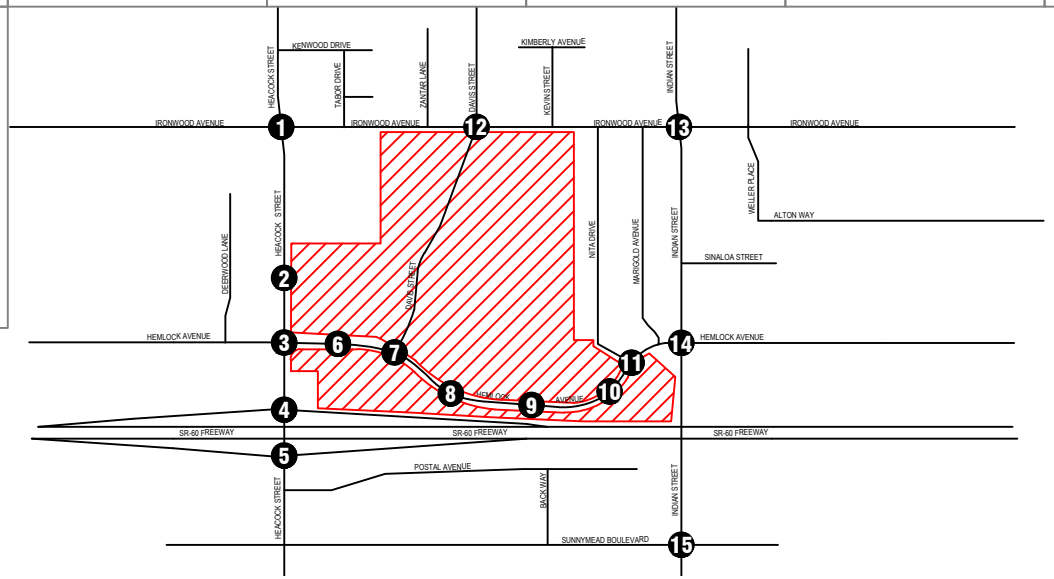
Locations of Cumulative Projects

Festival at Moreno Valley

FIGURE 11

transpogroup
WHAT TRANSPORTATION CAN BE.





NOT TO SCALE

Legend

- Site
- X Weekday PM Peak Hour Traffic Volumes
- (X) Weekday AM Peak Hour Traffic Volumes
- (X) Study Intersection

Cumulative Projects Trip Assignment

Festival at Moreno Valley

FIGURE 12

transpogroup
WHAT TRANSPORTATION CAN BE.

Dec 04, 2017 - 4:37pm emilyc C:\Users\emilyc\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig12-Cumulative Projects Trip Assignment

IV. Traffic Analysis

This section describes analysis results for existing with-project, Near Term Year (2022) baseline, Near Term Year (2022) with-project conditions and the General Plan build-out (2040) without and with project conditions. Operations for existing conditions were illustrated earlier in Section II and also are summarized in this section as part of the comparison to existing plus project conditions.
Operations for both intersections and roadway segments are described along with signal warrant analysis. Mitigation measures are discussed in Section V.

Existing With-Project

Intersection Operations

Level of Service Analysis

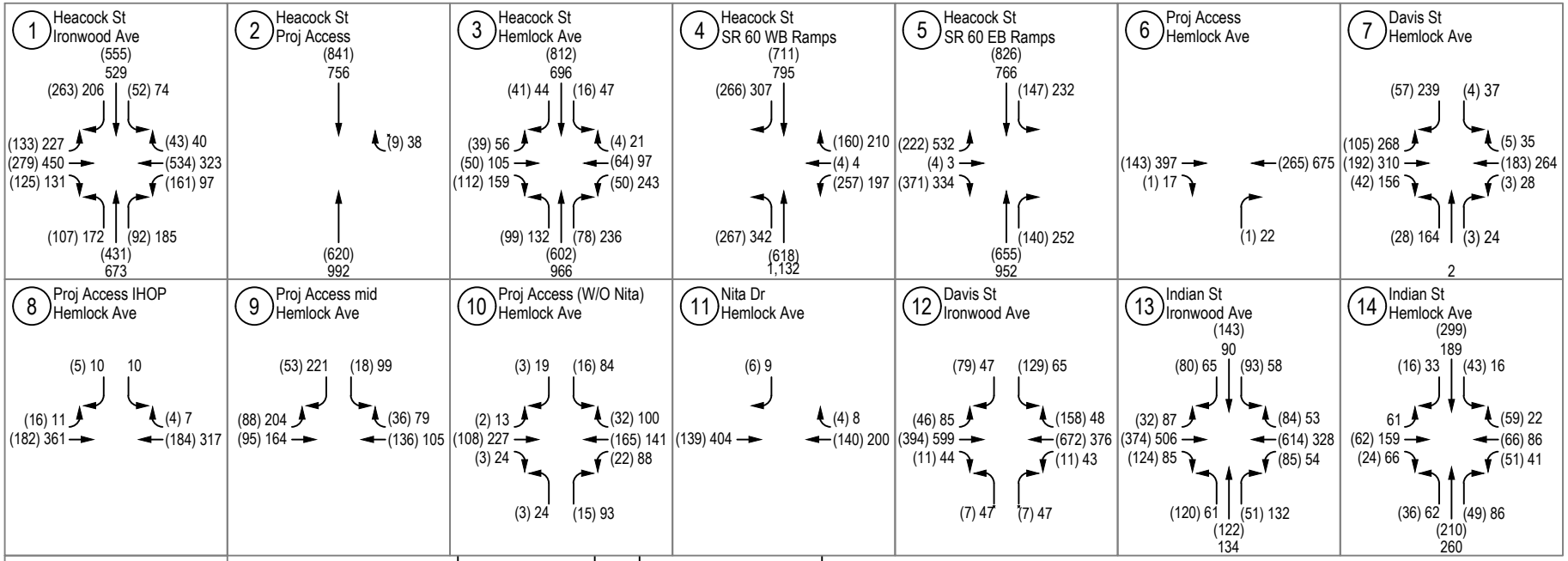
Intersection with-project traffic volumes were obtained by adding the project trip assignments (shown in Figure 10) during the AM and PM peak hours to the existing volumes at the intersection. Figure 13 illustrates the existing with-project traffic volumes at the study area intersections. An intersection operations analysis was conducted for the study area to evaluate the Existing with-Project weekday AM and PM peak hour conditions with the project. Intersection operations were calculated using the LOS methodology described previously. Table 13 provides a comparison between the Existing without and with-project conditions for the weekday AM and PM peak hours. Detailed LOS worksheets are included in Appendix C.

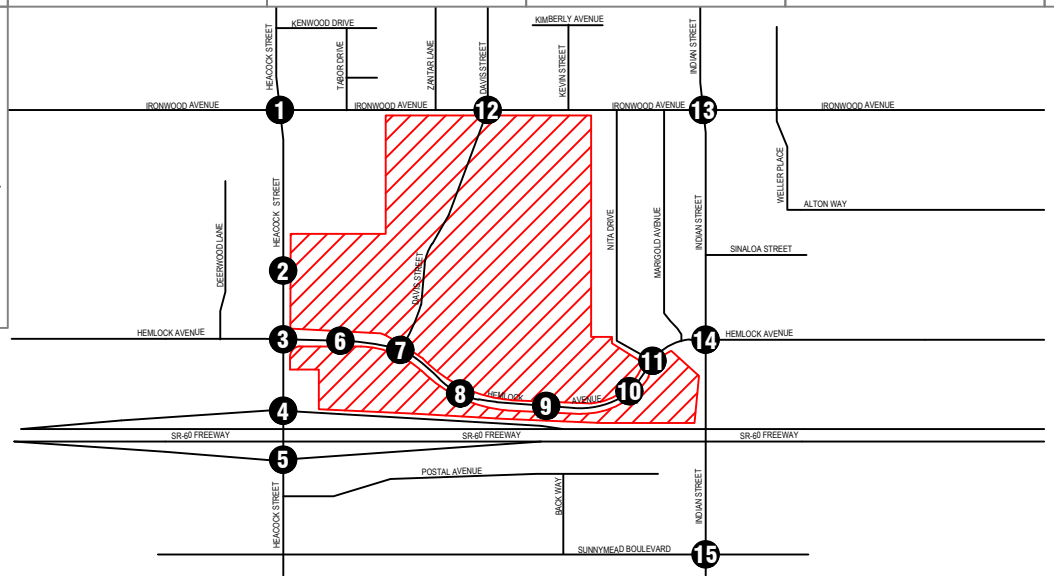
As shown in the Table 13, the Davis Street/Hemlock Avenue intersection is forecast to operate at LOS F during the PM peak hour with the project. The addition of project traffic is expected to increase the delay at the intersection leading to a LOS F under Existing with-Project PM peak hour conditions. This increase is considered a significant impact per the City's unsignalized intersection significance criteria (LOS C). Mitigation measures are discussed in the following section.

Queuing Analysis

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table 14 with detailed calculation in Appendix C.

Table 13 shows that the existing 95th percentile queue lengths that exceed storage space under Existing with-Project conditions. As mentioned earlier, the 95th percentile queue is not necessarily ever observed, it is simply based on statistical calculations. It is however used by many jurisdictions as the basis for calculating storage lengths. When Synchro yielded "95th percentile volume exceeds capacity, queue maybe longer", the queues were evaluated in Simtraffic. Mitigation measures are illustrated in Section V.





NOT TO SCALE

Legend

- Site
- X Weekday PM Peak Hour Traffic Volumes
- (X) Weekday AM Peak Hour Traffic Volumes
- (X) Study Intersection

Existing Plus Project AM and PM Peak Hour Traffic Volumes

Festival at Moreno Valley

FIGURE 13

transpogroup WHAT TRANSPORTATION CAN BE.

Dec 04, 2017 - 4:36pm emilyc C:\Users\emilyc\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig13-exwp traffic volumes

Table 13. Existing and Existing with-Project Peak Hour Intersection LOS

Intersection	Traffic Control	City LOS Standard	Existing				Existing with-Project				Delay Change		Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]				
1. Heacock Street/Ironwood Avenue	Signal	LOS D	C	26.9	C	28	C	26.7	C	28.9	-0.2	0.9	NO	NO
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0	A	0	B	10.5	B	12.6	10.5	12.6	NO	NO
3. Heacock Street/Hemlock Avenue	Signal	LOS D	B	18.9	C	22.3	B	18.0	C	31.5	-0.9	9.2	NO	NO
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	21.8	B	19.6	C	21.7	C	22.6	-0.1	3.0	NO	NO
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	21.9	C	21.8	C	21.9	C	23.8	0.0	2.0	NO	NO
6. Project Access/Hemlock Avenue	OWSC	LOS C	A	8.7	A	9.9	A	8.7	A	9.7	0.0	-0.2	NO	NO
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.1	B	13.5	C	18.4	**F**	**1371.9**	7.3	1358.4	NO	**YES**
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.1	B	10	A	9.4	B	11.7	0.3	1.7	NO	NO
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.7	B	10.3	B	10.2	C	18.1	0.5	7.8	NO	NO
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.1	B	11.6	C	22.8	2.4	13.7	NO	NO
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.2	A	9.2	A	9.1	A	9.4	-0.1	0.2	NO	NO
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	25.8	C	33	C	25.9	C	28.4	0.1	-4.6	NO	NO
13. Indian Street/Ironwood Avenue	Signal	LOS D	C	32.1	C	25.9	C	32.0	C	26.3	-0.1	0.4	NO	NO
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	22.3	C	22.1	C	21.4	C	23.6	-0.9	1.5	NO	NO
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	21.2	C	27.3	C	21.2	C	27.2	0.0	-0.1	NO	NO

1. Level of Service
2. Delay measured in seconds/vehicle
3. Delay and LOS are based on Highway Capacity Manual 2010
4. Signal = Traffic Signal (evaluated using the HCM Methodology)
5. TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)
6. OWSC = One Way Stop Controlled (evaluated using the HCM Methodology)
7. The decrease (in delay per vehicle) with project is not unusual when trips are added to the minor approach

Table 14. Existing With-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	Existing 95th Percentile Queue[1]		Existing With-Project 95th Percentile Queue[1]		Exceeds Existing Pocket Length?	
			AM	PM	AM	PM	AM	PM
1. Heacock Street/Ironwood Avenue	EBL	90	149	287	149	**128**	**Yes**	**Yes**
	WBL	135	198	107	**180**	108	**Yes**	No
	NBL	140	127	172	124	**188**	No	**Yes**
	SBL	100	70	87	70	88	No	No
2. Heacock Street/(new) Project Access		No pocket Lanes and/or No Queues						
3. Heacock Street/Hemlock Avenue	EBL	70	50	70	49	71	No	**Yes**
	WBL	360	66	92	59	**337**	No	No
	NBL	100	98	136	95	138	No	**Yes**
	SBL	95	31	39	27	62	No	No
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	239	329	**230**	**262**	**Yes**	**Yes**
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	101	213	106	243	**Yes**	**Yes**
	SBL	190	150	160	147	212	No	**Yes**
6. Project Access/Hemlock Avenue		No pocket Lanes and/or No Queues						
7. Davis Street/Hemlock Avenue	EBL	180	0	3	0	0	No	No
8. Project Access IHOP/Hemlock Avenue		No pocket Lanes and/or No Queues						
9. Project Access (middle dwy)/Hemlock Avenue		No pocket Lanes and/or No Queues						
10. Project Access (w/o Nita Dr)/Hemlock		No pocket Lanes and/or No Queues						
11. Nita Drive/Hemlock Avenue		No pocket Lanes and/or No Queues						
12. Davis Street/Ironwood Avenue	EBL	150	93	182	**82**	**146**	No	**Yes**
	SBL	40	109	61	112	46	**Yes**	**Yes**
13. Indian Street/Ironwood Avenue	EBL	95	51	102	51	104	No	**Yes**
	WBL	100	109	64	104	72	**Yes**	No
	NBL	110	139	78	140	78	**Yes**	No
	SBL	80	112	75	113	76	**Yes**	No
14. Indian Street/Hemlock Avenue	EBL	150	19	46	0	68	No	No
	WBL	80	56	50	57	50	No	No
	NBL	145	50	62	50	76	No	No
	SBL	100	54	28	53	29	No	No
15. Indian Street/Sunnymead Boulevard	EBL	90	62	172	62	**138**	No	**Yes**
	WBL	100	33	61	33	61	No	No
	NBL	145	89	104	89	104	No	No
	SBL	90	68	77	68	77	No	No

1. Calculated using Synchro – bold numbers indicate where Synchro yielded "95th percentile volume exceeds capacity, queue maybe longer." The queues were evaluated in Simtraffic at these locations.

Signal Warrant Analysis

The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. It was found that the Hemlock Ave / Davis St intersection meets the 8-Hour, 4-Hour, and Peak-Hour signal warrants and as such signalization is recommended. The detailed worksheets are provided in Appendix C.

Roadway Operations

Based on the analysis methodology described in Section I, the existing with-project traffic daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values (presented in Table 4) and the existing traffic daily volumes LOS values. Table 15 presents the results of the existing with-project roadway segment LOS analysis.

Based on the existing with-project roadway segment analysis, all study area roadway segments currently operate with LOS D or better.

Table 15. Existing Condition Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT[3]	Existing ADT[1]	Existing V/C Ratio	Existing LOS[2]	Existing with-Project ADT[5]	Existing with-Project V/C Ratio	Existing with Project LOS[2]	V/C Ratio Change	Impact
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	23,701	0.632	B	24,768	0.660	B	0.028	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	26,802	0.715	C	33,124	0.883	D	0.169	No
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	6,632	0.531	A	7,483	0.599	A	0.068	No
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	7,667	0.613	B	8,202	0.656	B	0.043	No
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	15,447	0.412	A	16,299	0.435	A	0.023	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	13,752	0.367	A	14,070	0.375	A	0.008	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	13,016	0.347	A	13,527	0.361	A	0.014	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	5,441	0.435	A	6,077	0.486	A	0.051	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	5,832	0.156	A	13,715	0.366	A	0.210	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	5,176	0.414	A	5,812	0.465	A	0.051	No

1. ADT: Average Daily Traffic
2. LOS based on City of Moreno Valley Roadway Segment LOS Values (Table 4)
3. Based on City of Moreno Valley Guidelines daily service volume standards table (LOS E). Four Lane Divided Arterial and Two Lane Industrial Collector used as classifications.
4. Roadway classification and LOS standard not listed in City Guidelines, assumed to be Minor Arterial, Two Lane Industrial Collector, with LOS Standard C.

Near Term Year (2022) Without-Project

Intersection Operations

Level of Service Analysis

Traffic volumes for the Near Term Year (2022) without-project (baseline) scenario where obtained by adding existing traffic, ambient growth (assuming 2% growth per year) and cumulative traffic volumes. Figure 14 shows the AM and PM Near Term Year (2022) AM and PM traffic volumes at study area intersections and Table 16 illustrates the Peak Hour Level of Service Analysis.

As shown in the table, the Heacock Street/State Route (SR 60) WB Ramps intersection as well as the Indian Street/Sunnymead Boulevard are forecast to operate at LOS E during the PM peak hour without the project. Both intersections are considered to be sub-standard per the City's guidelines.

Table 16. Near Term Year Without-Project Weekday Peak Hour Intersection LOS

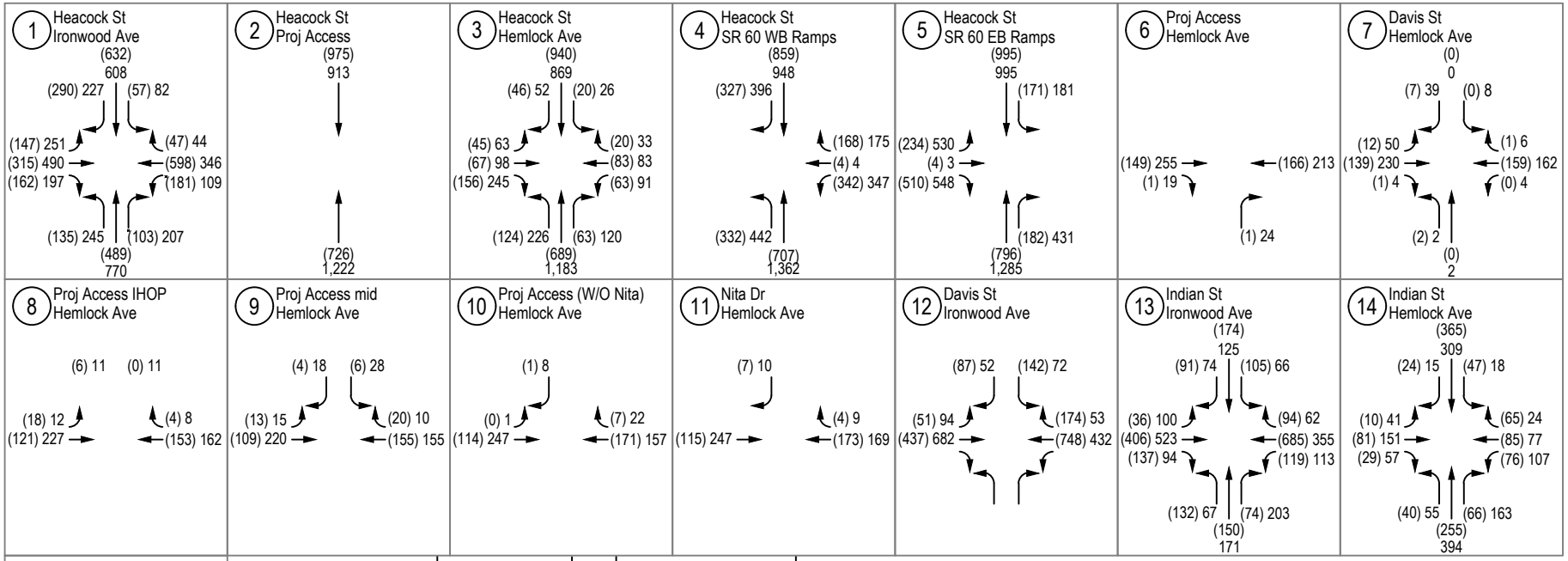
Intersection	Traffic Control	City's LOS Standard	AM Peak		PM Peak	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. Heacock Street/Ironwood Avenue	Signal	LOS D	C	30.3	D	35.1
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0
3. Heacock Street/Hemlock Avenue	Signal	LOS D	C	22.6	C	33.4
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	34.8	**E**	**58.6**
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	34.3	D	42.0
6. (new) Project Access/Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.0
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.5	B	14.2
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.2	B	10.2
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.9	B	10.6
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.2
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.3
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	27.5	D	36.5
13. Indian Street/Ironwood Avenue	Signal	LOS D	D	36.0	C	28.4
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	23.7	C	24.6
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	23.4	**E**	**61.0**

1. Level of Service
2. Delay measured in seconds/vehicle
3. Delay and LOS are based on Highway Capacity Manual 2010
4. Signal = Traffic Signal (evaluated using the HCM Methodology)
5. TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)
6. OWSC = One Way Stop Controlled (evaluated using the HCM Methodology)

Queuing Analysis

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table 17 with detailed calculation in Appendix C.

Table 17 shows that the existing 95th percentile queue lengths exceed storage space under Existing with-Project conditions. Mitigation measures are presented in Section V.



Near-Term 2022 Baseline AM and PM Peak Hour Traffic Volumes

FIGURE 14

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.

Table 17. Near Term Year Without-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	Near Term Year 95th Percentile Queue[1]		Exceeds Existing Pocket Length?	
			AM	PM	AM	PM
1. Heacock Street/Ironwood Avenue	EBL	90	**128**	**132**	**Yes**	**Yes**
	WBL	135	**187**	122	**Yes**	No
	NBL	140	152	**208**	**Yes**	**Yes**
	SBL	100	76	96	No	No
2. Heacock Street/(new) Project Access	No pocket Lanes and/or No Queues					
3. Heacock Street/Hemlock Avenue	EBL	70	57	79	No	**Yes**
	WBL	360	73	104	No	No
	NBL	100	**124**	**170**	**Yes**	**Yes**
	SBL	95	34	42	No	No
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	**254**	**246**	**Yes**	**Yes**
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	**111**	**243**	**Yes**	**Yes**
	SBL	190	165	176	No	No
6. Project Access/Hemlock Avenue	No pocket Lanes and/or No Queues					
7. Davis Street/Hemlock Avenue	EBL	180	0	3	No	No
8. Project Access IHOP/Hemlock Avenue	No pocket Lanes and/or No Queues					
9. Project Access (middle dwy)/Hemlock Avenue	No pocket Lanes and/or No Queues					
10. Project Access (w/o Nita Dr)/Hemlock Avenue	No pocket Lanes and/or No Queues					
11. Nita Drive/Hemlock Avenue	No pocket Lanes and/or No Queues					
12. Davis Street/Ironwood Avenue	EBL	150	92	**209**	No	**Yes**
	SBL	40	122	66	**Yes**	**Yes**
13. Indian Street/Ironwood Avenue	EBL	95	56	**119**	No	**Yes**
	WBL	100	**139**	**132**	**Yes**	**Yes**
	NBL	110	**152**	86	**Yes**	No
	SBL	80	**124**	**85**	**Yes**	**Yes**
14. Indian Street/Hemlock Avenue	EBL	150	21	51	No	No
	WBL	80	77	**106**	No	**Yes**
	NBL	145	55	69	No	No
	SBL	100	59	31	No	No
15. Indian Street/Sunnymead Boulevard	EBL	90	**130**	**115**	**Yes**	**Yes**
	WBL	100	38	66	No	No
	NBL	145	110	143	No	No
	SBL	90	77	25	No	No

1. Calculated using Synchro –bold numbers indicate where Synchro yielded "95th percentile volume exceeds capacity, queue maybe longer." The queues were evaluated in Simtraffic at these locations.

Signal Warrant Analysis

The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization under without-project conditions. The signal warrant analysis sheets are provided in Appendix C.

Roadway Operations

Roadway traffic volumes were calculated by adding existing volumes to ambient growth and cumulative projects daily volumes. Based on the analysis methodology described in Section I, the Near Term Year (2022) without-project traffic daily traffic volumes at the study area roadway segments yield the LOS values illustrated in Table 18.

Based on the Near Term Year (2022) without-project segment analysis, all study area roadway segments currently operate with LOS D or better with the exception of Heacock Street between Hemlock and the SR 60 WB Ramps and Indian Street South of Hemlock Avenue which operate at a LOS E.

Table 18. Near Term Year With-out Project Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT[3]	LOS Standard[2]	ADT[1]	V/C	LOS	Exceeds Threshold?
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	LOS D	29,320	0.782	C	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	LOS D	34,101	0.909	**E**	**Yes**
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	LOS D	9,206	0.737	C	No
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	LOS D	11,507	0.921	**E**	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	LOS C	18,329	0.489	A	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	LOS C	15,284	0.408	A	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	LOS C	15,618	0.416	A	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	LOS C	7,450	0.596	A	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	LOS C	6,439	0.172	A	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	LOS C	6,873	0.550	A	No

1. ADT: Average Daily Traffic Calculated by growing existing volumes by 2% per year and adding cumulative projects traffic
2. LOS based on City of Moreno Valley Roadway Segment LOS Values (Table 4)
3. Based on City of Moreno Valley Guidelines daily service volume standards table (LOS E). Four Lane Divided Arterial and Two Lane Industrial Collector used as classifications.
4. Roadway classification and LOS standard not listed in City Guidelines, assumed to be Minor Arterial, Two Lane Industrial Collector, with LOS Standard C.

Near Term Year (2022) With-Project

Intersection Operations

Level of Service Analysis

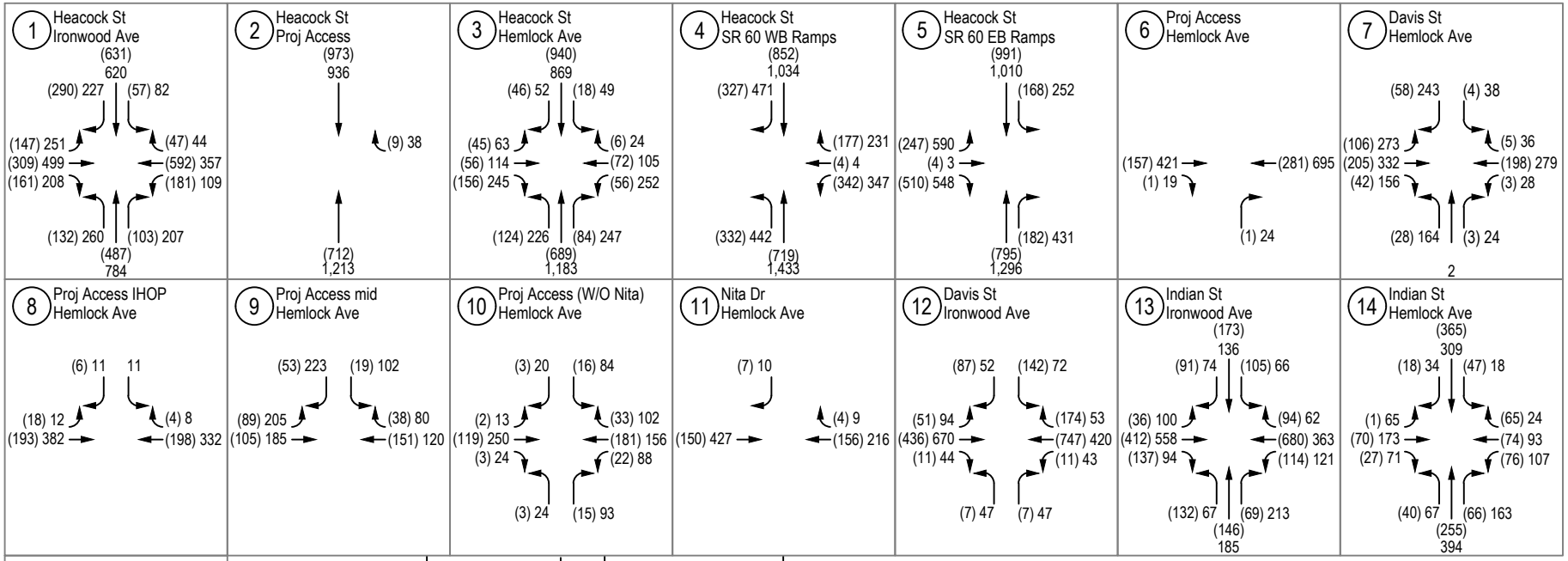
Traffic volumes for the Near Term Year (2022) with-project scenario where obtained by adding project traffic volumes (shown in Figure 10) to the Near Term (2022) without-project volumes. Figure 15 shows the AM and PM Near Term Year (2022) with-project AM and PM traffic volumes at study area intersections and Table 19 illustrates the Peak Hour intersection Level of Service Analysis.

As shown in the table, the Heacock Street/State Route (SR 60) WB Ramps intersection as well as the Davis Street/Hemlock Avenue are forecast to operate at LOS F during the PM peak hour with project. Davis Street/Ironwood Avenue are Indian Street/Sunnymead Boulevard are forecast to operate at LOS D and LOS E respectively during the PM peak hour with project. All these intersections are considered to be sub-standard per the City's guidelines. Mitigation measure will be discussed in the following section.

Queuing Analysis

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table 20 with detailed calculation in Appendix C.

Table 20 shows that the existing 95th percentile queue lengths exceed storage space under Near Term with-Project conditions. Mitigations are presented in the following section.



Near-Term 2022 plus Project AM and PM Peak Hour Traffic Volumes

FIGURE 15

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.

Table 19. Near Term with-Project Peak Hour Intersection LOS

Intersection	Traffic Control	City LOS Standard	Near Term (2022) without-Project				Near Term (2022) with-Project				Delay Change		Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]				
1. Heacock Street/Ironwood Avenue	Signal	LOS D	C	30.3	D	35.1	C	30.0	D	36.7	-0.3	1.6	NO	NO
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0	B	10.9	B	14.2	10.9	14.2	NO	NO
3. Heacock Street/Hemlock Avenue	Signal	LOS D	C	22.6	C	33.4	C	21.7	D	49.5	-0.9	16.1	NO	NO
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	34.8	**E**	**58.6**	C	34.4	**F**	**81.1**	-0.4	22.5	NO	**YES**
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	34.3	D	42.0	C	34.2	D	46.1	-0.1	4.1	NO	NO
6. Project Access/Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.0	A	8.8	B	10.7	0.0	0.7	NO	NO
7. Davis Street/Hemlock Avenue	TWSC	LOS C	B	11.5	B	14.2	C	19.4	**F**	**1617.9**	7.9	1603.7	NO	**YES**
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.2	B	10.2	A	9.5	B	11.9	0.3	1.7	NO	NO
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	A	9.9	B	10.6	B	10.4	C	19.5	0.5	8.9	NO	NO
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.2	B	11.9	C	24.7	2.6	15.5	NO	NO
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.3	A	9.3	A	9.2	A	9.5	-0.1	0.2	NO	NO
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	27.5	D	36.5	C	27.7	**D**	**35.7**	0.2	-0.8	NO	**YES**
13. Indian Street/Ironwood Avenue	Signal	LOS D	D	36.0	C	28.4	D	35.8	C	29.1	-0.2	0.7	NO	NO
14. Indian Street/Hemlock Avenue	Signal	LOS D	C	23.7	C	24.6	C	22.9	C	26.2	-0.8	1.6	NO	NO
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	C	23.4	**E**	**61.0**	C	23.4	**E**	**60.6**	0.0	-0.4	NO	**YES**

1. Level of Service
2. Delay measured in seconds/vehicle
3. Delay and LOS are based on Highway Capacity Manual 2010
4. Signal = Traffic Signal (evaluated using the HCM Methodology)
5. TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)
6. OWSC = One Way Stop Controlled (evaluated using the HCM Methodology)
7. The decrease (in delay per vehicle) with project is not unusual when trips are added to the minor approach

Table 20. Near Term With-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	Near Term Without Project 95th Percentile Queue[1]		Near Term With-Project 95th Percentile Queue[1]		Exceeds Existing Pocket Length?	
			AM	PM	AM	PM	AM	PM
1. Heacock Street/Ironwood Avenue	EBL	90	**128**	**132**	**129**	**117**	**Yes**	**Yes**
	WBL	135	**187**	122	**187**	122	**Yes**	No
	NBL	140	152	**208**	148	**194**	**Yes**	**Yes**
	SBL	100	76	96	76	96	No	No
2. Heacock Street/(new) Project Access		No pocket Lanes and/or No Queues						
3. Heacock Street/Hemlock Avenue	EBL	70	57	79	56	79	No	**Yes**
	WBL	360	73	104	65	**327**	No	**Yes**
	NBL	100	**124**	**170**	**120**	**151**	**Yes**	**Yes**
	SBL	95	34	42	31	65	No	No
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	**254**	**246**	**260**	**264**	**Yes**	**Yes**
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	111	243	116	272	**Yes**	**Yes**
	SBL	190	165	176	162	226	No	**Yes**
6. Project Access/Hemlock Avenue		No pocket Lanes and/or No Queues						
7. Davis Street/Hemlock Avenue	EBL	180	0	3	7.5	25	No	No
8. Project Access IHOP/Hemlock Avenue		No pocket Lanes and/or No Queues						
9. Project Access (middle dwy)/Hemlock		No pocket Lanes and/or No Queues						
10. Project Access (w/o Nita Dr)/Hemlock		No pocket Lanes and/or No Queues						
11. Nita Drive/Hemlock Avenue		No pocket Lanes and/or No Queues						
12. Davis Street/Ironwood Avenue	EBL	150	**92**	**209**	**102**	**210**	No	**Yes**
	SBL	40	122	66	**122**	**66**	**Yes**	**Yes**
13. Indian Street/Ironwood Avenue	EBL	95	56	119	56	119	No	**Yes**
	WBL	100	139	132	**134**	**140**	**Yes**	**Yes**
	NBL	110	152	86	**152**	86	**Yes**	No
	SBL	80	124	85	**124**	**85**	**Yes**	**Yes**
14. Indian Street/Hemlock Avenue	EBL	150	21	51	5	72	No	No
	WBL	80	77	106	77	**109**	No	**Yes**
	NBL	145	55	69	54	85	No	No
	SBL	100	59	31	58	32	No	No
15. Indian Street/Sunnymead Boulevard	EBL	90	130	**115**	**130**	**124**	**Yes**	**Yes**
	WBL	100	38	66	38	66	No	No
	NBL	145	110	143	110	143	No	No
	SBL	90	77	25	21	83	No	No

1. Calculated using Synchro –bold numbers indicate where Synchro yielded "95th percentile volume exceeds capacity, queue maybe longer." The queues were evaluated in Simtraffic at these locations.

Signal Warrant Analysis

The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. It was found that the Hemlock Ave / Davis St intersection meets the 8-Hour, 4-Hour, and Peak-Hour signal warrants and as such signalization is recommended. The signal warrant analysis sheets are provided in Appendix C.

Roadway Operations

Based on the analysis methodology described in Section I, the Near Term Year (2022) with-project traffic daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values and the with-out project traffic daily volumes LOS values. Table 21 presents the results of the Near Term Year (2022) with-project roadway segment LOS analysis.

Table 21 shows that, all study area roadway segments operate with an acceptable LOS except Heacock Street (Hemlock Avenue to SR 60 WB Ramps) and Indian Street (South of Hemlock Avenue). Mitigation measures are illustrated in Section V.

Table 21. Near Term Year Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT[3]	Near Term With-out Project ADT[1]	Near Term With-out Project V/C Ratio	Near Term With-out Project LOS[2]	Near Term With Project ADT[5]	Near Term with-Project V/C Ratio	Near Term with-Project LOS[2]	V/C Ratio Change	Impact
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	29,320	0.782	C	30,387	0.810	D	0.028	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	34,101	0.909	E	40,423	1.078	**F**	0.169	**Yes**
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	9,206	0.737	C	10,057	0.805	D	0.068	No
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	11,507	0.921	E	12,042	0.963	**E**	0.043	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	18,329	0.489	A	19,181	0.511	A	0.023	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	15,284	0.408	A	15,602	0.416	A	0.008	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	15,618	0.416	A	16,129	0.430	A	0.014	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	7,450	0.596	A	8,086	0.647	B	0.051	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	6,439	0.172	A	14,322	0.382	A	0.210	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	6,873	0.550	A	7,509	0.601	B	0.051	No

1. ADT: Average Daily Traffic
2. LOS based on City of Moreno Valley Roadway Segment LOS Values (Table 4)
3. Based on City of Moreno Valley Guidelines daily service volume standards table (LOS E). Four Lane Divided Arterial and Two Lane Industrial Collector used as classifications.
4. Roadway classification and LOS standard not listed in City Guidelines, assumed to be Minor Arterial, Two Lane Industrial Collector, with LOS Standard C.

General Plan Buildout Year (2040) Without-Project

Intersection Operations

Traffic volumes for the General Plan Buildout Year (2040) without-project (baseline) scenario where obtained from the Moreno Valley Transportation Analysis Model. The model results were post-processed using the 2007 model data, the existing 2017 traffic counts, and the 2035 model outputs. Figure 16 shows the AM and PM General Plan Buildout Year (2040) without-project AM and PM traffic volumes at study area intersections and Table 22 illustrates the Peak Hour Level of Service Analysis.

As shown in the table, the Indian Street/Ironwood Avenue is forecast to operate at LOS E during the AM peak hour with-out the project (City's LOS Standard is D). Indian Street/Ironwood and Indian Street/Sunnymead Boulevard are forecast to operate at LOS E during the AM and PM peak hour respectively with-out the project (City's LOS Standard is D). Mitigation measures will be discussed in the following section.

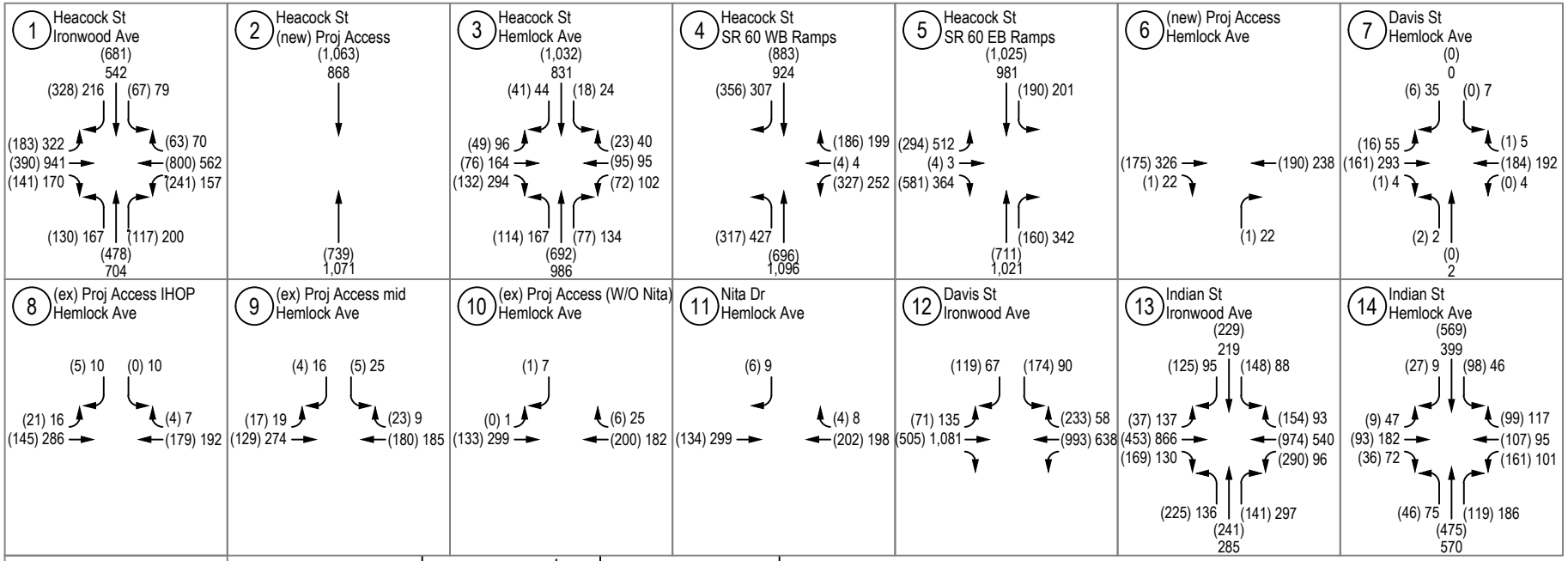
Table 22. General Plan Buildout Year Without-Project Peak Hour Intersection LOS

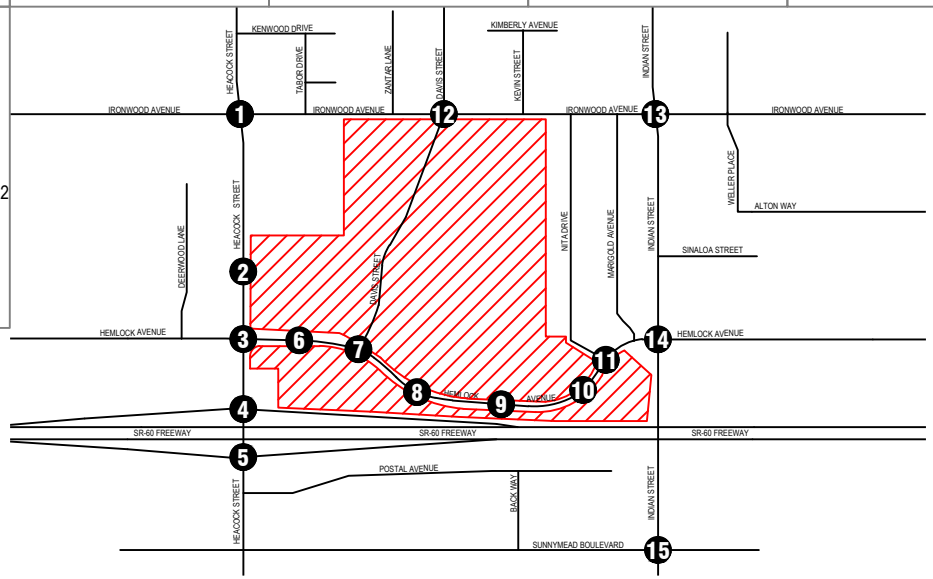
Intersection	Traffic Control	City's LOS Standard	AM Peak		PM Peak	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. Heacock Street/Ironwood Avenue	Signal	LOS D	D	36.7	D	35.7
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0
3. Heacock Street/Hemlock Avenue	Signal	LOS D	C	22.9	D	40.0
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	34.7	C	33.0
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	29.0	C	21.3
6. (new) Project Access/Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.3
7. Davis Street/Hemlock Avenue	TWSC	LOS C	A	9.8	C	16.1
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.4	B	10.6
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	B	10.1	B	11.0
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.5	A	9.4
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.5	A	9.4
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	25.2	B	16.0
13. Indian Street/Ironwood Avenue	Signal	LOS D	**E**	**56.5**	D	36.8
14. Indian Street/Hemlock Avenue	Signal	LOS D	D	38.2	D	40.1
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	D	46.0	**E**	**66.8**

1. Level of Service
2. Delay measured in seconds/vehicle
3. Delay and LOS are based on Highway Capacity Manual 2010
4. Signal = Traffic Signal (evaluated using the HCM Methodology)
5. TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)
6. OWSC = One Way Stop Controlled (evaluated using the HCM Methodology)

Queuing Analysis

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table 23 with detailed calculations in Appendix C.





Legend

- Site
- X Weekday PM Peak Hour Traffic Volumes
- (X) Weekday AM Peak Hour Traffic Volumes
- (X) Study Intersection

NOT TO SCALE

General Plan Build-out (2040) Baseline AM and PM Peak Hour Traffic Volumes

FIGURE 16

Festival at Moreno Valley

transpogroup WHAT TRANSPORTATION CAN BE.

Table 23 shows that the build-out year 95th percentile queue lengths exceed storage space under without-Project conditions. As mentioned earlier, the 95th percentile queue is not necessarily ever observed, it is simply based on statistical calculations. It is however used by many jurisdictions as the basis for calculating storage lengths. Mitigation measures are presented in the following section.

Table 23. General Plan Without-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	Build-out Year 95th Percentile Queue[1]		Exceeds Existing Pocket Length?	
			AM	PM	AM	PM
1. Heacock Street/Ironwood Avenue	EBL	90	**134**	**119**	**Yes**	**Yes**
	WBL	135	**193**	**170**	**Yes**	**Yes**
	NBL	140	**161**	**199**	**Yes**	**Yes**
	SBL	100	75	**124**	No	**Yes**
2. Heacock Street/(new) Project Access	No pocket Lanes and/or No Queues					
3. Heacock Street/Hemlock Avenue	EBL	70	57	**171**	No	**Yes**
	WBL	360	76	135	No	No
	NBL	100	**119**	**149**	**Yes**	**Yes**
	SBL	95	28	74	No	No
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	**250**	**248**	**Yes**	**Yes**
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	**100**	**183**	**Yes**	**Yes**
	SBL	190	148	136	No	No
6. Project Access/Hemlock Avenue	No pocket Lanes and/or No Queues					
7. Davis Street/Hemlock Avenue	EBL	180	0	3	No	No
8. Project Access IHOP/Hemlock Avenue	No pocket Lanes and/or No Queues					
9. Project Access (middle dwy)/Hemlock Avenue	No pocket Lanes and/or No Queues					
10. Project Access (w/o Nita Dr)/Hemlock Avenue	No pocket Lanes and/or No Queues					
11. Nita Drive/Hemlock Avenue	No pocket Lanes and/or No Queues					
12. Davis Street/Ironwood Avenue	EBL	150	92	100	No	No
	SBL	40	**119**	**59**	**Yes**	**Yes**
13. Indian Street/Ironwood Avenue	EBL	95	54	144	No	**Yes**
	WBL	100	**132**	**125**	**Yes**	**Yes**
	NBL	110	**155**	**154**	**Yes**	**Yes**
	SBL	80	**125**	**115**	**Yes**	**Yes**
14. Indian Street/Hemlock Avenue	EBL	150	23	77	No	No
	WBL	80	**196**	**143**	**Yes**	**Yes**
	NBL	145	76	118	No	No
	SBL	100	**126**	80	**Yes**	No
15. Indian Street/Sunnymead Boulevard	EBL	90	**138**	**119**	**Yes**	**Yes**
	WBL	100	62	**153**	No	**Yes**
	NBL	145	**205**	**192**	**Yes**	**Yes**
	SBL	90	**136**	**140**	**Yes**	**Yes**

1. Calculated using Synchro –bold numbers indicate where Synchro yielded "95th percentile volume exceeds capacity, queue maybe longer." The queues were evaluated in Simtraffic at these locations.

Signal Warrant Analysis

The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. No unsignalized intersection was found to meet the warrants for signalization. The signal warrant analysis sheets are provided in Appendix C.

Roadway Operations

Roadway traffic volumes were also obtained from the Moreno Valley Transportation Analysis Model. The model plots are presented in Appendix D. Based on the analysis methodology described in Section I, the General Plan Buildout Year (2040) without-project traffic daily traffic volumes at the study area roadway segments yield the LOS values illustrated in Table 24.

Table 24 shows that, all study area roadway segments operate with an acceptable LOS except for Indian Street between Ironwood and Hemlock and south of Hemlock.

Table 24. General Plan With-out Project Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT[3]	LOS Standard[2]	ADT[1]	V/C	LOS	Exceeds Threshold?
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	LOS D	26,600	0.709	B	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	LOS D	32,700	0.872	D	No
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	LOS D	18,400	1.472	F	**Yes**
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	LOS D	20,600	1.648	F	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	LOS C	24,900	0.664	B	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	LOS C	21,200	0.565	A	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	LOS C	23,400	0.624	B	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	LOS C	4,900	0.392	A	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	LOS C	20,900	0.557	A	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	LOS C	5,800	0.464	A	No

1. ADT: Average Daily Traffic calculated by growing the 2017 volumes using the model growth rates derived from 2007 and 2035 model volumes
2. LOS based on City of Moreno Valley Roadway Segment LOS Values (Table 4)
3. Based on City of Moreno Valley Guidelines daily service volume standards table (LOS E). Four Lane Divided Arterial and Two Lane Industrial Collector used as classifications.
4. Roadway classification and LOS standard not listed in City Guidelines, assumed to be Minor Arterial, Two Lane Industrial Collector, with LOS Standard C.

General Plan Buildout Year (2040) With-Project

Intersection Operations

Traffic volumes for the General Plan Buildout Year (2040) with-project scenario where obtained by adding project traffic volumes (shown in Figure 10) to the General Plan Buildout Year (2040) without-project volumes. Figure 17 shows the AM and PM General Plan Buildout Year (2040) with-project AM and PM traffic volumes at study area intersections and Table 25 illustrates the Peak Hour intersection Level of Service Analysis.

As shown in the table, the Davis Street/Hemlock Avenue and Indian Street/Sunnymead Blvd intersections are forecast to operate at LOS F during the PM peak hour with project. Heacock Street/Hemlock Avenue, the Project Access (w/o Nita Dr)/Hemlock Avenue and Indian Street/Ironwood Avenue intersections are also forecast to operate at sub-standard levels of services during the peak hour periods with project. Mitigation measures will be discussed in the following section.

Queuing Analysis

A queuing analysis was conducted at the study area intersections to determine if the left turn pocket (storage) lengths are able to accommodate queues. The 95th percentile queue calculations were calculated using Synchro for the weekday AM and weekday PM peak hours and results summary is presented in Table 26 with detailed calculation in Appendix C.

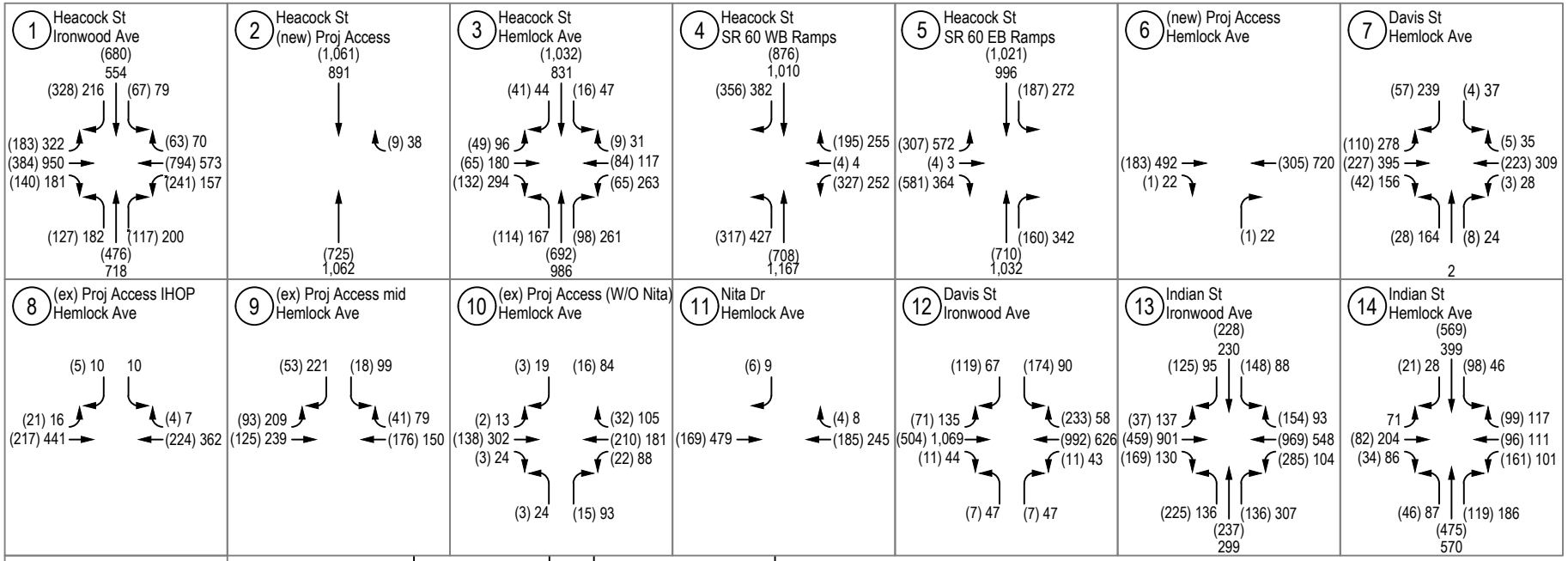
Table 26 shows that the existing 95th percentile queue lengths exceed storage space under the General Plan with-Project conditions.

Signal Warrant Analysis

The signal warrant analysis as per the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), was used for all study area intersections. It was found that the Hemlock Ave / Davis St intersection meets the 8-Hour, 4-Hour, and Peak-Hour signal warrants and as such signalization is recommended. It was also found that the 4-Hour warrants for the Middle Access and Hemlock (Intersection 9) are also met. The signal warrant analysis sheets are provided in Appendix C.

Roadway Operations

Based on the analysis methodology described in Section I, the General Plan Buildout Year (2040) with-project traffic daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values in Table 4 and the with-out project traffic daily volumes LOS values. Table 27 presents the results of the General Plan Buildout Year (2040) with-project roadway segment LOS analysis.
Based on the capacity analysis, all study area roadway segments operate with an acceptable LOS except for Indian Street (south and north of Hemlock) as well as Heacock St between Hemlock Ave and SR 60 WB Ramps.



General Plan Build-out (2040) plus Project AM and PM Peak Hour Traffic Volumes

FIGURE 17

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.

Table 25. General Plan Buildout with-Project Peak Hour Intersection LOS

Intersection	Traffic Control	City LOS Standard	General Plan Buildout without-Project				General Plan Buildout with-Project				Delay Change		Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]				
1. Heacock Street/Ironwood Avenue	Signal	LOS D	D	36.7	D	35.7	D	36.4	D	37.1	-0.3	1.4	NO	NO
2. Heacock Street/(new) Project Access	OWSC	LOS D	A	0.0	A	0.0	B	11.0	B	13.1	11.0	13.1	NO	NO
3. Heacock Street/Hemlock Avenue	Signal	LOS D	C	22.9	D	40.0	C	22.0	**E**	**55.8**	-0.9	15.8	NO	**YES**
4. Heacock Street/State Route (SR 60) WB Ramps	Signal	LOS D	C	34.7	C	33.0	C	34.2	D	44.5	-0.5	11.5	NO	NO
5. Heacock Street/State Route (SR 60) EB Ramps	Signal	LOS D	C	29.0	C	21.3	C	28.9	C	23.9	-0.1	2.6	NO	NO
6. Project Access/Hemlock Avenue	OWSC	LOS C	A	8.8	B	10.3	A	8.9	B	11.1	0.1	0.8	NO	NO
7. Davis Street/Hemlock Avenue	TWSC	LOS C	A	9.8	C	16.1	C	19.8	**F**	**2178.9**	10.0	2162.8	NO	**YES**
8. Project Access IHOP/Hemlock Avenue	OWSC	LOS C	A	9.4	B	10.6	A	9.7	B	12.4	0.3	1.8	NO	NO
9. Project Access (middle dwy)/Hemlock Avenue	OWSC	LOS C	B	10.1	B	11.0	B	10.6	C	21.8	0.5	10.8	NO	NO
10. Project Access (w/o Nita Dr)/Hemlock Avenue	OWSC	LOS C	A	9.5	A	9.4	B	12.5	**D**	**29.9**	3.0	20.5	NO	**YES**
11. Nita Drive/Hemlock Avenue	OWSC	LOS C	A	9.5	A	9.4	A	9.4	A	9.7	-0.1	0.3	NO	NO
12. Davis Street/Ironwood Avenue	Signal	LOS C	C	25.2	B	16.0	C	21.2	B	18.2	-4.0	2.2	NO	NO
13. Indian Street/Ironwood Avenue	Signal	LOS D	**E**	**56.5**	D	36.8	**E**	**56.0**	D	39.0	-0.5	2.2	**YES**	NO
14. Indian Street/Hemlock Avenue	Signal	LOS D	D	38.2	D	40.1	D	36.3	D	42.4	-1.9	2.3	NO	NO
15. Indian Street/Sunnymead Boulevard	Signal	LOS D	D	46.0	**E**	**66.8**	D	41.2	**F**	**120.0**	-4.8	53.2	NO	**YES**

1. Level of Service
2. Delay measured in seconds/vehicle
3. Delay and LOS are based on Highway Capacity Manual 2010
4. Signal = Traffic Signal (evaluated using the HCM Methodology)
5. TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)
6. OWSC = One Way Stop Controlled (evaluated using the HCM Methodology)
7. The decrease (in delay per vehicle) with project is not unusual when trips are added to the minor approach

Table 26. General Plan Build-out With-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	Build-out Without-Project 95th Percentile Queue[1]		Build-out With-Project 95th Percentile Queue[1]		Exceeds Existing Pocket Length?	
			AM	PM	AM	PM	AM	PM
1. Heacock Street/Ironwood Avenue	EBL	90	**134**	**119**	**137**	**116**	**Yes**	**Yes**
	WBL	135	**193**	**170**	**187**	**188**	**Yes**	**Yes**
	NBL	140	**161**	**199**	**153**	**194**	**Yes**	**Yes**
	SBL	100	75	**124**	75	**131**	No	**Yes**
2. Heacock Street/(new) Project Access	No pocket Lanes and/or No Queues							
3. Heacock Street/Hemlock Avenue	EBL	70	57	**171**	56	**102**	No	**Yes**
	WBL	360	76	135	28	291	No	No
	NBL	100	**119**	**149**	**116**	**154**	**Yes**	**Yes**
	SBL	95	28	74	25	60	No	No
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	**250**	**248**	**256**	**242**	**Yes**	**Yes**
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	100	183	104	**403**	**Yes**	**Yes**
	SBL	190	148	136	146	183	No	No
6. Project Access/Hemlock Avenue	No pocket Lanes and/or No Queues							
7. Davis Street/Hemlock Avenue	EBL	180	0	3	8	28	No	No
8. Project Access IHOP/Hemlock Avenue	No pocket Lanes and/or No Queues A							
9. Project Access (middle dwy)/Hemlock	No pocket Lanes and/or No Queues A							
10. Project Access (w/o Nita Dr)/Hemlock	No pocket Lanes and/or No Queues A							
11. Nita Drive/Hemlock Avenue	No pocket Lanes and/or No Queues A							
12. Davis Street/Ironwood Avenue	EBL	150	92	100	98	**151**	No	**Yes**
	SBL	40	**119**	**59**	**74**	**59**	**Yes**	**Yes**
13. Indian Street/Ironwood Avenue	EBL	95	54	**144**	54	**148**	**No**	**Yes**
	WBL	100	**132**	**125**	**131**	**128**	**Yes**	**Yes**
	NBL	110	**155**	**154**	**155**	**156**	**Yes**	**Yes**
	SBL	80	**125**	**115**	**126**	**118**	**Yes**	**Yes**
14. Indian Street/Hemlock Avenue	EBL	150	23	77	0	100	No	No
	WBL	80	**196**	**143**	**194**	**133**	**Yes**	**Yes**
	NBL	145	76	118	76	124	No	No
	SBL	100	**126**	80	**126**	74	**Yes**	No
15. Indian Street/Sunnymead Boulevard	EBL	90	**138**	**119**	**141**	**129**	**Yes**	**Yes**
	WBL	100	62	**153**	71	**134**	No	**Yes**
	NBL	145	**205**	**192**	**204**	**187**	**Yes**	**Yes**
	SBL	90	**136**	**140**	**137**	**145**	**Yes**	**Yes**

2. Calculated using Synchro –bold numbers indicate where Synchro yielded "95th percentile volume exceeds capacity, queue maybe longer." The queues were evaluated in Simtraffic at these locations.

Table 27. General Plan Buildout Condition Roadway Segment LOS Summary

Roadway Segment	Existing Classification	Maximum Capacity ADT[3]	Buildout With-out Project ADT[1]	Buildout With-out Project V/C Ratio	Buildout With-out Project LOS[2]	Buildout With Project ADT[5]	Buildout with-Project V/C Ratio	Buildout with-Project LOS[2]	V/C Ratio Change	Impact
1. Heacock Street - Ironwood Avenue to Hemlock Avenue	Arterial	37,500	26,600	0.709	B	27,667	0.738	C	0.028	No
2. Heacock Street - Hemlock Avenue to SR 60 WB Ramps	Arterial	37,500	32,700	0.872	D	**39,022**	**1.041**	**F**	0.169	**Yes**
3. Indian Street - Ironwood Avenue to Hemlock Avenue	Minor Arterial	12,500	**18,400**	**1.472**	**F**	**19,251**	**1.540**	**F**	0.068	**Yes**
4. Indian Street - South of Hemlock Avenue	Minor Arterial	12,500	**20,600**	**1.648**	**F**	**21,135**	**1.691**	**F**	0.043	**Yes**
5. Ironwood Avenue - West of Heacock Street	Minor Arterial	37,500	24,900	0.664	B	25,752	0.687	B	0.023	No
6. Ironwood Avenue - Heacock Street to Davis Street	Minor Arterial	37,500	21,200	0.565	A	21,518	0.574	A	0.008	No
7. Ironwood Avenue - East of Indian Street	Minor Arterial	37,500	23,400	0.624	B	23,911	0.638	A	0.014	No
8. Hemlock Avenue - West of Heacock Street[4]	Minor Arterial	12,500	4,900	0.392	A	5,536	0.443	A	0.051	No
9. Hemlock Avenue - Heacock Street to Davis Street[4]	Minor Arterial	37,500	20,900	0.557	A	28,783	0.768	B	0.210	No
10. Hemlock Avenue - East of Indian Street[4]	Minor Arterial	12,500	5,800	0.464	A	6,436	0.515	A	0.051	No

1. ADT: Average Daily Traffic
2. LOS based on City of Moreno Valley Roadway Segment LOS Values (Table 4)
3. Based on City of Moreno Valley Guidelines daily service volume standards table (LOS E). Four Lane Divided Arterial and Two Lane Industrial Collector used as classifications.
4. Roadway classification and LOS standard not listed in City Guidelines, assumed to be Minor Arterial, Two Lane Industrial Collector, with LOS Standard C.

V. Mitigation Measures

This section provides a summary of recommended mitigation measures necessary to address the cumulative traffic impacts. A summary of the operationally deficient study area intersections and roadway segments and recommended improvements required to achieve acceptable circulation system operational conditions are described below. It is important to note that Cumulative impacts are deficiencies that would not be directly caused by the project. The project would, however, contribute traffic to these deficient facilities along with other cumulative development projects, resulting in a cumulatively considerable impact.

The recommended mitigation measures necessary to reduce project impacts to less-than-significant are discussed below.

Intersections

Level of Service Mitigations

Based on the traffic analysis presented in the earlier sections, the following four intersections were observed to perform at a LOS below the City's standards.

1. Davis Street and Hemlock Avenue under all with-Project scenarios in the PM Peak Hour

A warrant analysis was performed for this intersection and it was found that the 8-hour, 4-hour, and peak-hour warrants are all met. As such it is recommended that this intersection be signalized. Installing a signal improved the LOS at this intersection to LOS B during the PM peak hours for all scenarios (cycle length is assumed at 60 seconds as per the City's guidelines). Signal warrant worksheets and LOS worksheets are attached in Appendix C.

Mitigation: It is recommended to install a traffic signal at the Davis Street / Hemlock Avenue intersection.

2. Heacock Street and SR 60 WB Ramps under Near Term with-Project scenario in the PM Peak Hour

Mitigation: Optimizing the cycle length (90s cycle length), splits, and offsets and restriping the defacto right-turn lane to a SB right-turn lane with 50ft storage and a SB through lane improves the LOS to C

3. Davis Street and Ironwood Avenue under the Near Term PM peak hour scenario can be mitigated by optimizing the cycle length. LOS worksheets are attached in Appendix C.

Mitigation: Optimizing the cycle length (60s cycle length), splits, and offsets yields a LOS B

4. Indian Street and Sunnymead Blvd under the Near Term PM peak and the General Plan PM peak hour scenarios. Under the Near Term Conditions this could be mitigated by optimizing the cycle length (80s cycle length), splits, and offsets and yields a LOS C. Under the General Plan Conditions, restriping of the defacto right-turn lanes in the EB and a WB directions to provide 50ft right turn pocket lanes yield a LOS D. Analysis worksheets are provided in Appendix C.

Mitigation: Optimizing the cycle length (80s cycle length), splits, and offsets yields under Near Term (2022) conditions and restriping to provide a EBR and a WBR turn lanes under General Plan (2040) conditions

5. Heacock St Hemlock Ave under the General Plan Build-out with-project PM peak yields a LOS E. Restriping the defacto right-turn to provide a SBR lane yields a LOS D. Analysis worksheets are provided in Appendix C.

Mitigation: Restripe the defacto SB right-turn lane to provide a right turn pocket lane

6. Project Access (w/o Nita Dr)/Hemlock Avenue (Intersection 10) under the General Plan Build-out with-project PM peak yields a LOS D. Converting to an all-way-stop control brings the LOS back to C. Analysis worksheets are provided in Appendix C.

Mitigation: Convert to an all-way stop control

7. Indian Street/Ironwood Avenue under the General Plan Build-out with-project AM peak yields a LOS E. Increasing the cycle length to 120s (maximum length per Moreno Valley standards) yields a LOS D. Analysis worksheets are provided in Appendix C.

Mitigation: Optimizing the cycle length (120s cycle length), splits, and offsets yields a LOS D

Queuing Mitigations

Based on the queuing analysis, Table 28 presents a set of recommended measures to address storage lengths at the various approaches of the study area intersections. It is important to note that much of the analysis is based on the 95th percentile queue lengths which has a low (5%) probability of occurring.

Table 28. General Plan Build-out With-Project Weekday Peak Hour Queuing Analysis

Intersection	Movement	Existing Pocket Length (ft)	Maximum Queue Length[1] (ft)	Proposed Mitigation to accommodate 95th percentile queues
1. Heacock Street/Ironwood Avenue	EBL	90	149	Restripe left turn lanes to provide 150 ft storage
	WBL	135	193	Restripe left turn lanes to provide 200 ft storage
	NBL	140	208	Restripe left turn lanes to provide 210 ft storage
	SBL	100	131	Restripe left turn lanes to provide 135 ft storage
3. Heacock Street/Hemlock Avenue	EBL	70	171	Restripe left turn lanes to provide 175 ft storage
	NBL	100	170	Restripe left turn lanes to provide 170 ft storage
4. Heacock Street/State Route (SR 60) WB Ramps	NBL	200	264	A storage lane is provided south of the Heacock/ SR 60 EB ramps intersection. No further mitigation is recommended.
5. Heacock Street/State Route (SR 60) EB Ramps	EBL	0	403	Length of the left tun lane is over 600ft. No further mitigation is recommended.
	SBL	190	226	Restripe 50ft of the TWLT lane north of the Heacock/ SR 60 WB ramps intersection as “Freeway Only” lane.
12. Davis Street/Ironwood Avenue	EBL	150	210	Restripe left turn lanes to provide 210 ft storage
	SBL	40	122	Restripe left turn lanes to provide 125 ft storage
13. Indian Street/Ironwood Avenue	EBL	95	148	Restripe left turn lanes to provide 150 ft storage
	WBL	100	140	Restripe left turn lanes to provide 140 ft storage
	NBL	110	156	Restripe left turn lanes to provide 105 ft storage
	SBL	80	126	Restripe left turn lanes to provide 130 ft storage.
14. Indian Street/Hemlock Avenue	WBL	80	100	Restripe left turn lanes to provide 100 ft storage
	NBL	145	196	Restripe left turn lanes to provide 200 ft storage
	SBL	100	126	Restripe left turn lanes to provide 130 ft storage
15. Indian Street/Sunnymead Boulevard	EBL	90	141	Restripe left turn lanes to provide 145 ft storage to accommodate 95th percentile queues. This might require replacing the concrete island with stripping.
	WBL	100	153	Restripe left turn lanes to provide 155 ft storage
	NBL	145	205	Restripe left turn lanes to provide 205 ft storage
	SBL	90	145	Restripe left turn lanes to provide 145 ft storage

1. Maximum for all scenarios

Roadway Operations

The roadway capacity analysis identified three segments that do not meet the City LOS standards. These segments are:

1. Heacock Street from Hemlock Avenue to SR 60 WB Ramps in the Near Term Year with-out and with-Project as well as General Plan with-Project conditions
2. Indian Street from Ironwood Avenue to Hemlock Avenue in the Near Term Year with-Project as well as General Plan with-out and with-Project conditions
3. Indian Street South of Hemlock Avenue in the Near Term Year with-out and with-Project as well as General Plan with-out and with-Project conditions

As noted in both the City of Moreno Valley's traffic study guidelines, these roadway capacities are "rule of thumb" estimates for planning purposes and are affected by such factors as intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, vehicle mix (truck and bus traffic) and pedestrian and bicycle traffic. In other words, while using average daily traffic (ADT) for planning purposes is suitable with regards to evaluating potential volume to capacity with future forecasts, it is not suitable for operational analysis because it does not account for the factors listed previously. As such, where the ADT based roadway segment analysis indicates a deficiency (unacceptable LOS), a review of the more detailed peak hour intersection analysis and progression analysis are undertaken. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway capacity. Therefore, roadway segment widening is typically only recommended if the peak hour intersection analysis indicates the need for additional through lanes.

However, examining the intersections on both ends of these roadway segments shows that the operations of the intersections is within acceptable level of service standards. As such roadway segment widening does not appear necessary to address the deficiencies at the identified roadway segments based on the peak hour intersection operations analysis along these roadway segments.

Traffic Calming Options for Davis Street

It is our understanding that once Davis Street is completed, thereby connecting Hemlock Avenue to Ironwood Avenue, it will provide an alternative for traffic trying to avoid Heacock St which in turn could potentially contribute to increased speeds along Davis St and cut-through traffic.
As such we are recommending traffic calming measures that could be implemented in case the need arises because of excessive speeds or cut-through traffic.
It should be noted that traffic calming has impacts not only on vehicular travel, but can also provide preferential corridors for cyclists and pedestrians. This is especially important for Davis Street which is envisioned in the City's Bicycle Master Plan as a Class 3 bicycle route.

Since the 660 ft section of Davis Street just south of Ironwood is yet to be constructed and knowing that the existing Davis Street has a 54 ft width curb to curb (travel lanes at 20 ft and a 14 ft two-way-left-turn-lane), we offer the following traffic calming options to be considered:

1. Providing parallel parking on both sides of Davis could reduce the street width between intersections (where parking is introduced) from 20 ft per direction to 12 ft per direction which changes both the perception and the function of the street. It is important to note that this option needs to be studied further to address turning movements at access points.
2. As the project develops providing mid-block crossing(s) on Davis Street might be desirable to connect the various uses (business park to commercial/retail/restaurants). These should come with necessary signage, striping and possibly curb bulb-ous where mid-block crossing(s) are needed

3. Speed feedback signs could be installed along Davis St. These signs display the speed at which a vehicle is traveling in contrast with the posted speed limit for the area. These units have been proven to be effective in reducing vehicular speeds in many areas.
4. Other measures such as raised medians, curb extensions, street trees and landscaping could be used for traffic calming. This is especially applicable as the new section is constructed. Speed humps have been used in residential areas but given the anticipated truck traffic in this area they might not provide the best results, however, speed tables could be also used as an option if speeding becomes an issue.

Hemlock Ave and Davis Street Classifications

To ensure that the proposed changes in land use (leading to additional truck traffic) will not significantly impact the structural integrity of the existing street segments within the specific plan area, an analysis of the pavement section on certain segments of Hemlock Avenue and Davis Street should be prepared for future plot plans in Planning Areas 1, 2, and 3 and any needed improvements are recommended to be completed per the Conditions of Approval of those plot plans.

Appendix A:Scoping Agreement

SCOPING AGREEMENT
FOR TRAFFIC ANALYSIS STUDY

Date: October 30, 2017

This letter acknowledges the City of Moreno Valley Transportation Engineering Division requirements for the traffic impact analysis of the following project.

Case No.	PEN16-0015
Project Name:	Moreno Valley Festival
Project Address:	East of Heacock Street between Ironwood Avenue and Hemlock Avenue
Project Description:	348,000 SF of business park and 325,000 SF of commercial retail.
Related Cases:	PA15-0053, PA15-0054, P15-124

	Consultant	Developer
Name:	Transpo Group, Inc.	BlackRidge Real Estate Group, LLC
Address:	603 North Park Center Drive Suite 108 Santa Ana, CA 92705	16901 Millikan Avenue Irvine, CA 92606
Telephone:	949-656-7925	303-419-6780

I. Background

The proposed specific plan will review modifying the existing 180,000 square feet of retail land use to a business park and retail uses.
The project site will have access to Ironwood Avenue from Davis Street, Hemlock Avenue from Davis Street, Heacock Avenue via new project access drive and retail project accesses.

II. Trip Geographic Distribution and Assignment*

N: *% **S:** *% **E:** *% **W:** *%

***Please see attached trip distribution diagram.**

III. Site Trip Generation Forecast

A. ITE Trip Generation Manual (*10th Edition, 2017*)
B. AM Peak: 7:00-9:00 AM (based upon existing 24-hour traffic counts)
C. PM Peak: 4:00-6:00 PM (based upon existing 24-hour traffic counts)
D. Intersection and link acceptable Level of Service "D" for some intersections and links and Level of Service "C" for others based upon the current City policy. (Use Highway Capacity Manual - latest edition - operations procedures; parameters per County of Riverside Traffic Impact Analysis Guidelines.)

Proposed Use Rates*
Land Use (per unit): Daily:** AM:** PM:**

Existing Use Rates*
Land Use (per unit): Daily:** AM:** PM:**

Internal Trip Allowance: Yes __**__ No __ Percentage 7% AM / 4%PM and Daily_____

Pass-by Trip Allowance: Yes __**__ No __Percentage 34%PM /17% AM and Daily____

**** Please see attached trip generation tables.**

IV. Specific Project Issues to be Analyzed

A. The focus of this traffic study will be on addressing the adequacy of site access and identifying specific near-term and future circulation improvements required in the study area to maintain acceptable peak hour and daily Levels of Service (LOS).
B. The traffic study shall address the project traffic impacts at all study intersections listed in Section VI and provide appropriate mitigation measures if applicable. Peak-hour traffic signal warrants shall be evaluated for all intersections that are not currently signalized.

C. The traffic study shall include a section that discusses the difference in trip generation between the previous proposed or existing use and the proposed project.
D. Assess adequacy of non-motorized transportation between project and surrounding area.
E. Provide traffic calming options for Davis Street, between Ironwood Ave and Hemlock Ave.
F. The traffic study shall review the current roadway classifications of Hemlock Avenue and Davis Street within the Specific Plan and recommend the appropriate roadway classifications (per current City standards) for these streets to support commercial truck traffic generated by warehousing and manufacturing facilities.
G. Using Synchro software, the traffic study shall provide a Queuing Analysis section to determine the 95th percentile queues and the minimum requirement of storage length for the left-turn lanes of all studied intersections based on forecasted E+P (V.B), Opening Year + Project (V.D) and GP Buildout (V.E) traffic volumes.

V. Study of Horizon Years

A. Existing
B. Existing + Project
C. Existing + Ambient Growth + Cumulative (Assume growth rate of 2% per year)
D. Existing + Ambient Growth + Cumulative + Project
E. General Plan Build Out (with and without project) – Buildout data will be obtained from City's traffic forecast model

*****Opening year should have five (5) year minimum horizon**

VI. Facilities to be Studied

A. Intersections

1. Heacock Street (NS) at Ironwood Avenue (EW)
2. Heacock Street (NS) at Project Access (EW)
3. Heacock Street (NS) at Hemlock Avenue (EW)
4. Heacock Street (NS) at SR-60 Freeway WB Ramps (EW)
5. Heacock Street (NS) at SR-60 Freeway EB Ramps (EW)
6. Project Access (NS) at Hemlock Avenue (EW)
7. Davis Street (NS) at Hemlock Avenue (EW)
8. Project Access (NS) at Hemlock Avenue (EW)
9. Project Access (NS) at Hemlock Avenue (EW)
10. Project Access (NS) at Hemlock Avenue (EW)
11. Nita Drive (NS) at Hemlock Avenue (EW)
12. Davis Street (NS) at Ironwood Avenue (EW)
13. Indian Street (NS) at Ironwood Avenue (EW)
14. Indian Street (NS) at Hemlock Avenue(EW)
15. Indian Street (NS) at Sunnymead Boulevard (EW)

B. Roadway Segments

1. Heacock Street – Ironwood Avenue to Hemlock Avenue
2. Heacock Street – Hemlock Avenue to SR-60 Freeway WB Ramps
3. Indian Street – Ironwood Avenue to Hemlock Avenue
4. Indian Street south of Hemlock Avenue
5. Ironwood Avenue west of Heacock Street
6. Ironwood Avenue – Heacock Street to Indian Street
7. Ironwood Avenue – east of Indian Street
8. Hemlock Avenue west of Heacock Street
9. Hemlock Avenue – Heacock Street to Indian Street
10. Hemlock Avenue – east of Indian Street

VII. Deliverables

A. Draft traffic impact study (2 copies) and a PDF file (on flash drive)
B. Final traffic impact study (4 copies) and a PDF file (on flash drive)

A signed copy of this Scoping Agreement must be included in the submitted draft and final traffic impact studies. All draft and final traffic impact studies shall be delivered with the appropriate review fee to the Permit Technician, Land Development Division, Moreno Valley City Hall, 14177 Frederick Street, Moreno Valley, CA 92552. Please contact the Land Development Division at 951-413-3110 prior to the delivery of the traffic study.

If you have any questions regarding this *Scoping Agreement*, please contact Eric Lewis at (951) 413-3140.

Recommended By:

Rawad Hani, P.E.
Transpo Group, Inc.

Approved By:

Eric Lewis, P.E., T.E.
City Traffic Engineer

NOTE: This scoping agreement was reviewed and approved based on the information submitted by Transpo Group on 10/30/2017. Transpo Group and the project applicant acknowledge that any changes to the project (zoning, size, type of use, number or location of access points, project phasing, etc.) after 10/30/2017 may require this scoping agreement to be revised and resubmitted for review and approval by the City of Moreno Valley.

Table XX. Proposed Project Trip Generation (Based on Land Use Table 2-3, October 12, 2017)

				AM Peak Hour			PM Peak Hour		
Land Use	**LU Code**	**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Trip Rates									
Shopping Center[1]	820	TSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81
Business Park[2]	770	TSF	12.44	0.24	0.16	0.40	0.19	0.23	0.42

				AM Peak Hour			PM Peak Hour		
Project Trip Generation		**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Planning Area 1									
Business Park	135.000	TSF	1,679	33	21	54	26	31	57
Subtotal			*1,679*	*33*	*21*	*54*	*26*	*31*	*57*
Planning Area 2									
Business Park	35.000	TSF	435	9	5	14	7	8	15
Subtotal			*435*	*9*	*5*	*14*	*7*	*8*	*15*
Planning Area 3									
Business Park	178.000	TSF	2,214	43	28	71	34	40	75
Retail	15.000	TSF	566	9	5	14	27	30	57
Subtotal			*2,781*	*52*	*33*	*85*	*62*	*70*	*132*
Planning Area 4									
Retail	255.000	TSF	9,626	149	91	240	466	505	972
Subtotal			*9,626*	*149*	*91*	*240*	*466*	*505*	*972*
Planning Area 6									
Retail	35.000	TSF	1,321	20	13	33	64	69	133
Subtotal			*1,321*	*20*	*13*	*33*	*64*	*69*	*133*
Planning Area 7									
Retail	40.000	TSF	1,510	23	14	38	73	79	152
Subtotal			*1,510*	*23*	*14*	*38*	*73*	*79*	*152*
Planning Area 8									
Retail	20.000	TSF	755	12	7	19	37	40	76
Subtotal			*755*	*12*	*7*	*19*	*37*	*40*	*76*
Total Trip Generation			**18,108**	**298**	**185**	**482**	**735**	**802**	**1,537**
Internal Trip Capture (AM = 7%, PM/Daily = 4%)[3]			-724	-21	-13	-34	-29	-32	-61
Net Trip Generation With Internal Trip Capture			*17,384*	*277*	*172*	*449*	*705*	*770*	*1,475*
Pass-By Trips For Commercial Retail (AM / Daily = 17%, PM = 34%) [4]			-2,342	-36	-22	-58	-227	-246	-473
Total Pass-by Trips			*-2,342*	*-36*	*-22*	*-58*	*-227*	*-246*	*-473*
Net Trip Generation With Internal Trip Capture and Pass By			**15,041**	**241**	**150**	**390**	**478**	**524**	**1,003**

TSF = Thousand Square Feet

[1] Trip rates from the Institute of Transporation Engineers, *Trip Generation, 10th Edition,* 2017. Land Use Code 820 - Shopping Center.

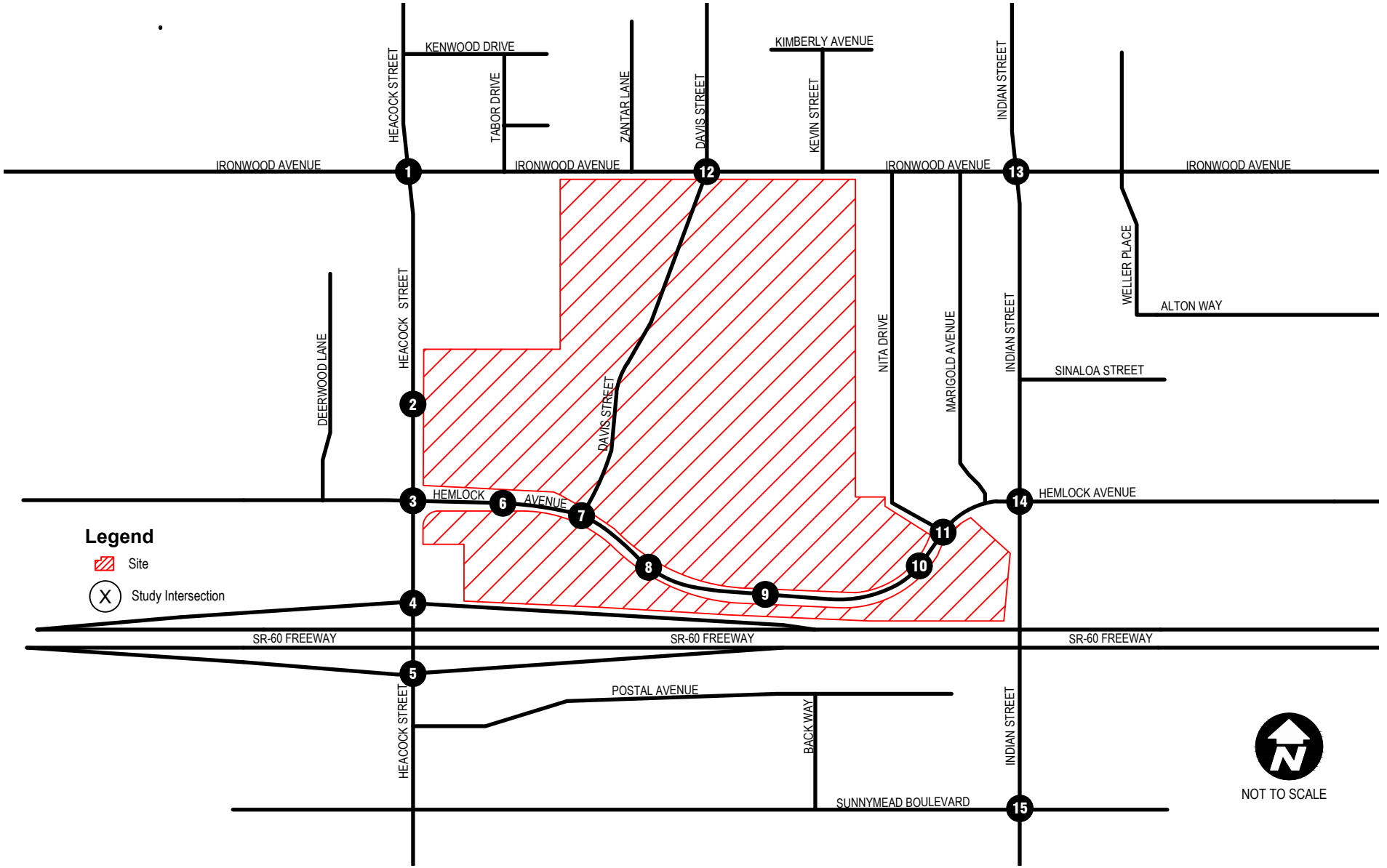
[2] Trip rates from the Institute of Transporation Engineers, *Trip Generation, 10th Edition,* 2017. Land Use Code 770 - Business Park.

[3] Internal capture calculated using methodology from NCHRP 684 Mixed Use Spreadsheet

[4] Pass-by trip rate (34% during PM peak hour, 17% during the AM peak hour and Daily based on weekend mid-day) from the Institute of Transporation Engineers, Trip Generation, 10th Edition, 2017. Land Use Code 820 - Shopping Center.

Table XX. Proposed Project Trip Generation Comparison (Based on Updated Table 2-3, October 12, 2017) -

			AM Peak Hour			PM Peak Hour		
Project Trip Generation Comparison	**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Proposed Project vs. Greiner Engineering Study (Table 3)								
Proposed Project Total Traffic (No Internal Trip Capture or Pass-by Reductions)		18,108	298	185	482	735	802	1,537
Greiner Engineering Study (Table 3) (No Interal Trip Capture or Pass-by Reductions)		18,322	--	--	--	1,081	1,356	2,437
Difference (Proposed Project - Greiner Engineering Study Table 3)		**-214**	**298**	**185**	**482**	**-346**	**-554**	**-900**
Proposed Project minus Existing Land Uses (New Project Trips)								
Proposed Project New Trips (includes Internal Trip Capture and Pass-By Reductions)		15,041	241	150	390	478	524	1,003
Existing Land Uses (includes Internal Trip Capture and Pass-By Reductions)		6,426	310	239	549	231	233	464
New Trips (Proposed Project - Existing Land Uses)		**8,616**	**-70**	**-89**	**-159**	**247**	**292**	**538**



Source: Google Maps, 09/2017.

Project Site Location and Study Area

FIGURE 1

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.

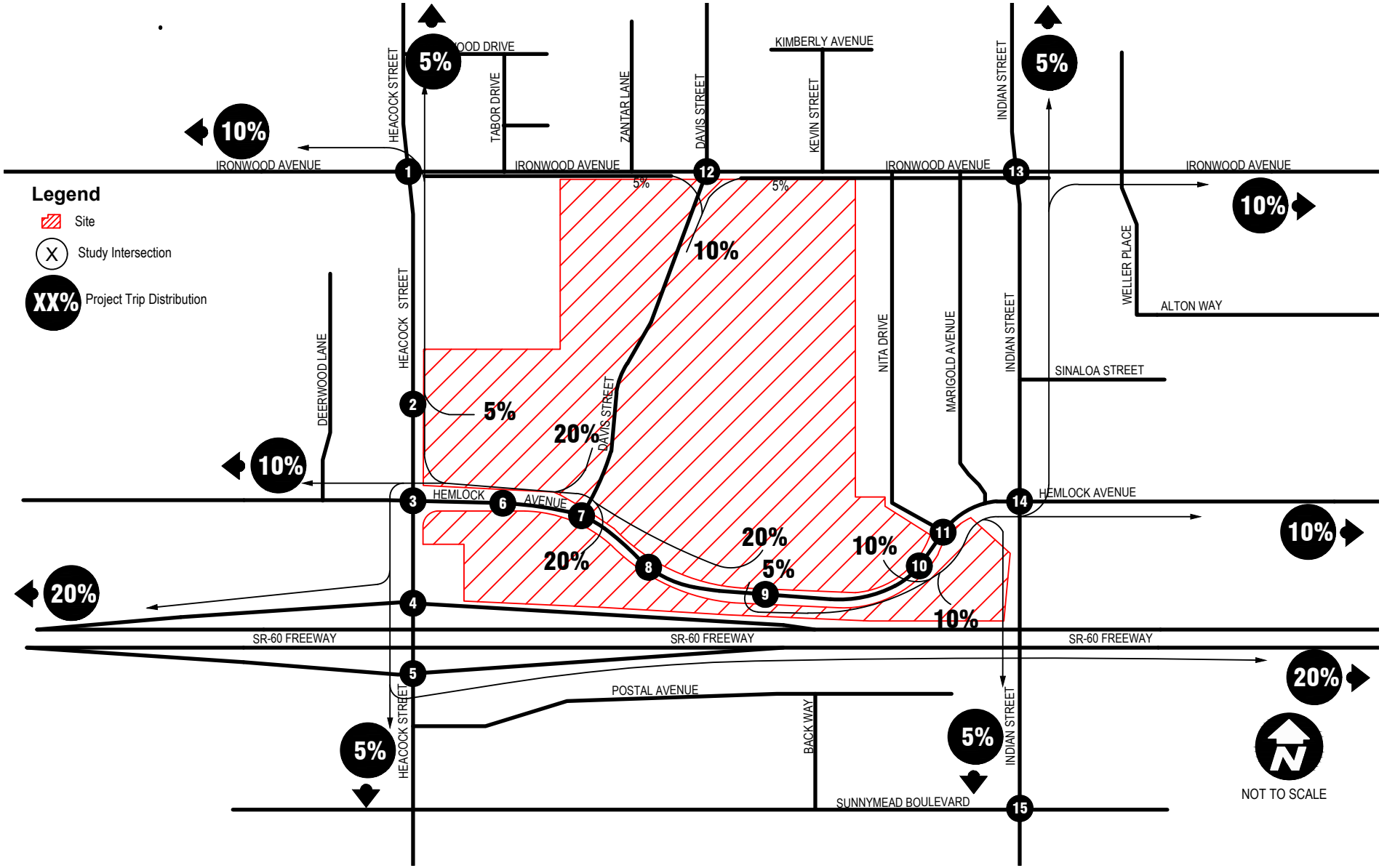
NOT TO SCALE

Project Plan

Festival at Moreno Valley

FIGURE 2

transpogroup
WHAT TRANSPORTATION CAN BE.



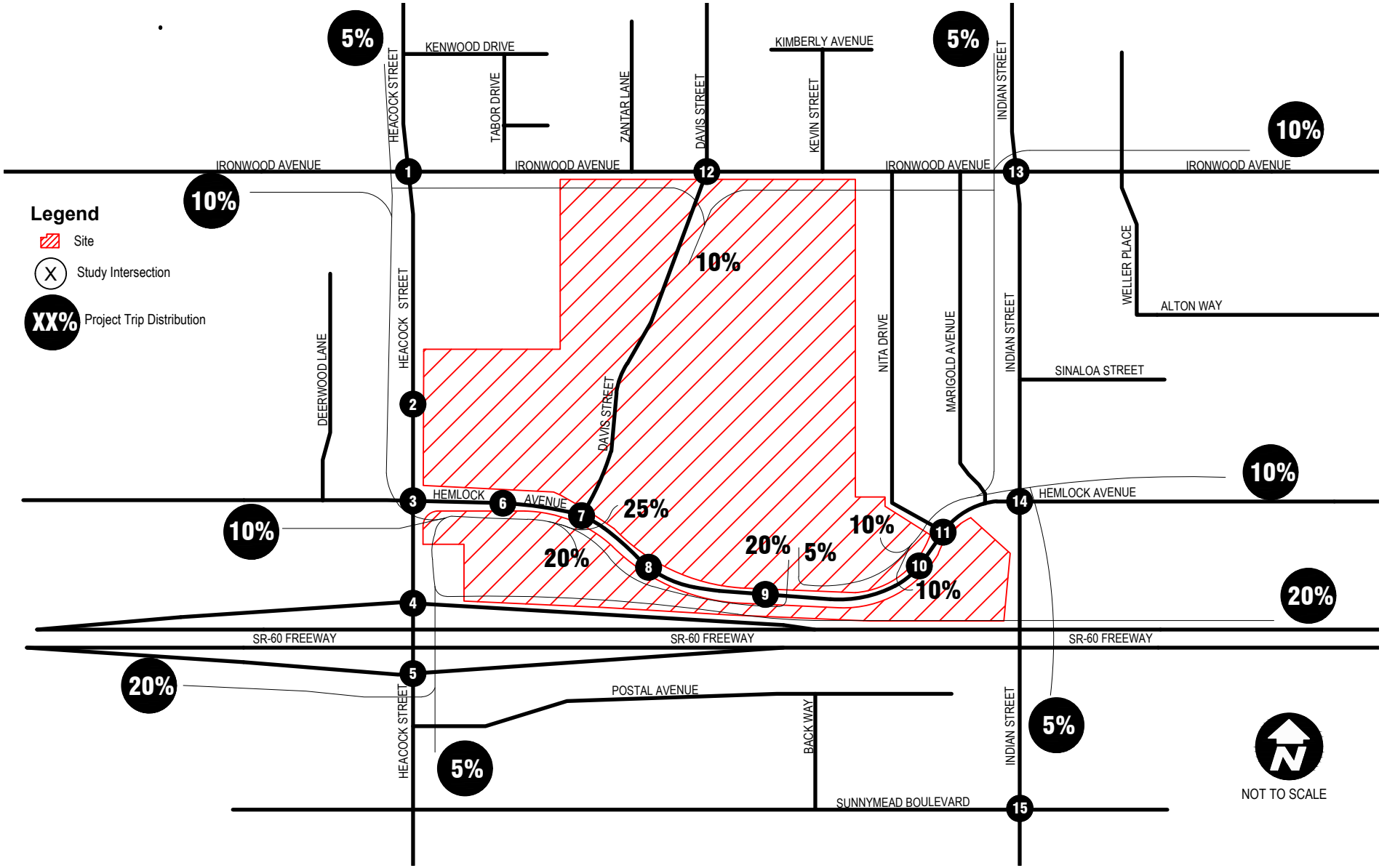
Source: Google Maps, 09/2017.

Retail Distribution Outbound

Festival at Moreno Valley

FIGURE 3

transpogroup
WHAT TRANSPORTATION CAN BE.



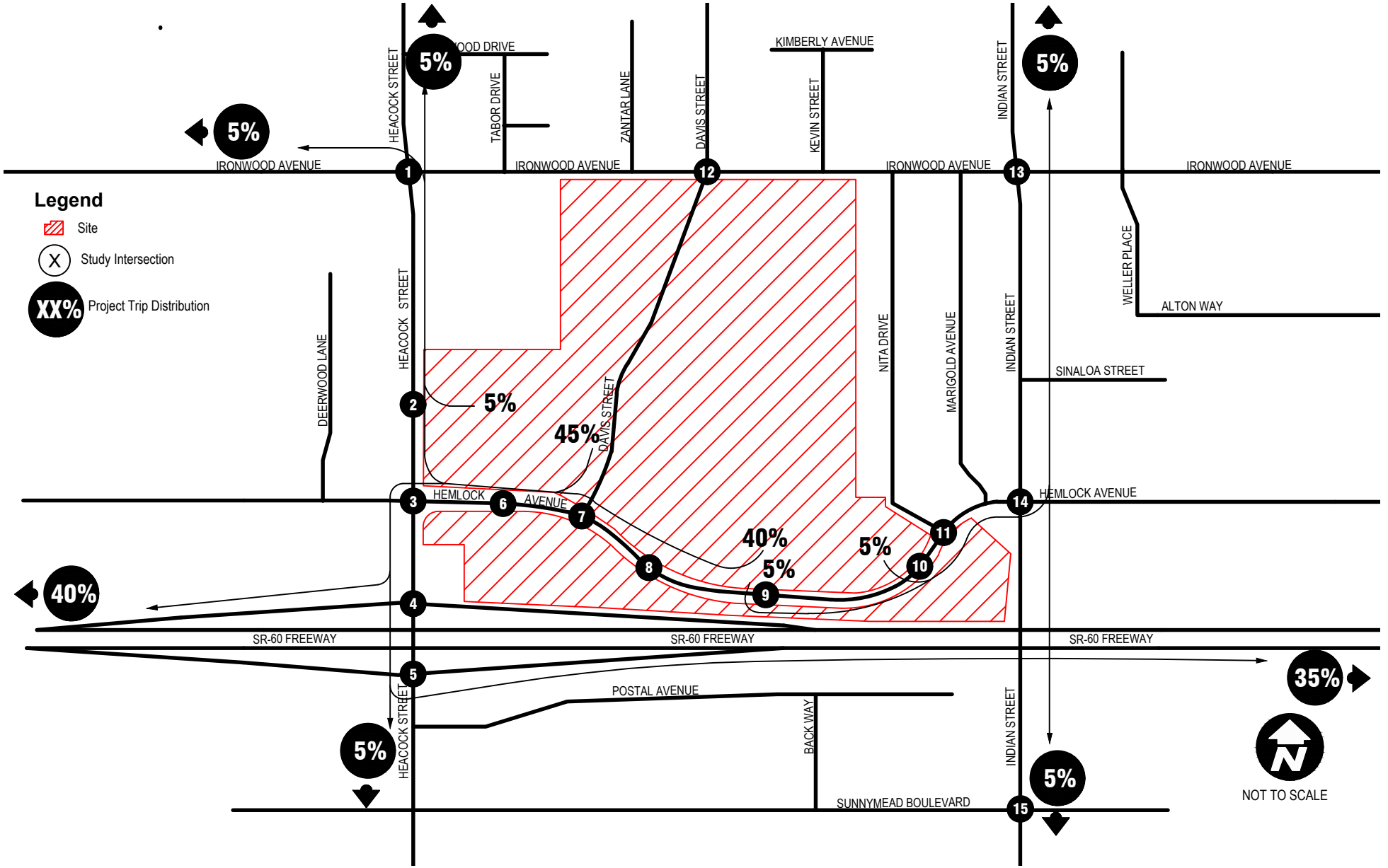
Source: Google Maps, 09/2017.

Retail Distribution Inbound

Festival at Moreno Valley

FIGURE 4

transpogroup
WHAT TRANSPORTATION CAN BE.



Source: Google Maps, 09/2017.

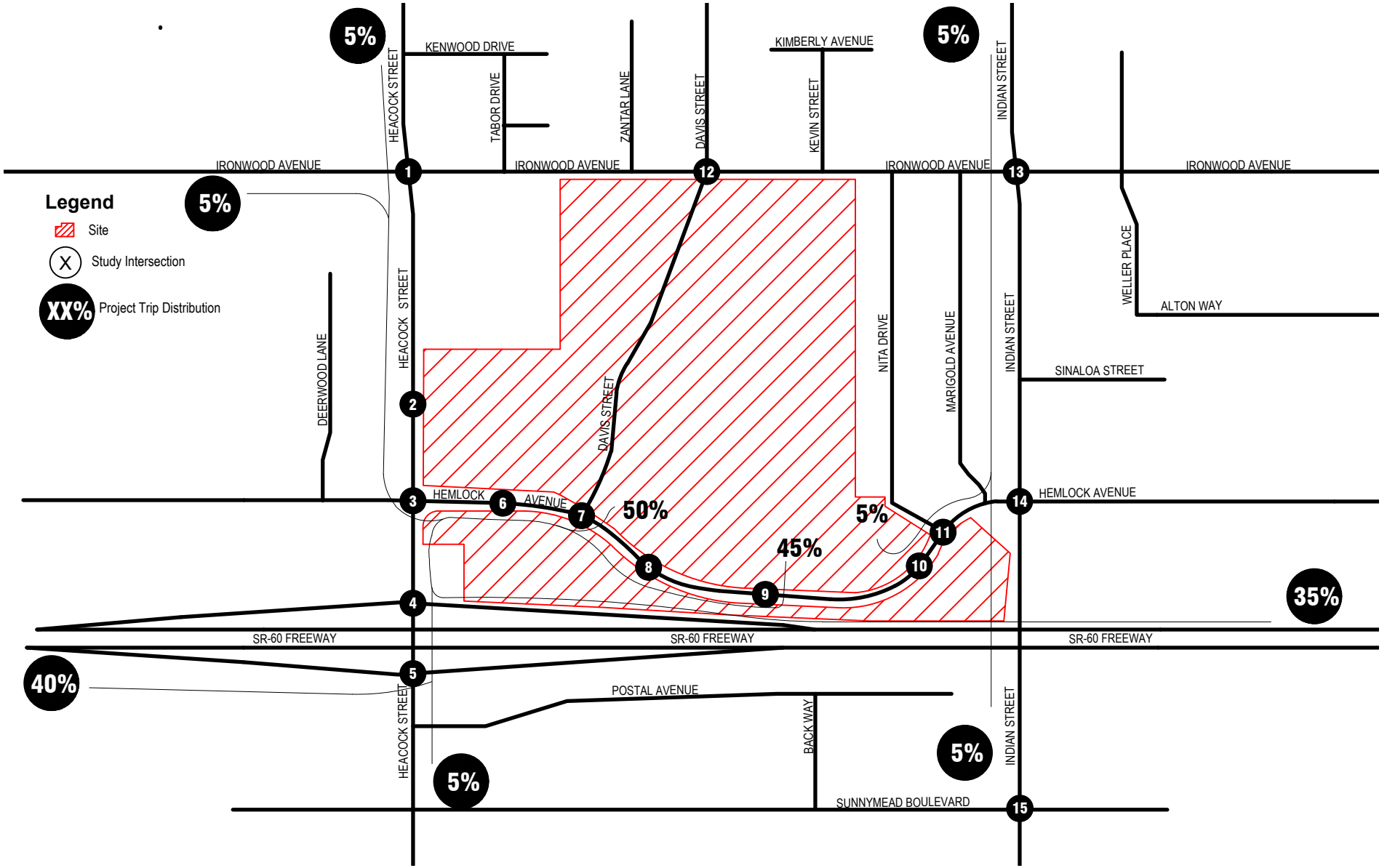
Business Park Distribution Outbound

FIGURE 5

Festival at Moreno Valley

transpogroup
WHAT TRANSPORTATION CAN BE.

Oct 30, 2017 - 4:58pm rudyg C:\Users\rudyg\Dropbox (Transpo CA)\Transpo CA Team Folder\Projects\2017\17261.PR - Festival at Moreno Valley\Graphics\Festival at Moreno Valley.dwg Layout: fig5-Business Park Distribution Outbound



Source: Google Maps, 09/2017.

Business Park Distribution Inbound

Festival at Moreno Valley

FIGURE 6

transpogroup
WHAT TRANSPORTATION CAN BE.

Appendix B:Traffic Counts

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Heacock
EAST & WEST: Ironwood

PROJECT #: SC1422
LOCATION #: 1
CONTROL: SIGNAL

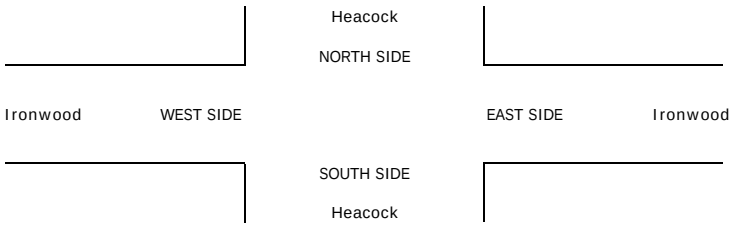
NOTES:

AM PM MD OTHER OTHER

N ▲ ◄ W E ► S ▼

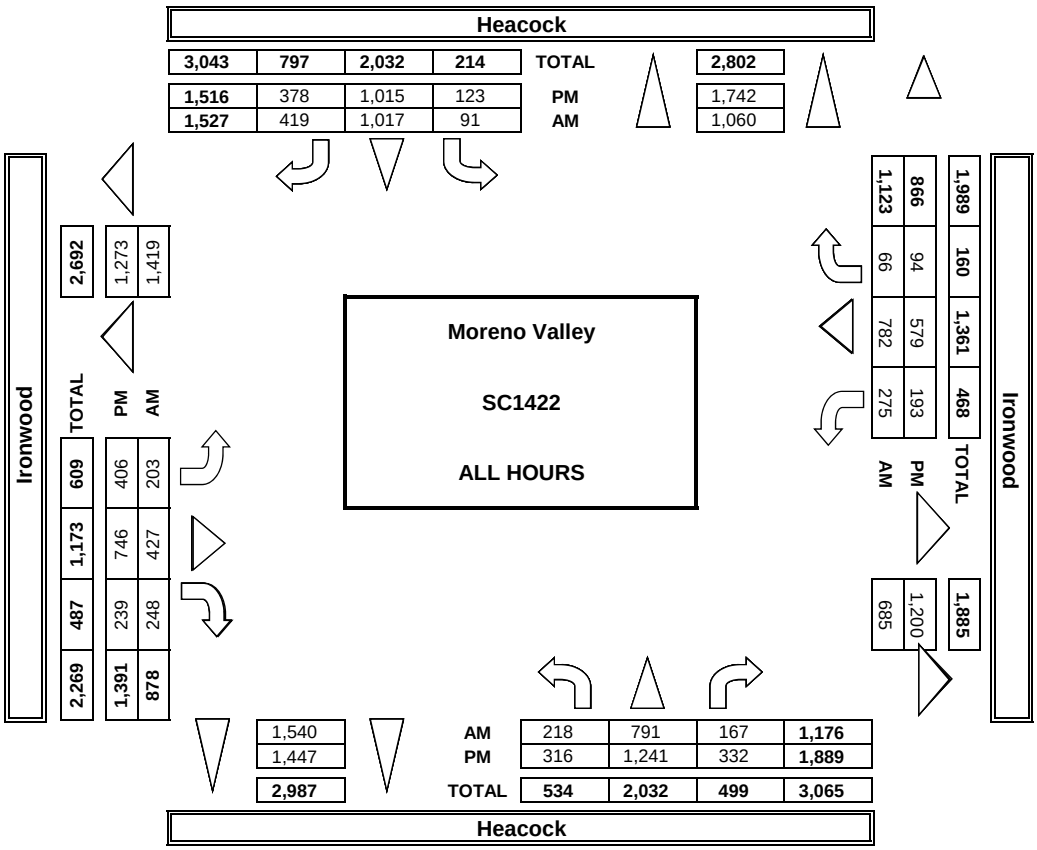
Add U-Turns to Left Turns

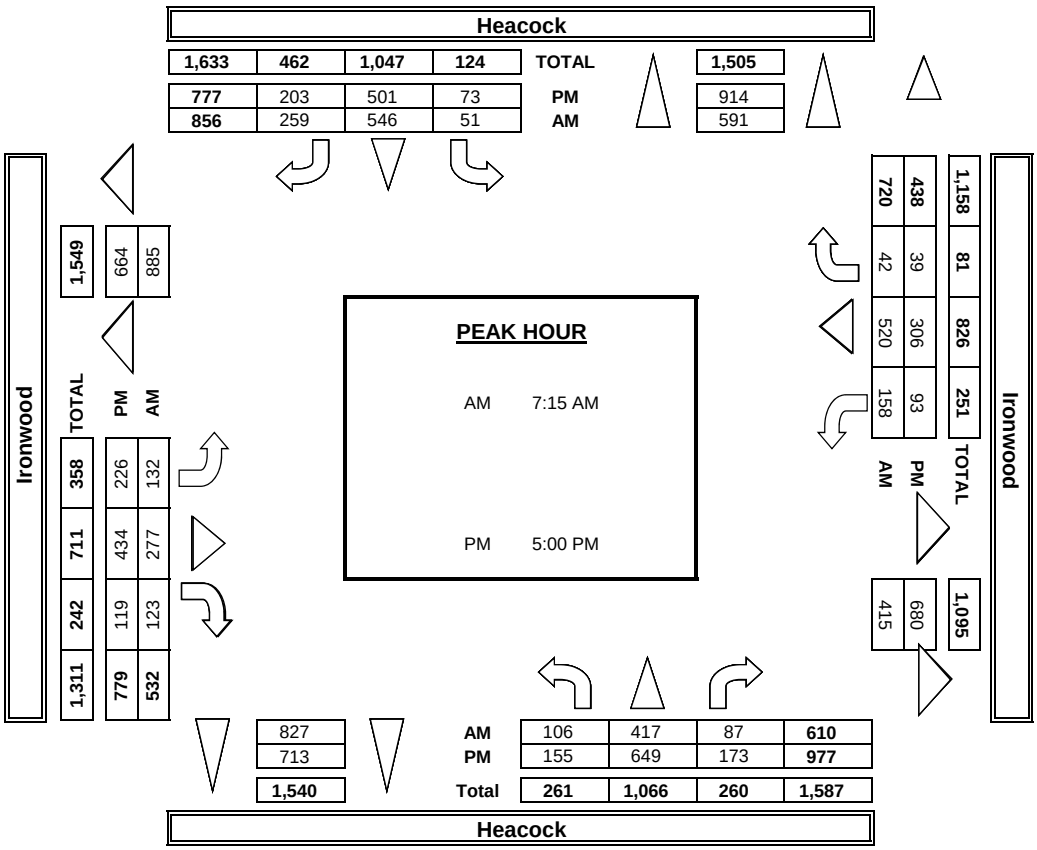
		NORTHBOUND Heacock			SOUTHBOUND Heacock			EASTBOUND Ironwood			WESTBOUND Ironwood				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	25	101	21	8	102	50	11	33	22	29	75	5	482	0	0	0	0	0
	7:15 AM	27	94	29	8	123	53	34	64	32	26	133	4	627	0	0	0	0	0
	7:30 AM	25	112	22	16	142	80	33	101	28	41	119	8	727	0	0	0	0	0
	7:45 AM	28	101	17	14	144	67	40	60	26	45	148	17	707	0	0	0	0	0
	8:00 AM	26	110	19	13	137	59	25	52	37	46	120	13	657	0	0	0	0	0
	8:15 AM	31	107	15	9	144	50	25	35	32	28	83	10	569	0	0	0	0	0
	8:30 AM	26	96	19	13	119	36	17	43	44	29	50	6	498	0	0	0	0	0
	8:45 AM	30	70	25	10	106	24	18	39	27	31	54	3	437	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	218	791	167	91	1,017	419	203	427	248	275	782	66	4,704	0	0	0	0	0
	APPROACH %	19%	67%	14%	6%	67%	27%	23%	49%	28%	24%	70%	6%						
	APP/DEPART	1,176	/	1,060	1,527	/	1,540	878	/	685	1,123	/	1,419	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	106	417	87	51	546	259	132	277	123	158	520	42	2,718					
	APPROACH %	17%	68%	14%	6%	64%	30%	25%	52%	23%	22%	72%	6%						
	PEAK HR FACTOR		0.959			0.899			0.821			0.857		0.935					
	APP/DEPART	610	/	591	856	/	827	532	/	415	720	/	885	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	35	145	29	14	123	42	41	66	29	21	70	10	625	0	0	0	0	0
	4:15 PM	39	126	47	12	110	42	46	86	34	29	72	19	662	0	0	0	0	0
	4:30 PM	42	183	31	9	151	49	51	77	29	20	58	8	708	0	1	0	0	1
	4:45 PM	45	138	52	15	130	42	42	83	28	30	73	18	696	0	0	0	0	0
	5:00 PM	42	170	39	14	113	60	54	110	31	24	90	11	758	0	0	0	0	0
	5:15 PM	47	182	35	17	140	49	56	86	25	19	58	8	722	0	0	0	0	0
	5:30 PM	33	157	52	20	108	45	55	131	26	32	86	11	756	0	0	0	0	0
	5:45 PM	33	140	47	22	140	49	61	107	37	18	72	9	735	0	0	0	0	0
	VOLUMES	316	1,241	332	123	1,015	378	406	746	239	193	579	94	5,662	0	1	0	0	1
	APPROACH %	17%	66%	18%	8%	67%	25%	29%	54%	17%	22%	67%	11%						
	APP/DEPART	1,889	/	1,742	1,516	/	1,447	1,391	/	1,200	866	/	1,273	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	155	649	173	73	501	203	226	434	119	93	306	39	2,971					
	APPROACH %	16%	66%	18%	9%	64%	26%	29%	56%	15%	21%	70%	9%						
	PEAK HR FACTOR		0.925			0.921			0.919			0.849		0.980					
	APP/DEPART	977	/	914	777	/	713	779	/	680	438	/	664	0					



AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: West FMV
EAST & WEST: Hemlock

PROJECT #: SC1422
LOCATION #: 2
CONTROL: STOP S

NOTES:

AM PM MD OTHER OTHER

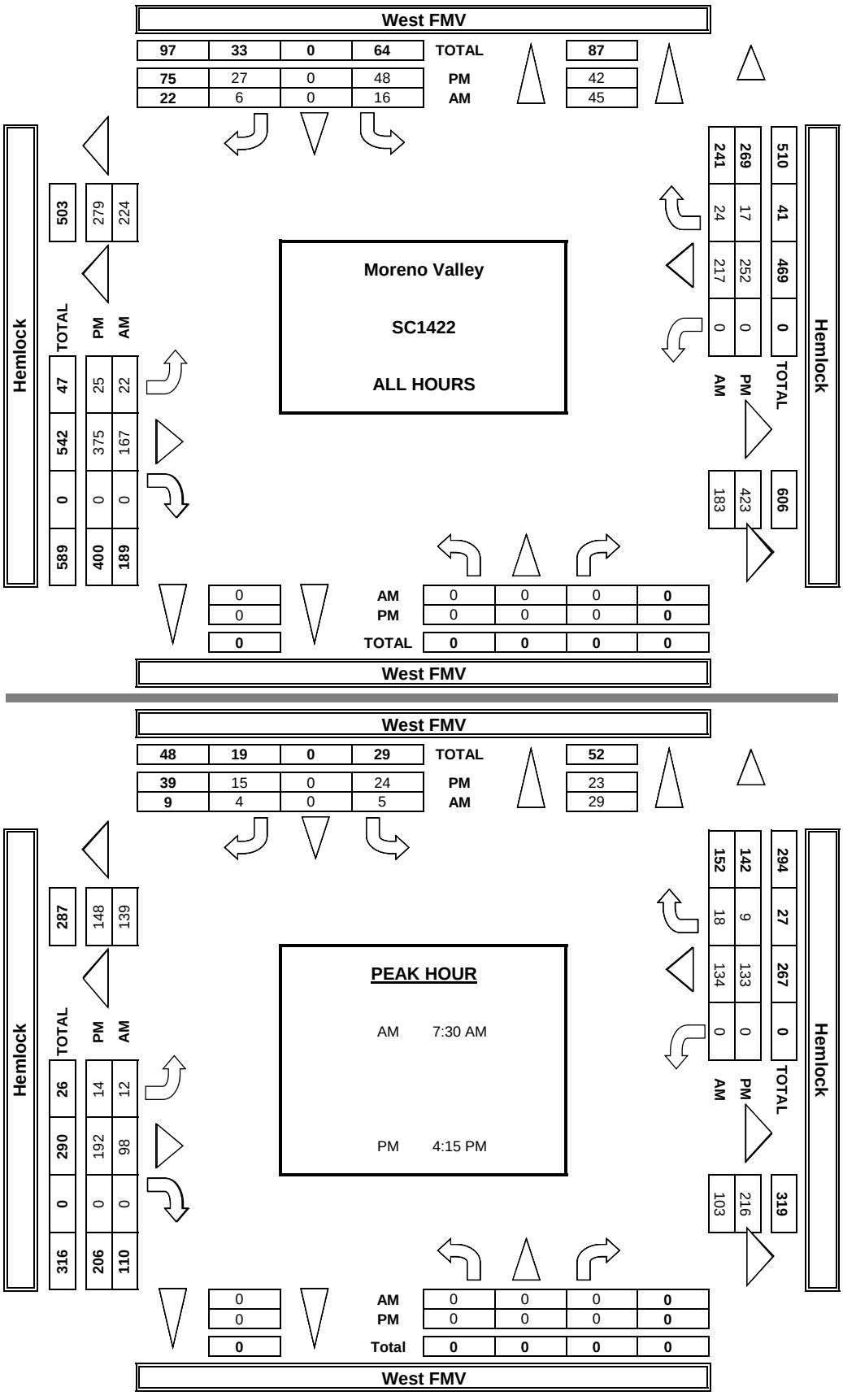
▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND West FMV			SOUTHBOUND West FMV			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	0	0	2	0	0	3	14	0	0	16	1	36	0	0	0	0	0
	7:15 AM	0	0	0	0	0	1	1	15	0	0	18	0	35	0	0	0	0	0
	7:30 AM	0	0	0	1	0	1	3	33	0	0	29	5	72	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	2	34	0	0	35	4	75	0	0	0	0	0
	8:00 AM	0	0	0	2	0	0	3	16	0	0	31	4	56	0	0	0	0	0
	8:15 AM	0	0	0	2	0	3	4	15	0	0	39	5	68	0	0	0	0	0
	8:30 AM	0	0	0	3	0	0	3	18	0	0	24	1	49	0	0	0	0	0
	8:45 AM	0	0	0	6	0	1	3	22	0	0	25	4	61	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	16	0	6	22	167	0	0	217	24	452	0	0	1	0	1
	APPROACH %	0%	0%	0%	73%	0%	27%	12%	88%	0%	0%	90%	10%						
	APP/DEPART	0	/	45	22	/	0	189	/	183	241	/	224	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	5	0	4	12	98	0	0	134	18	271					
	APPROACH %	0%	0%	0%	56%	0%	44%	11%	89%	0%	0%	88%	12%						
	PEAK HR FACTOR		0.000			0.450			0.764			0.864		0.903					
	APP/DEPART	0	/	29	9	/	0	110	/	103	152	/	139	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	5	0	1	7	44	0	0	27	2	86	0	0	0	0	0
	4:15 PM	0	0	0	4	0	4	4	40	0	0	33	3	88	0	0	0	0	0
	4:30 PM	0	0	0	7	0	2	0	53	0	0	32	3	97	0	0	0	0	0
	4:45 PM	0	0	0	8	0	8	9	47	0	0	35	0	107	0	0	0	0	0
	5:00 PM	0	0	0	5	0	1	1	52	0	0	33	3	95	0	0	0	0	0
	5:15 PM	0	0	0	5	0	1	0	36	0	0	26	4	72	0	0	0	0	0
	5:30 PM	0	0	0	2	0	1	3	52	0	0	29	1	88	0	0	0	0	0
	5:45 PM	0	0	0	12	0	9	1	51	0	0	37	1	111	0	0	0	0	0
	VOLUMES	0	0	0	48	0	27	25	375	0	0	252	17	744	0	0	0	0	0
	APPROACH %	0%	0%	0%	64%	0%	36%	6%	94%	0%	0%	94%	6%						
	APP/DEPART	0	/	42	75	/	0	400	/	423	269	/	279	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	0	24	0	15	14	192	0	0	133	9	387					
	APPROACH %	0%	0%	0%	62%	0%	38%	7%	93%	0%	0%	94%	6%						
	PEAK HR FACTOR		0.000			0.609			0.920			0.986		0.904					
	APP/DEPART	0	/	23	39	/	0	206	/	216	142	/	148	0					

AimTD LLC

TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Heacock
EAST & WEST: Hemlock

PROJECT #: SC1422
LOCATION #: 3
CONTROL: SIGNAL

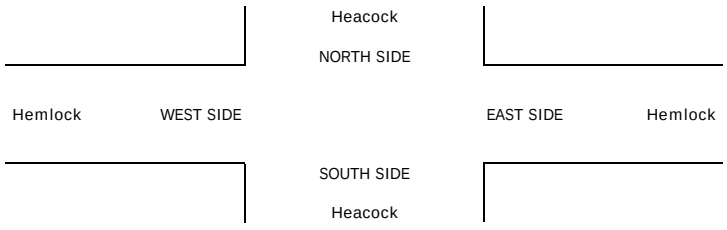
NOTES:

AM PM MD OTHER OTHER

N ▲ ◄ W E ► S ▼

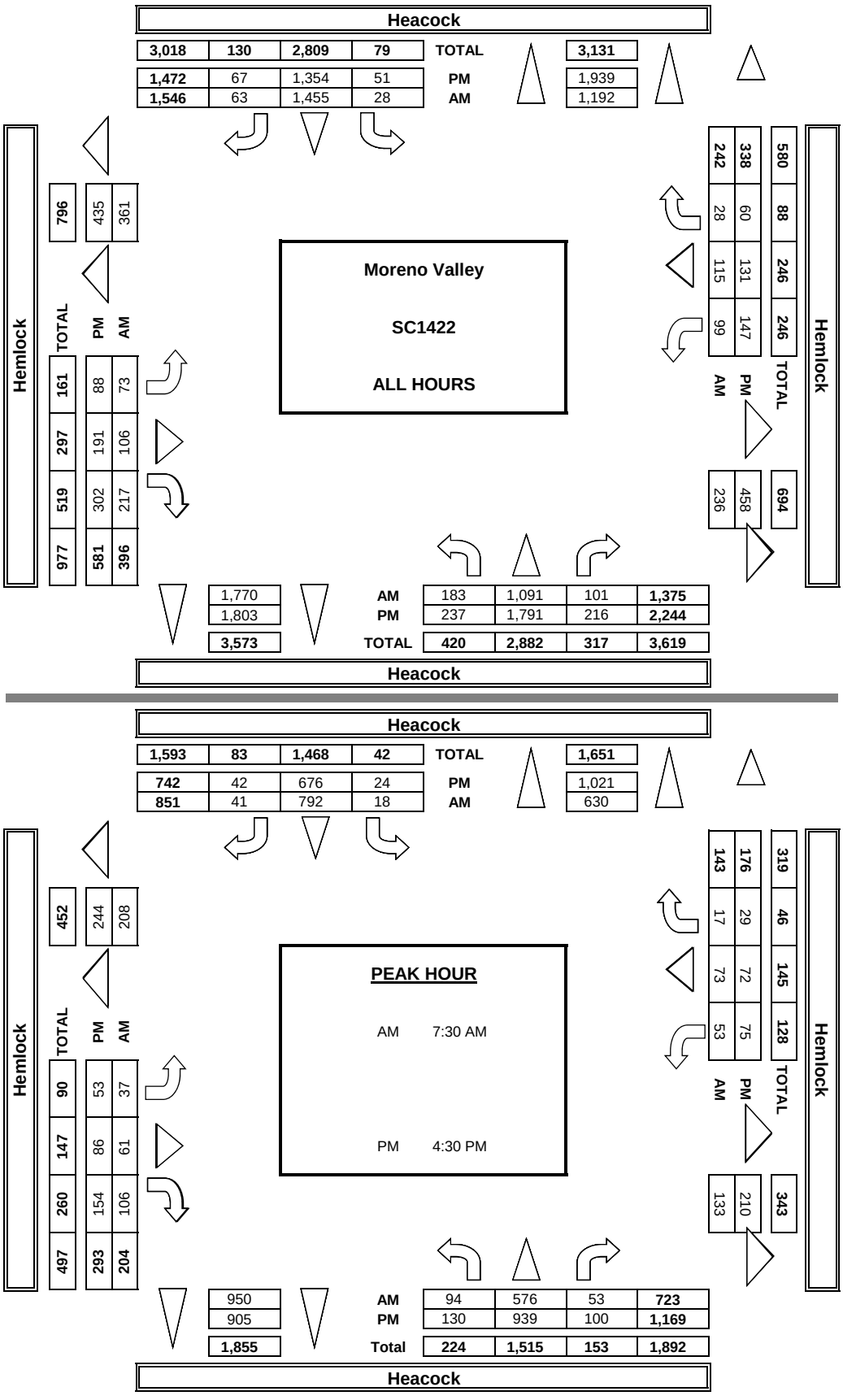
Add U-Turns to Left Turns

		NORTHBOUND Heacock			SOUTHBOUND Heacock			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	18	142	11	0	140	6	8	6	23	5	11	1	371	0	0	0	0	0
	7:15 AM	29	124	4	2	181	3	14	13	29	8	11	1	419	0	0	0	0	0
	7:30 AM	33	159	11	5	184	6	6	27	32	13	16	2	494	0	0	0	0	0
	7:45 AM	16	154	15	3	212	14	11	15	21	7	24	4	496	0	0	0	0	0
	8:00 AM	26	135	16	4	203	11	9	9	26	13	13	5	470	0	0	0	0	0
	8:15 AM	19	128	11	6	193	10	11	10	27	20	20	6	461	0	0	0	1	1
	8:30 AM	22	119	14	5	179	7	10	9	31	23	6	4	429	0	0	0	0	0
	8:45 AM	20	130	19	3	163	6	4	17	28	10	14	5	419	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	183	1,091	101	28	1,455	63	73	106	217	99	115	28	3,559	0	0	0	1	1
	APPROACH %	13%	79%	7%	2%	94%	4%	18%	27%	55%	41%	48%	12%						
	APP/DEPART	1,375	/	1,192	1,546	/	1,770	396	/	236	242	/	361	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	94	576	53	18	792	41	37	61	106	53	73	17	1,921					
	APPROACH %	13%	80%	7%	2%	93%	5%	18%	30%	52%	37%	51%	12%						
	PEAK HR FACTOR		0.890			0.929			0.785			0.777		0.968					
	APP/DEPART	723	/	630	851	/	950	204	/	133	143	/	208	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	27	230	31	6	161	1	5	23	33	20	12	5	554	0	0	0	0	0
	4:15 PM	25	195	28	10	173	6	10	26	37	17	15	9	551	0	0	0	0	0
	4:30 PM	27	239	26	8	174	17	12	21	39	17	18	5	603	0	0	0	0	0
	4:45 PM	34	219	29	6	170	9	5	19	42	23	21	9	586	0	0	0	0	0
	5:00 PM	41	232	29	5	165	7	20	26	38	15	16	11	605	0	0	0	0	0
	5:15 PM	28	249	16	5	167	9	16	20	35	20	17	4	586	0	0	0	0	0
	5:30 PM	24	236	29	8	168	11	11	27	40	14	14	4	586	0	0	0	0	0
	5:45 PM	31	191	28	3	176	7	9	29	38	21	18	13	564	0	0	0	0	0
	VOLUMES	237	1,791	216	51	1,354	67	88	191	302	147	131	60	4,635	0	0	0	0	0
	APPROACH %	11%	80%	10%	3%	92%	5%	15%	33%	52%	43%	39%	18%						
	APP/DEPART	2,244	/	1,939	1,472	/	1,803	581	/	458	338	/	435	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	130	939	100	24	676	42	53	86	154	75	72	29	2,380					
	APPROACH %	11%	80%	9%	3%	91%	6%	18%	29%	53%	43%	41%	16%						
	PEAK HR FACTOR		0.968			0.932			0.872			0.830		0.983					
	APP/DEPART	1,169	/	1,021	742	/	905	293	/	210	176	/	244	0					



AimTD LLC

TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Heacock
EAST & WEST: SR-60 WB Ramps

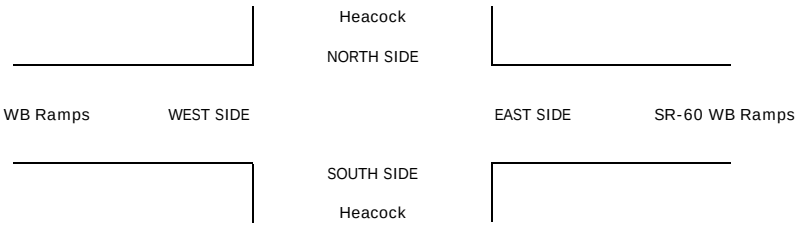
PROJECT #: SC1422
LOCATION #: 4
CONTROL: SIGNAL

NOTES: AM SB queue. PM NB/SB queue

AM PM MD OTHER OTHER — ▲ N ◄ W E ► S ▼

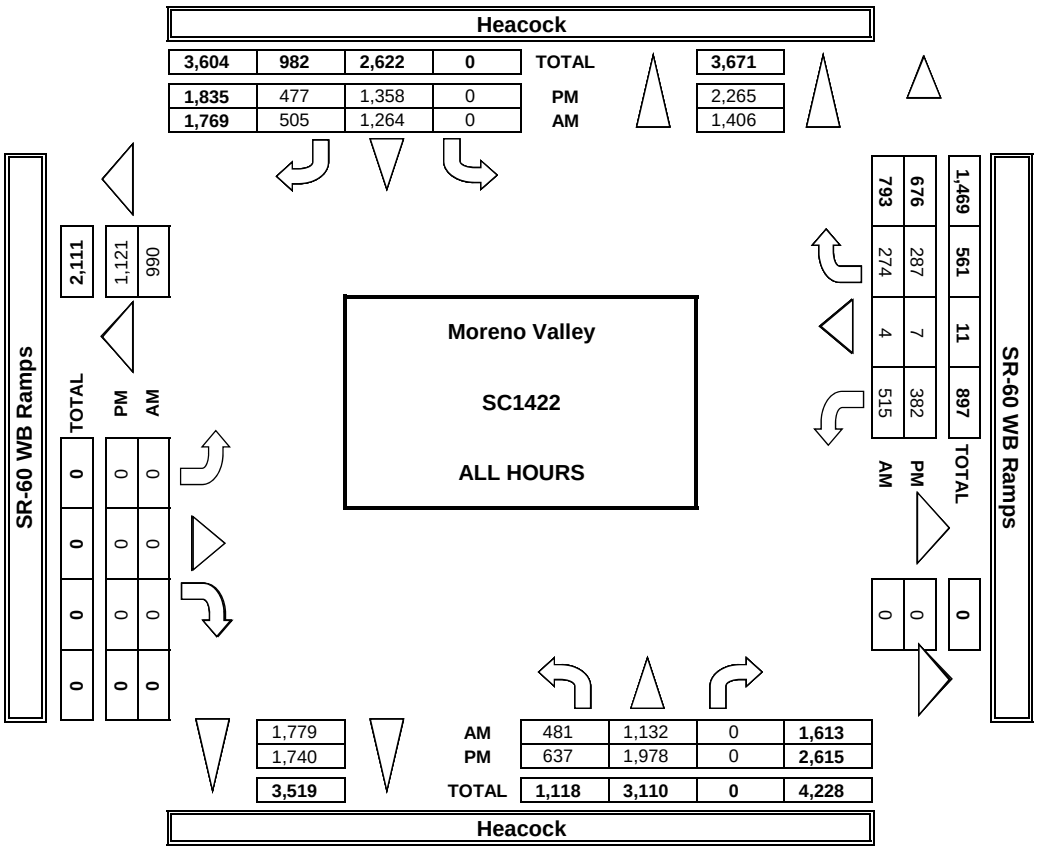
Add U-Turns to Left Turns

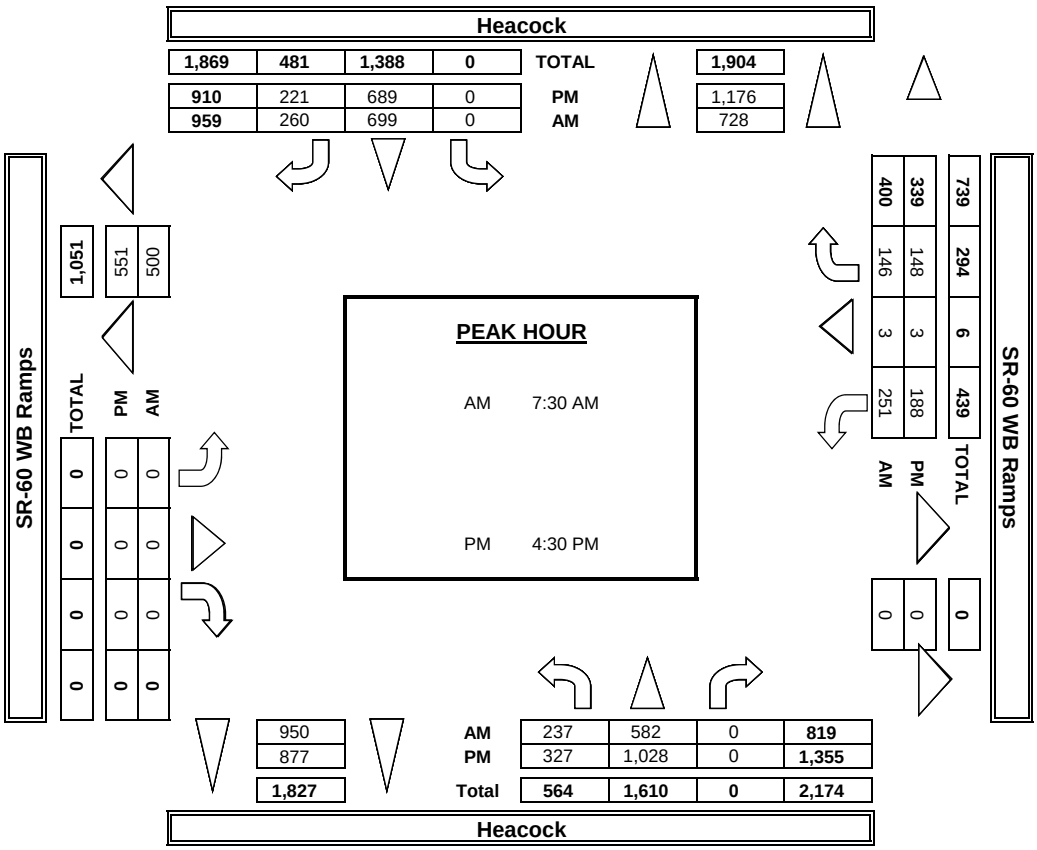
		NORTHBOUND Heacock			SOUTHBOUND Heacock			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps				U-TURNS				
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL X	ET X	ER X	WL 1	WT 0	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	56	139	0	0	106	62	0	0	0	59	1	40	463	0	0	0	0	0
	7:15 AM	56	129	0	0	151	62	0	0	0	66	0	37	501	0	0	0	0	0
	7:30 AM	63	148	0	0	172	62	0	0	0	75	0	50	570	0	0	0	0	0
	7:45 AM	49	153	0	0	181	59	0	0	0	70	1	41	554	0	0	0	0	0
	8:00 AM	62	147	0	0	176	71	0	0	0	58	0	26	540	0	0	0	0	0
	8:15 AM	63	134	0	0	170	68	0	0	0	48	2	29	514	0	0	0	0	0
	8:30 AM	67	129	0	0	161	62	0	0	0	85	0	30	534	0	0	0	0	0
	8:45 AM	65	153	0	0	147	59	0	0	0	54	0	21	499	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	481	1,132	0	0	1,264	505	0	0	0	515	4	274	4,175	0	0	0	0	0
	APPROACH %	30%	70%	0%	0%	71%	29%	0%	0%	0%	65%	1%	35%						
	APP/DEPART	1,613	/	1,406	1,769	/	1,779	0	/	0	793	/	990	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	237	582	0	0	699	260	0	0	0	251	3	146	2,178					
	APPROACH %	29%	71%	0%	0%	73%	27%	0%	0%	0%	63%	1%	37%						
	PEAK HR FACTOR		0.970			0.971			0.000			0.800		0.955					
	APP/DEPART	819	/	728	959	/	950	0	/	0	400	/	500	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	83	254	0	0	151	56	0	0	0	57	0	40	641	0	0	0	0	0
	4:15 PM	72	219	0	0	170	76	0	0	0	43	1	33	614	0	0	0	0	0
	4:30 PM	82	257	0	0	173	61	0	0	0	61	0	45	679	0	0	0	0	0
	4:45 PM	66	244	0	0	185	48	0	0	0	47	1	38	629	0	0	0	0	0
	5:00 PM	88	278	0	0	163	52	0	0	0	45	0	27	653	0	0	0	0	0
	5:15 PM	91	249	0	0	168	60	0	0	0	35	2	38	643	0	0	0	0	0
	5:30 PM	77	257	0	0	172	58	0	0	0	45	2	38	649	0	0	0	0	0
	5:45 PM	78	220	0	0	176	66	0	0	0	49	1	28	618	0	0	0	0	0
	VOLUMES	637	1,978	0	0	1,358	477	0	0	0	382	7	287	5,126	0	0	0	0	0
	APPROACH %	24%	76%	0%	0%	74%	26%	0%	0%	0%	57%	1%	42%						
	APP/DEPART	2,615	/	2,265	1,835	/	1,740	0	/	0	676	/	1,121	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	327	1,028	0	0	689	221	0	0	0	188	3	148	2,604					
	APPROACH %	24%	76%	0%	0%	76%	24%	0%	0%	0%	55%	1%	44%						
	PEAK HR FACTOR		0.926			0.972			0.000			0.800		0.959					
	APP/DEPART	1,355	/	1,176	910	/	877	0	/	0	339	/	551	0					



AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Heacock
EAST & WEST: SR-60 EB Ramps

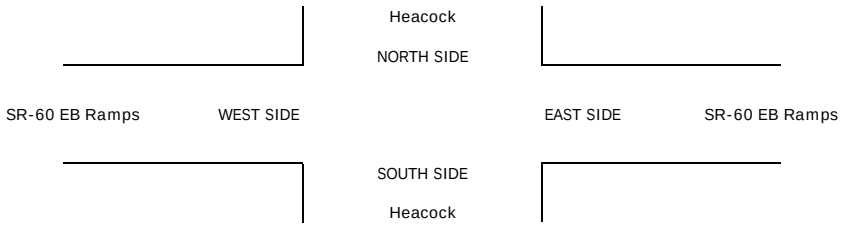
PROJECT #: SC1422
LOCATION #: 5
CONTROL: SIGNAL

NOTES:
PM NB queue

AM PM MD OTHER OTHER — ▲ N ◄ W E ► S ▼

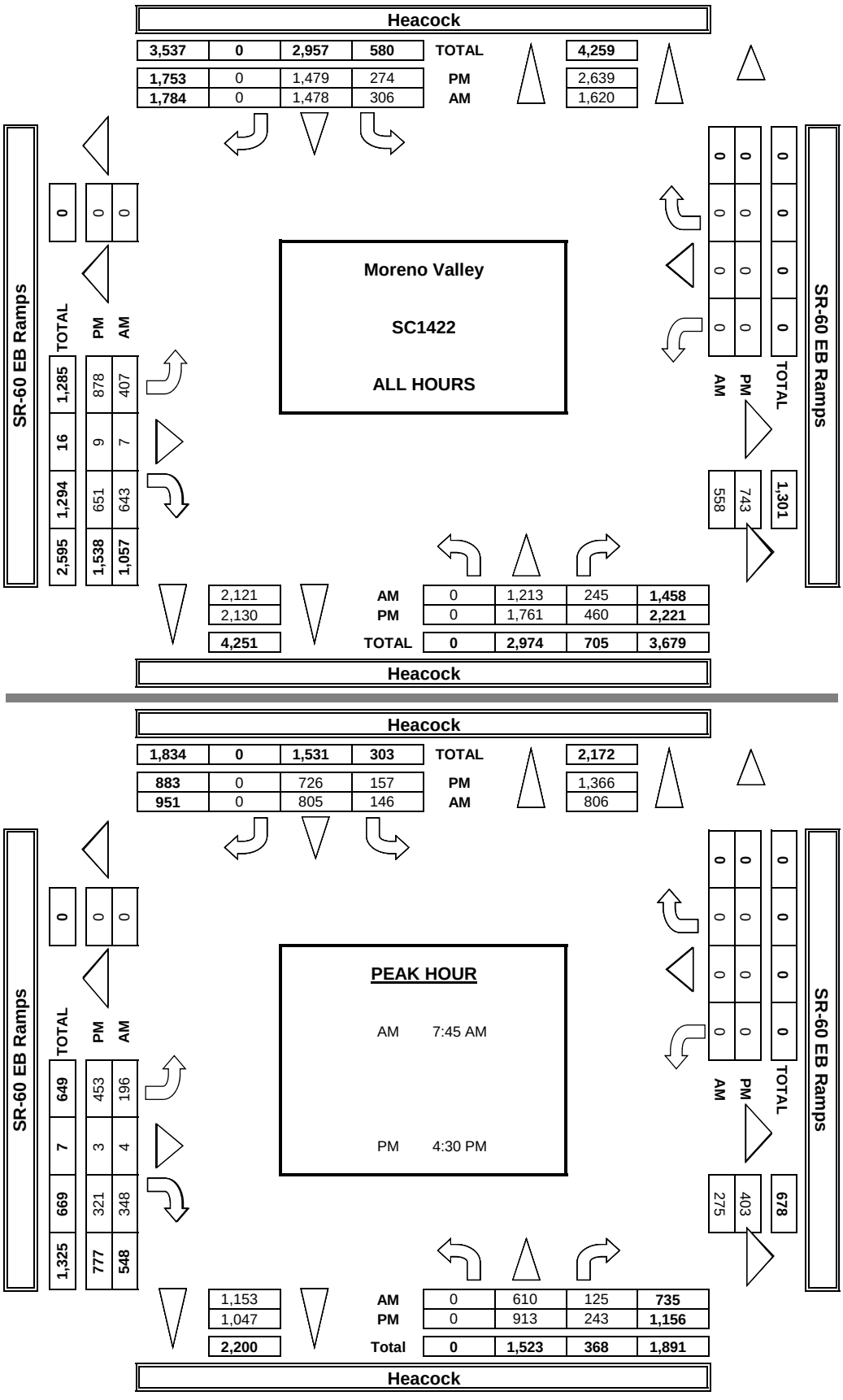
Add U-Turns to Left Turns

		NORTHBOUND Heacock			SOUTHBOUND Heacock			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps				U-TURNS				
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	143	29	31	134	0	54	0	55	0	0	0	446	0	0	0	0	0
	7:15 AM	0	132	38	47	172	0	52	0	70	0	0	0	511	0	0	0	0	0
	7:30 AM	0	163	24	55	194	0	50	1	71	0	0	0	558	0	0	0	0	0
	7:45 AM	0	167	33	59	194	0	34	1	83	0	0	0	571	0	0	0	0	0
	8:00 AM	0	151	33	27	206	0	60	1	79	0	0	0	557	0	0	0	0	0
	8:15 AM	0	143	28	35	185	0	56	0	96	0	0	0	543	0	0	0	0	0
	8:30 AM	0	149	31	25	220	0	46	2	90	0	0	0	563	0	0	0	0	0
	8:45 AM	0	165	29	27	173	0	55	2	99	0	0	0	550	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1,213	245	306	1,478	0	407	7	643	0	0	0	4,299	0	0	0	0	0
	APPROACH %	0%	83%	17%	17%	83%	0%	39%	1%	61%	0%	0%	0%						
	APP/DEPART	1,458	/	1,620	1,784	/	2,121	1,057	/	558	0	/	0	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	610	125	146	805	0	196	4	348	0	0	0	2,234					
	APPROACH %	0%	83%	17%	15%	85%	0%	36%	1%	64%	0%	0%	0%						
	PEAK HR FACTOR		0.919			0.940			0.901			0.000		0.978					
	APP/DEPART	735	/	806	951	/	1,153	548	/	275	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	234	48	23	180	0	105	2	100	0	0	0	692	0	0	0	0	0
	4:15 PM	0	191	58	26	191	0	104	1	82	0	0	0	653	0	0	0	0	0
	4:30 PM	0	215	56	34	204	0	126	2	101	0	0	0	738	0	0	0	0	0
	4:45 PM	0	201	58	36	191	0	112	1	90	0	0	0	689	0	0	0	0	0
	5:00 PM	0	264	68	40	172	0	106	0	64	0	0	0	714	0	0	0	0	0
	5:15 PM	0	233	61	47	159	0	109	0	66	0	0	0	675	0	0	0	0	0
	5:30 PM	0	223	53	26	196	0	115	2	84	0	0	0	699	0	0	0	0	0
	5:45 PM	0	200	58	42	186	0	101	1	64	0	0	0	652	0	0	0	0	0
	VOLUMES	0	1,761	460	274	1,479	0	878	9	651	0	0	0	5,512	0	0	0	0	0
	APPROACH %	0%	79%	21%	16%	84%	0%	57%	1%	42%	0%	0%	0%						
	APP/DEPART	2,221	/	2,639	1,753	/	2,130	1,538	/	743	0	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	913	243	157	726	0	453	3	321	0	0	0	2,816					
	APPROACH %	0%	79%	21%	18%	82%	0%	58%	0%	41%	0%	0%	0%						
	PEAK HR FACTOR		0.870			0.928			0.848			0.000		0.954					
	APP/DEPART	1,156	/	1,366	883	/	1,047	777	/	403	0	/	0	0					



AimTD LLC

TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: East FMV
EAST & WEST: Hemlock

PROJECT #: SC1422
LOCATION #: 6
CONTROL: STOP S

NOTES:

AM PM MD OTHER OTHER

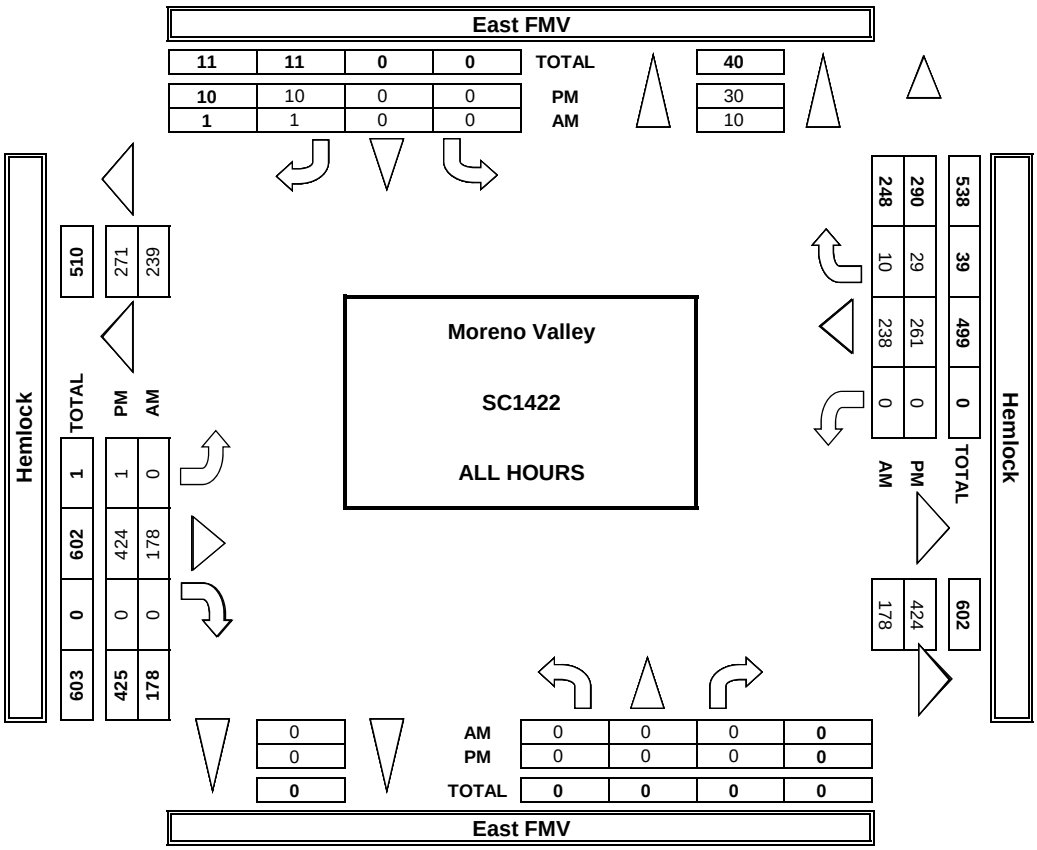
▲ N ◄ W E ► S ▼

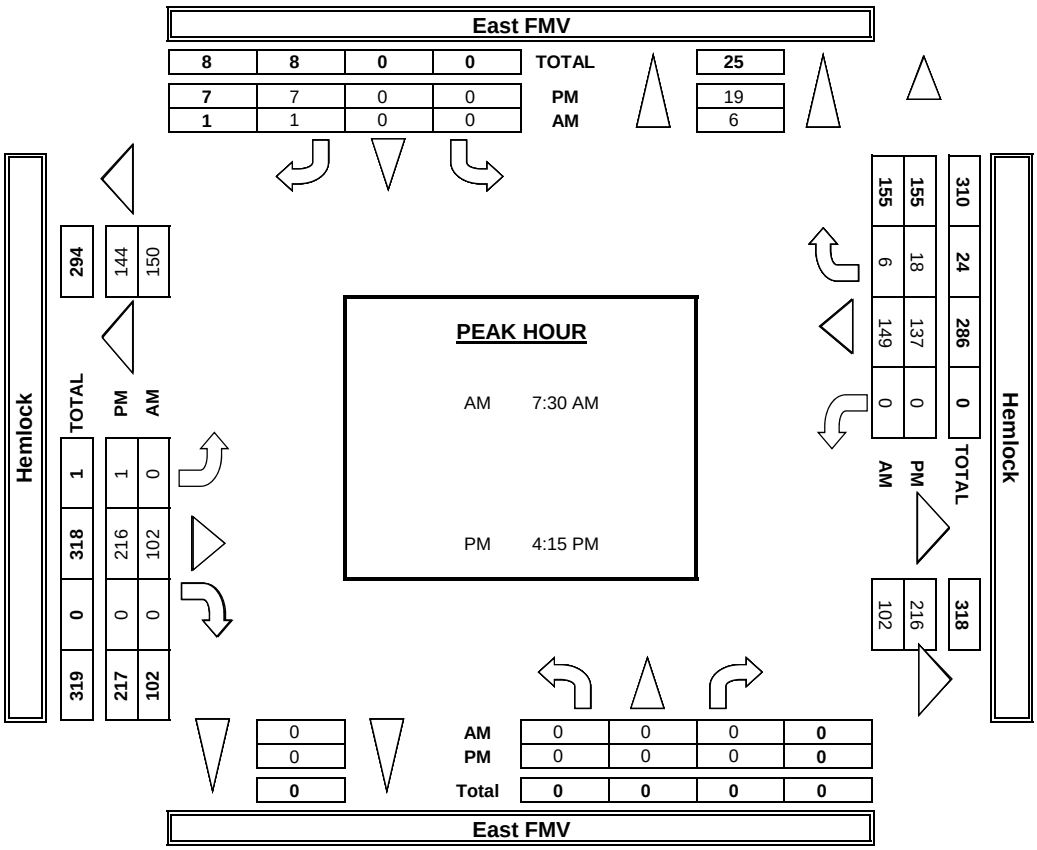
Add U-Turns to Left Turns

		NORTHBOUND East FMV			SOUTHBOUND East FMV			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL X	NT X	NR X	SL X	ST X	SR 0	EL X	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	0	0	0	0	0	0	16	0	0	17	0	33	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	15	0	0	18	0	33	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	33	0	0	34	1	68	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	34	0	0	38	2	75	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	18	0	0	35	1	54	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	17	0	0	42	2	61	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	21	0	0	25	3	49	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	24	0	0	29	1	54	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	1	0	178	0	0	238	10	427	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	96%	4%						
	APP/DEPART	0	/	10	1	/	0	178	/	178	248	/	239	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	0	0	1	0	102	0	0	149	6	258					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	96%	4%						
	PEAK HR FACTOR		0.000			0.250			0.750			0.881		0.860					
	APP/DEPART	0	/	6	1	/	0	102	/	102	155	/	150	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	48	0	0	27	4	79	0	0	0	0	0
	4:15 PM	0	0	0	0	0	1	1	50	0	0	32	2	86	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	55	0	0	36	2	94	0	0	0	0	0
	4:45 PM	0	0	0	0	0	4	0	52	0	0	31	9	96	0	0	0	0	0
	5:00 PM	0	0	0	0	0	1	0	59	0	0	38	5	103	0	0	0	0	0
	5:15 PM	0	0	0	0	0	2	0	44	0	0	28	1	75	0	0	0	0	0
	5:30 PM	0	0	0	0	0	1	0	54	0	0	28	4	87	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	62	0	0	41	2	105	0	0	0	0	0
	VOLUMES	0	0	0	0	0	10	1	424	0	0	261	29	725	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	90%	10%						
	APP/DEPART	0	/	30	10	/	0	425	/	424	290	/	271	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	0	0	0	7	1	216	0	0	137	18	379					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	88%	12%						
	PEAK HR FACTOR		0.000			0.438			0.919			0.901		0.920					
	APP/DEPART	0	/	19	7	/	0	217	/	216	155	/	144	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Davis
EAST & WEST: Hemlock

PROJECT #: SC1422
LOCATION #: 7
CONTROL: STOP N/S

NOTES:

AM PM MD OTHER OTHER

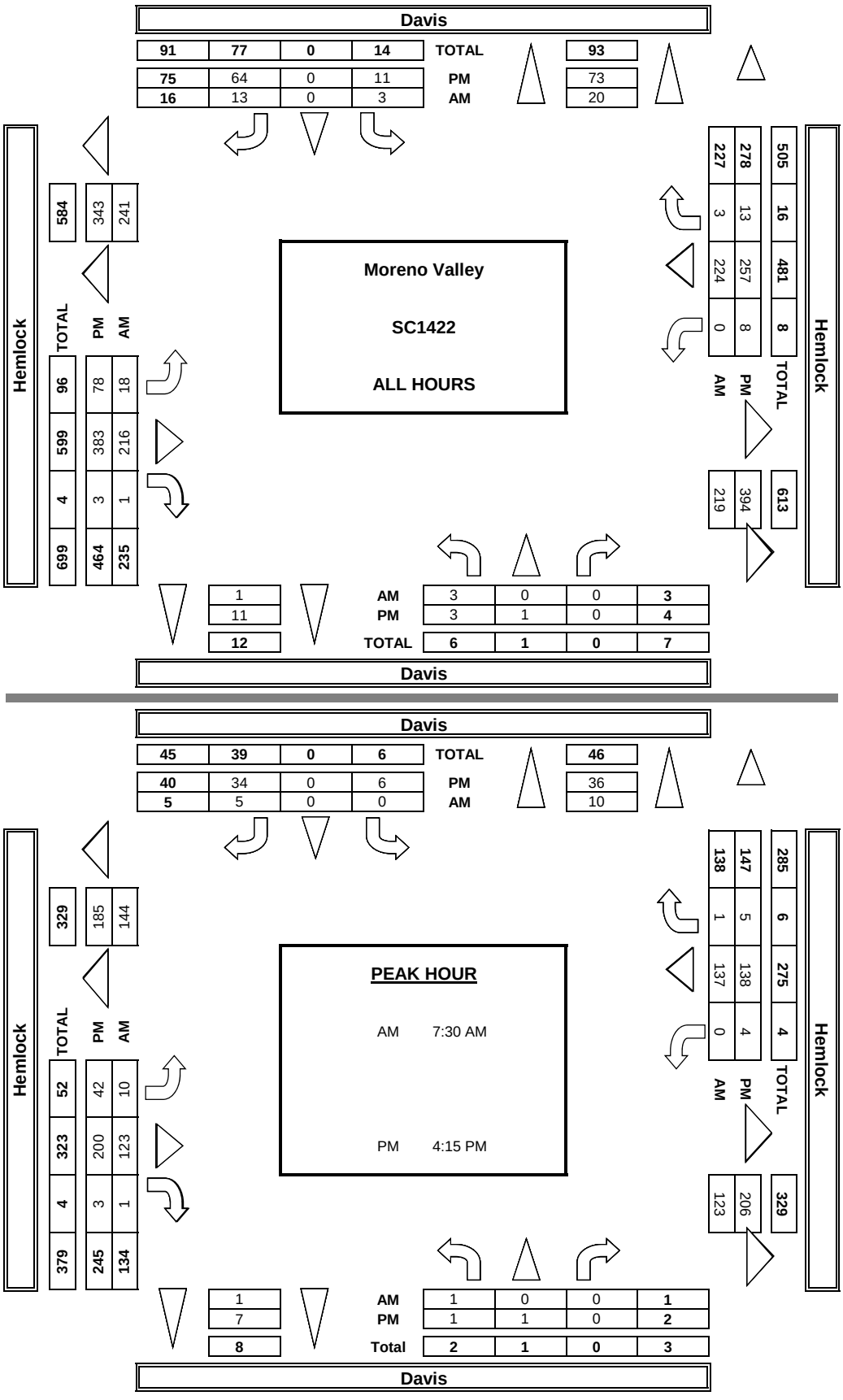
▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND Davis			SOUTHBOUND Davis			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	0	0	0	0	0	1	18	0	0	16	0	35	0	0	0	0	0
	7:15 AM	1	0	0	1	0	0	1	13	0	0	18	0	34	0	0	0	0	0
	7:30 AM	0	0	0	0	0	2	1	37	0	0	31	0	71	0	0	0	0	0
	7:45 AM	1	0	0	0	0	0	1	42	1	0	36	0	81	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	4	23	0	0	30	0	57	0	0	1	0	1
	8:15 AM	0	0	0	0	0	3	4	21	0	0	40	1	69	0	0	0	0	0
	8:30 AM	1	0	0	1	0	2	3	27	0	0	28	0	62	0	0	0	0	0
	8:45 AM	0	0	0	1	0	6	3	35	0	0	25	2	72	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	0	0	3	0	13	18	216	1	0	224	3	481	0	0	1	0	1
	APPROACH %	100%	0%	0%	19%	0%	81%	8%	92%	0%	0%	99%	1%						
	APP/DEPART	3	/	20	16	/	1	235	/	219	227	/	241	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	1	0	0	0	0	5	10	123	1	0	137	1	278					
	APPROACH %	100%	0%	0%	0%	0%	100%	7%	92%	1%	0%	99%	1%						
	PEAK HR FACTOR		0.250			0.417			0.761			0.841		0.858					
	APP/DEPART	1	/	10	5	/	1	134	/	123	138	/	144	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	10	9	50	0	2	24	1	97	0	0	1	0	1
	4:15 PM	0	0	0	3	0	9	9	49	0	1	34	0	105	0	0	2	0	2
	4:30 PM	0	0	0	1	0	7	6	48	1	1	33	1	98	0	0	2	0	2
	4:45 PM	0	1	0	0	0	10	15	55	0	2	41	1	125	0	0	2	0	2
	5:00 PM	1	0	0	2	0	8	12	48	2	0	30	3	106	0	0	6	0	6
	5:15 PM	2	0	0	2	0	4	7	30	0	0	27	2	74	0	0	5	0	5
	5:30 PM	0	0	0	1	0	6	9	52	0	1	28	2	99	0	0	0	0	0
	5:45 PM	0	0	0	1	0	10	11	51	0	1	40	3	117	0	0	1	0	1
	VOLUMES	3	1	0	11	0	64	78	383	3	8	257	13	821	0	0	19	0	1
	APPROACH %	75%	25%	0%	15%	0%	85%	17%	83%	1%	3%	92%	5%						
	APP/DEPART	4	/	73	75	/	11	464	/	394	278	/	343	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	1	1	0	6	0	34	42	200	3	4	138	5	434					
	APPROACH %	50%	50%	0%	15%	0%	85%	17%	82%	1%	3%	94%	3%						
	PEAK HR FACTOR		0.500			0.833			0.875			0.835		0.868					
	APP/DEPART	2	/	36	40	/	7	245	/	206	147	/	185	0					

AimTD LLC

TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Driveway
EAST & WEST: Hemlock

PROJECT #: SC1422
LOCATION #: 8
CONTROL: STOP N

NOTES:

AM PM MD OTHER OTHER

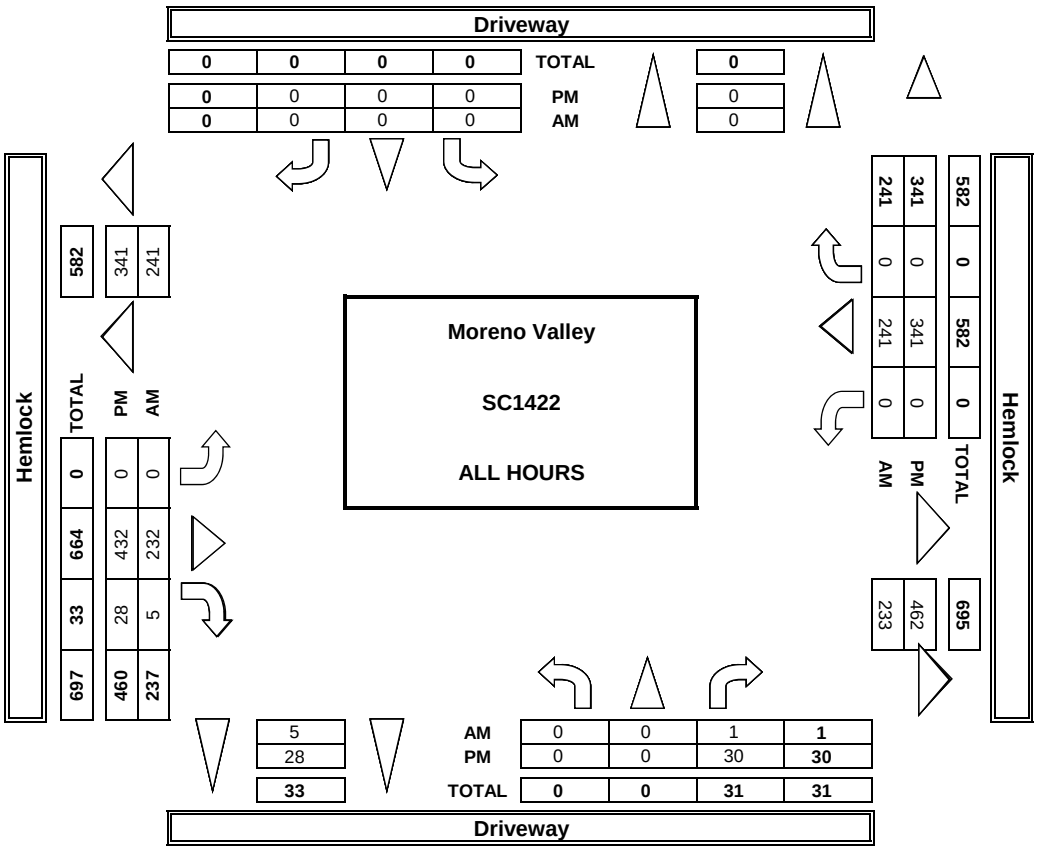
N ◄ W E ► S

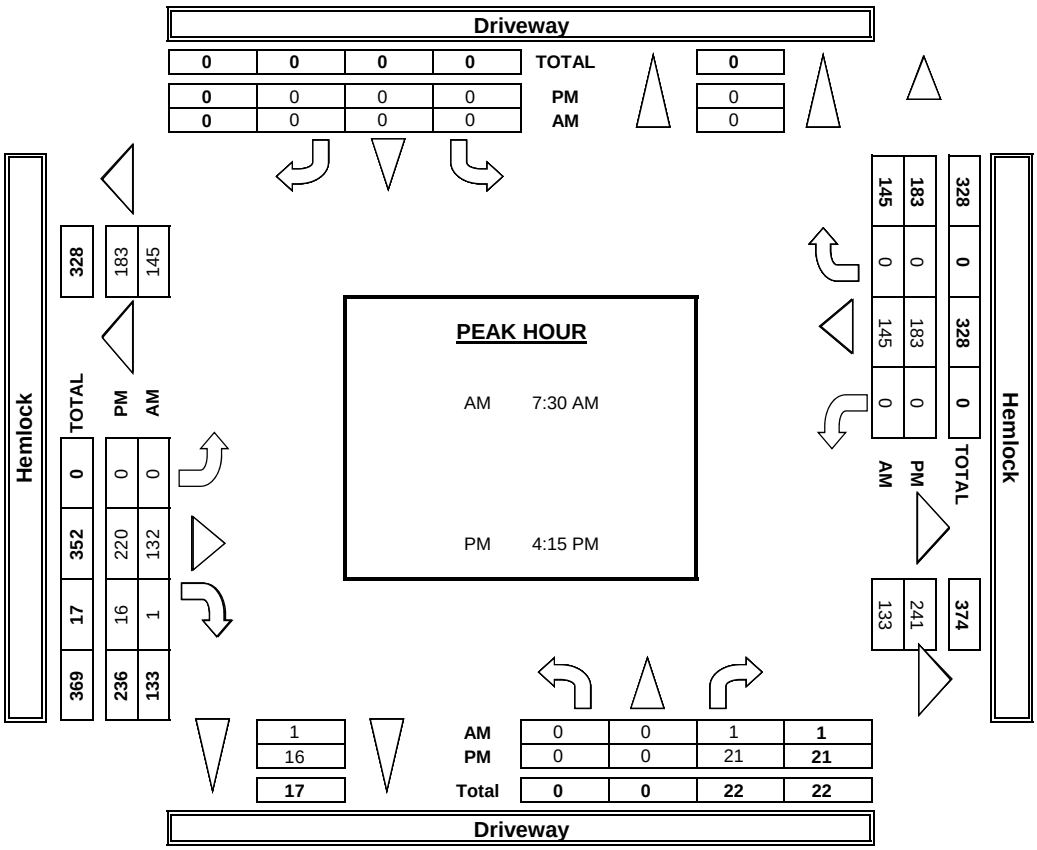
Add U-Turns to Left Turns

		NORTHBOUND Driveway			SOUTHBOUND Driveway			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL X	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL X	WT 3	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	0	0	0	0	0	0	15	2	0	19	0	36	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	19	0	0	18	0	37	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	43	0	0	33	0	76	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	38	0	0	39	0	77	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	24	0	0	31	0	55	0	0	0	0	0
	8:15 AM	0	0	1	0	0	0	0	27	1	0	42	0	71	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	29	0	0	32	0	61	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	37	2	0	27	0	66	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	0	0	0	0	232	5	0	241	0	479	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	98%	2%	0%	100%	0%						
	APP/DEPART	1	/	0	0	/	5	237	/	233	241	/	241	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	1	0	0	0	0	132	1	0	145	0	279					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	99%	1%	0%	100%	0%						
	PEAK HR FACTOR		0.250			0.000			0.773			0.863		0.906					
	APP/DEPART	1	/	0	0	/	1	133	/	133	145	/	145	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	2	0	0	0	0	55	3	0	35	0	95	0	0	0	0	0
	4:15 PM	0	0	3	0	0	0	0	58	6	0	45	0	112	0	0	0	0	0
	4:30 PM	0	0	3	0	0	0	0	53	4	0	41	0	101	0	0	0	0	0
	4:45 PM	0	0	6	0	0	0	0	53	2	0	50	0	111	0	0	0	0	0
	5:00 PM	0	0	9	0	0	0	0	56	4	0	47	0	116	0	0	0	0	0
	5:15 PM	0	0	4	0	0	0	0	38	4	0	37	0	83	0	0	0	0	0
	5:30 PM	0	0	1	0	0	0	0	59	4	0	32	0	96	0	0	0	0	0
	5:45 PM	0	0	2	0	0	0	0	60	1	0	54	0	117	0	0	0	0	0
	VOLUMES	0	0	30	0	0	0	0	432	28	0	341	0	831	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	94%	6%	0%	100%	0%						
	APP/DEPART	30	/	0	0	/	28	460	/	462	341	/	341	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	21	0	0	0	0	220	16	0	183	0	440					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	93%	7%	0%	100%	0%						
	PEAK HR FACTOR		0.583			0.000			0.922			0.915		0.948					
	APP/DEPART	21	/	0	0	/	16	236	/	241	183	/	183	0					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: IHOP
EAST & WEST: Hemlock

PROJECT #: SC1422
LOCATION #: 9
CONTROL: STOP S

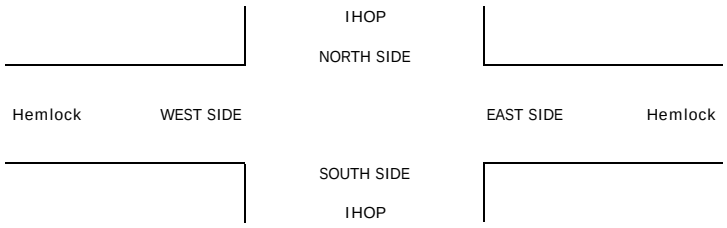
NOTES:

AM PM MD OTHER OTHER

N ◄ W E ► S

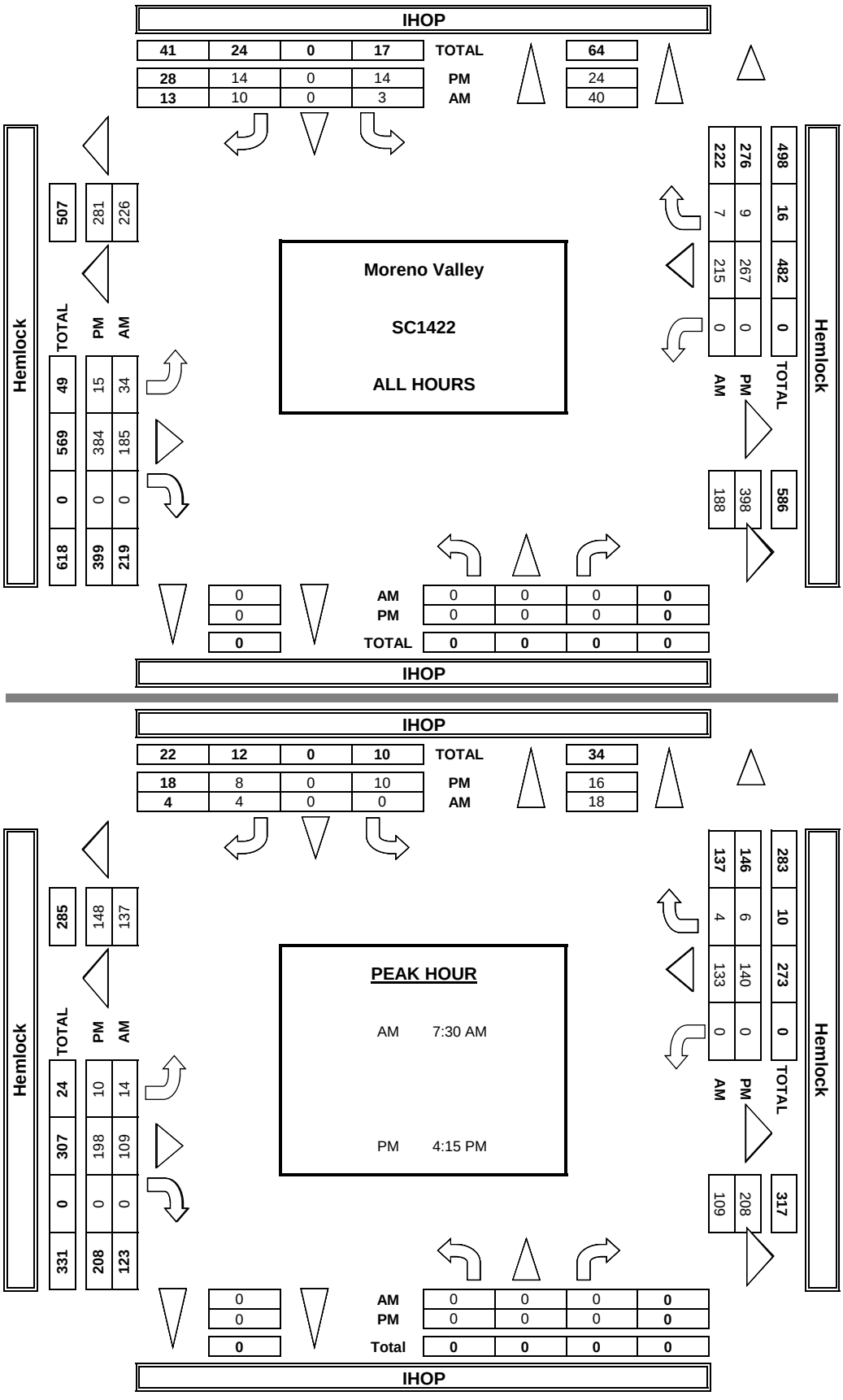
Add U-Turns to Left Turns

		NORTHBOUND IHOP			SOUTHBOUND IHOP			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	0	0	1	0	1	2	16	0	0	15	1	36	0	0	0	0	0
	7:15 AM	0	0	0	2	0	0	0	14	0	0	18	1	35	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	1	36	0	0	31	0	68	0	0	0	0	0
	7:45 AM	0	0	0	0	0	2	6	36	0	0	34	1	79	0	0	0	0	0
	8:00 AM	0	0	0	0	0	1	5	18	0	0	29	1	54	0	0	0	0	0
	8:15 AM	0	0	0	0	0	1	2	19	0	0	39	2	63	0	0	0	0	0
	8:30 AM	0	0	0	0	0	4	7	21	0	0	24	0	56	0	0	0	0	0
	8:45 AM	0	0	0	0	0	1	11	25	0	0	25	1	63	0	0	1	0	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	3	0	10	34	185	0	0	215	7	454	0	0	1	0	1
	APPROACH %	0%	0%	0%	23%	0%	77%	16%	84%	0%	0%	97%	3%						
	APP/DEPART	0	/	40	13	/	0	219	/	188	222	/	226	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	0	0	4	14	109	0	0	133	4	264					
	APPROACH %	0%	0%	0%	0%	0%	100%	11%	89%	0%	0%	97%	3%						
	PEAK HR FACTOR		0.000			0.500			0.732			0.835		0.835					
	APP/DEPART	0	/	18	4	/	0	123	/	109	137	/	137	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	1	1	50	0	0	26	1	80	0	0	0	0	0
	4:15 PM	0	0	0	0	0	2	7	46	0	0	35	2	92	0	0	0	0	0
	4:30 PM	0	0	0	6	0	2	1	48	0	0	32	2	91	0	0	0	0	0
	4:45 PM	0	0	0	3	0	3	2	52	0	0	41	1	102	0	0	0	0	0
	5:00 PM	0	0	0	1	0	1	0	52	0	0	32	1	87	0	0	0	0	0
	5:15 PM	0	0	0	2	0	2	1	35	0	0	26	1	67	0	0	0	0	0
	5:30 PM	0	0	0	0	0	1	0	52	0	0	30	0	83	0	0	0	0	0
	5:45 PM	0	0	0	1	0	2	3	49	0	0	45	1	101	0	0	0	0	0
	VOLUMES	0	0	0	14	0	14	15	384	0	0	267	9	703	0	0	0	0	0
	APPROACH %	0%	0%	0%	50%	0%	50%	4%	96%	0%	0%	97%	3%						
	APP/DEPART	0	/	24	28	/	0	399	/	398	276	/	281	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	0	10	0	8	10	198	0	0	140	6	372					
	APPROACH %	0%	0%	0%	56%	0%	44%	5%	95%	0%	0%	96%	4%						
	PEAK HR FACTOR		0.000			0.563			0.963			0.869		0.912					
	APP/DEPART	0	/	16	18	/	0	208	/	208	146	/	148	0					



AimTD LLC

TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

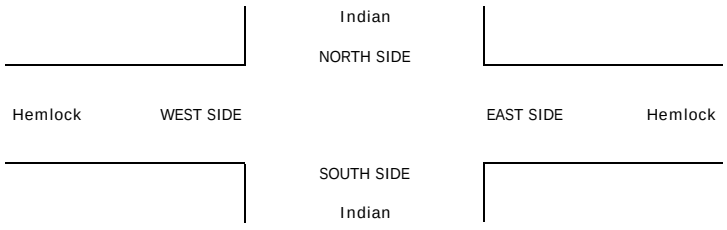
DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC1422
Wed, Aug 16, 17	NORTH & SOUTH:	Indian	LOCATION #:	13
	EAST & WEST:	Hemlock	CONTROL:	STOP S

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

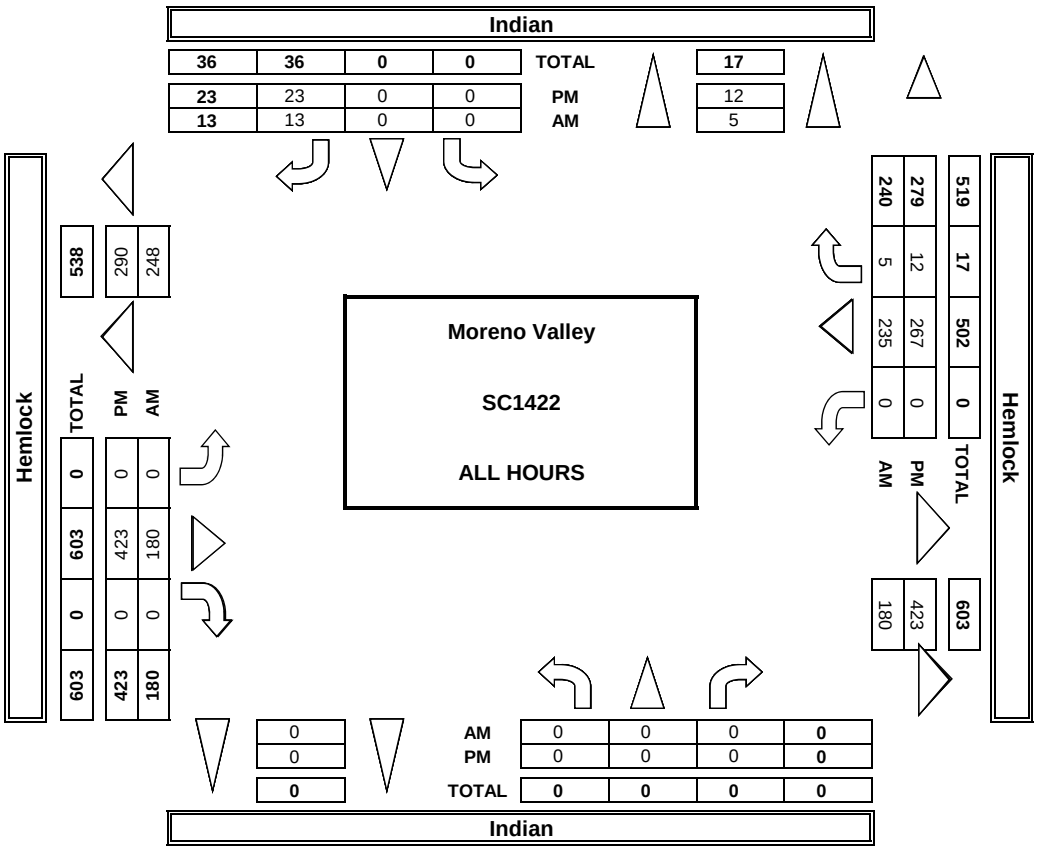
Add U-Turns to Left Turns

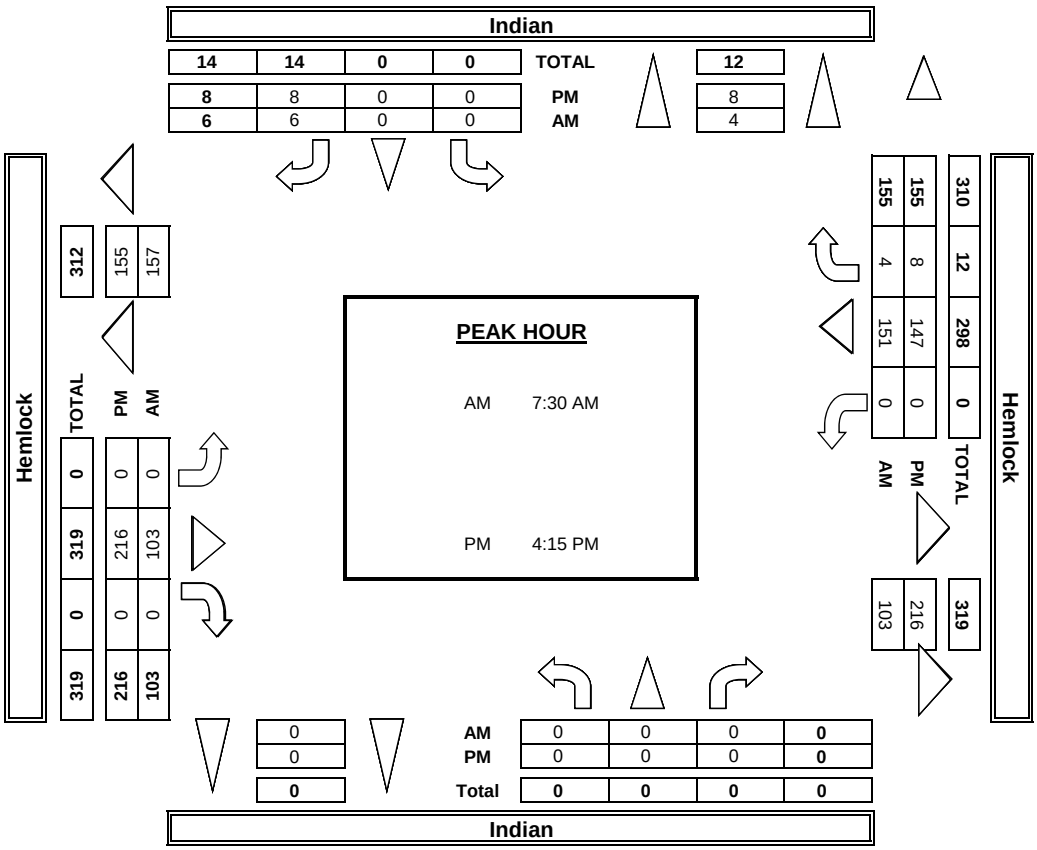
		NORTHBOUND Indian			SOUTHBOUND Indian			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL X	NT X	NR X	SL X	ST X	SR 0	EL X	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	0	0	0	0	2	0	16	0	0	15	0	33	0	0	0	0	0
	7:15 AM	0	0	0	0	0	1	0	15	0	0	17	1	34	0	0	0	0	0
	7:30 AM	0	0	0	0	0	4	0	34	0	0	31	1	70	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	34	0	0	39	2	76	0	0	0	0	0
	8:00 AM	0	0	0	0	0	1	0	18	0	0	35	1	55	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	17	0	0	46	0	63	0	0	0	0	0
	8:30 AM	0	0	0	0	0	2	0	21	0	0	26	0	49	0	0	0	0	0
	8:45 AM	0	0	0	0	0	2	0	25	0	0	26	0	53	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	13	0	180	0	0	235	5	433	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	98%	2%						
	APP/DEPART	0	/	5	13	/	0	180	/	180	240	/	248	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	0	0	6	0	103	0	0	151	4	264					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	97%	3%						
	PEAK HR FACTOR		0.000			0.375			0.757			0.842		0.868					
	APP/DEPART	0	/	4	6	/	0	103	/	103	155	/	157	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	1	0	48	0	0	30	1	80	0	0	0	0	0
	4:15 PM	0	0	0	0	0	4	0	50	0	0	30	4	88	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	55	0	0	37	3	96	0	0	0	0	0
	4:45 PM	0	0	0	0	0	3	0	52	0	0	37	1	93	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	59	0	0	43	0	102	0	0	0	0	0
	5:15 PM	0	0	0	0	0	3	0	44	0	0	26	0	73	0	0	0	0	0
	5:30 PM	0	0	0	0	0	4	0	54	0	0	28	2	88	0	0	0	0	0
	5:45 PM	0	0	0	0	0	7	0	61	0	0	36	1	105	0	0	0	0	0
	VOLUMES	0	0	0	0	0	23	0	423	0	0	267	12	725	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	96%	4%						
	APP/DEPART	0	/	12	23	/	0	423	/	423	279	/	290	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	0	0	0	8	0	216	0	0	147	8	379					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	95%	5%						
	PEAK HR FACTOR		0.000			0.500			0.915			0.901		0.929					
	APP/DEPART	0	/	8	8	/	0	216	/	216	155	/	155	0					



AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Davis
EAST & WEST: Ironwood

PROJECT #: SC1422
LOCATION #: 11
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER

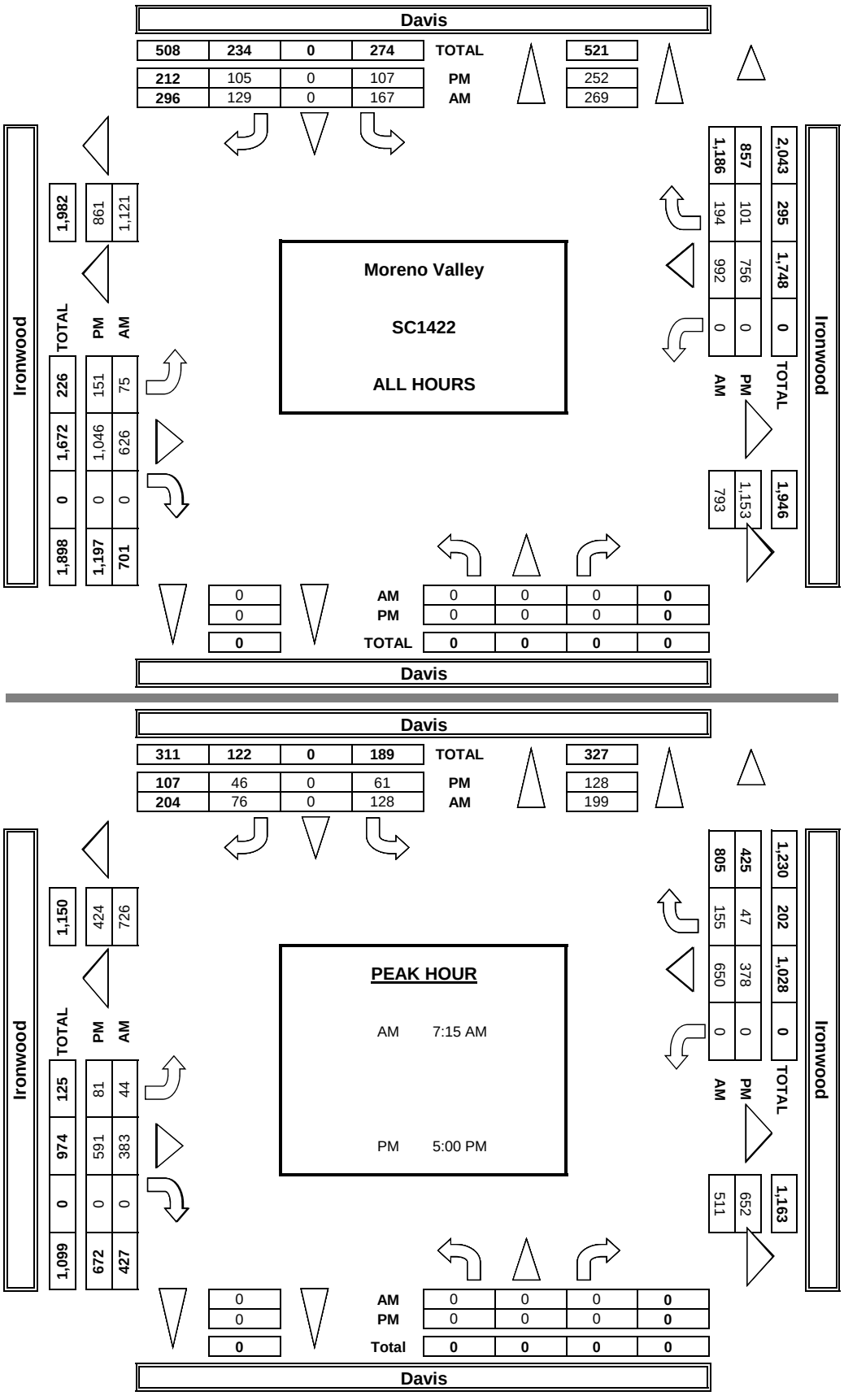
N ◄ W E ► S

Add U-Turns to Left Turns

		NORTHBOUND Davis			SOUTHBOUND Davis			EASTBOUND Ironwood			WESTBOUND Ironwood				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	0	0	0	15	0	13	15	54	0	0	104	21	222	0	0	0	0	0
	7:15 AM	0	0	0	38	0	18	11	96	0	0	140	31	334	0	0	0	0	0
	7:30 AM	0	0	0	29	0	17	14	116	0	0	155	58	389	0	0	0	0	0
	7:45 AM	0	0	0	34	0	21	9	91	0	0	213	44	412	0	0	0	0	0
	8:00 AM	0	0	0	27	0	20	10	80	0	0	142	22	301	0	0	0	0	0
	8:15 AM	0	0	0	12	0	13	3	51	0	0	96	5	180	0	0	0	0	0
	8:30 AM	0	0	0	6	0	10	4	68	0	0	78	5	171	0	0	0	0	0
	8:45 AM	0	0	0	6	0	17	9	70	0	0	64	8	174	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	167	0	129	75	626	0	0	992	194	2,183	0	0	0	0	0
	APPROACH %	0%	0%	0%	56%	0%	44%	11%	89%	0%	0%	84%	16%						
	APP/DEPART	0	/	269	296	/	0	701	/	793	1,186	/	1,121	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	128	0	76	44	383	0	0	650	155	1,436					
	APPROACH %	0%	0%	0%	63%	0%	37%	10%	90%	0%	0%	81%	19%						
	PEAK HR FACTOR		0.000			0.911			0.821			0.783		0.871					
	APP/DEPART	0	/	199	204	/	0	427	/	511	805	/	726	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	13	0	14	14	111	0	0	91	8	251	0	0	0	0	0
	4:15 PM	0	0	0	10	0	20	16	124	0	0	106	14	290	0	0	0	0	0
	4:30 PM	0	0	0	16	0	13	17	93	0	0	75	15	229	0	0	0	0	0
	4:45 PM	0	0	0	7	0	12	23	127	0	0	106	17	292	0	0	0	0	0
	5:00 PM	0	0	0	10	0	14	14	150	0	0	105	7	300	0	0	0	0	0
	5:15 PM	0	0	0	17	0	10	24	114	0	0	78	13	256	0	0	0	0	0
	5:30 PM	0	0	0	24	0	12	23	163	0	0	110	13	345	0	0	0	0	0
	5:45 PM	0	0	0	10	0	10	20	164	0	0	85	14	303	0	0	0	0	0
	VOLUMES	0	0	0	107	0	105	151	1,046	0	0	756	101	2,266	0	0	0	0	0
	APPROACH %	0%	0%	0%	50%	0%	50%	13%	87%	0%	0%	88%	12%						
	APP/DEPART	0	/	252	212	/	0	1,197	/	1,153	857	/	861	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	0	0	61	0	46	81	591	0	0	378	47	1,204					
	APPROACH %	0%	0%	0%	57%	0%	43%	12%	88%	0%	0%	89%	11%						
	PEAK HR FACTOR		0.000			0.743			0.903			0.864		0.872					
	APP/DEPART	0	/	128	107	/	0	672	/	652	425	/	424	0					

AimTD LLC

TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Aug 16, 17

LOCATION: Moreno Valley
NORTH & SOUTH: Indian
EAST & WEST: Ironwood

PROJECT #: SC1422
LOCATION #: 12
CONTROL: SIGNAL

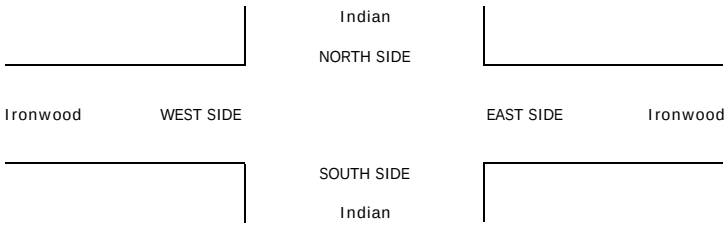
NOTES:

AM PM MD OTHER OTHER

N ▲ ◄ W E ► S ▼

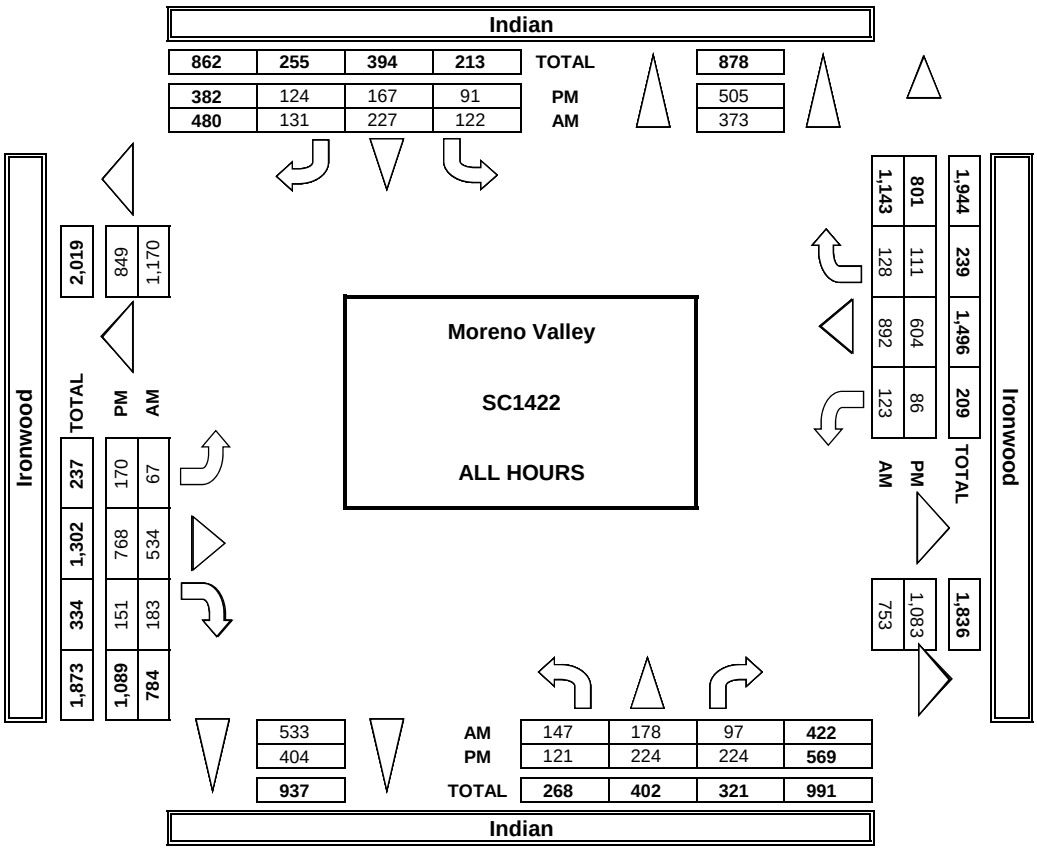
Add U-Turns to Left Turns

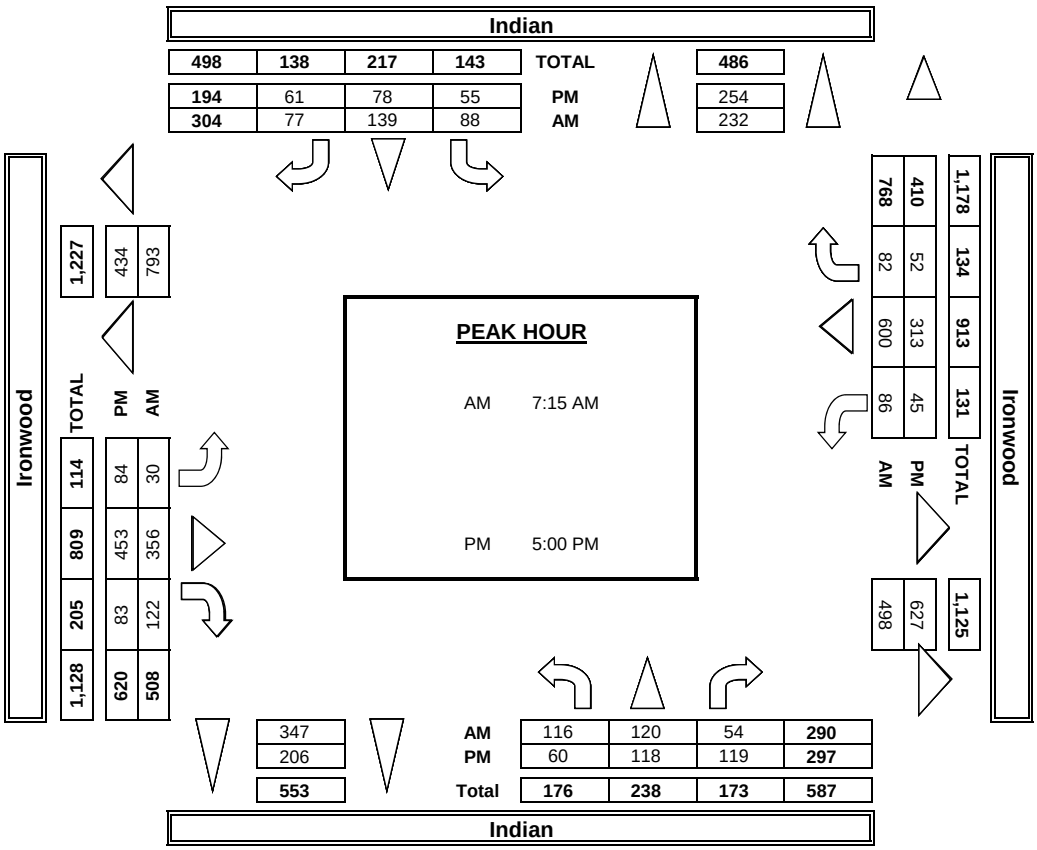
		NORTHBOUND Indian			SOUTHBOUND Indian			EASTBOUND Ironwood			WESTBOUND Ironwood				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	9	18	16	9	19	15	3	52	11	9	95	13	269	0	0	0	0	0
	7:15 AM	29	33	13	25	25	23	5	101	20	11	105	12	402	0	0	0	0	0
	7:30 AM	37	21	18	27	49	18	9	105	31	19	151	30	515	0	0	0	0	0
	7:45 AM	28	34	12	23	39	21	3	86	36	43	211	27	563	0	0	0	0	0
	8:00 AM	22	32	11	13	26	15	13	64	35	13	133	13	390	0	0	0	0	0
	8:15 AM	10	13	12	8	30	13	6	43	22	5	78	9	249	0	0	0	0	0
	8:30 AM	6	7	6	8	18	15	8	50	14	6	60	7	205	0	0	0	0	0
	8:45 AM	6	20	9	9	21	11	20	33	14	17	59	17	236	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	147	178	97	122	227	131	67	534	183	123	892	128	2,829	0	0	0	0	0
	APPROACH %	35%	42%	23%	25%	47%	27%	9%	68%	23%	11%	78%	11%						
	APP/DEPART	422	/	373	480	/	533	784	/	753	1,143	/	1,170	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	116	120	54	88	139	77	30	356	122	86	600	82	1,870					
	APPROACH %	40%	41%	19%	29%	46%	25%	6%	70%	24%	11%	78%	11%						
	PEAK HR FACTOR		0.954			0.809			0.876			0.683		0.830					
	APP/DEPART	290	/	232	304	/	347	508	/	498	768	/	793	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	14	31	20	9	22	11	18	73	16	12	68	14	308	0	0	0	0	0
	4:15 PM	20	23	21	10	22	18	21	92	21	8	80	13	349	0	0	0	0	0
	4:30 PM	12	24	27	7	18	14	27	62	16	13	59	12	291	0	0	0	0	0
	4:45 PM	15	28	37	10	27	20	20	88	15	8	84	20	372	0	0	0	0	0
	5:00 PM	19	33	31	19	22	15	20	97	24	12	79	13	384	0	0	0	0	0
	5:15 PM	16	34	34	11	15	14	18	98	17	6	63	17	343	0	0	0	0	0
	5:30 PM	14	23	30	10	21	18	27	128	22	11	95	10	409	0	0	0	0	0
	5:45 PM	11	28	24	15	20	14	19	130	20	16	76	12	385	0	0	0	0	0
	VOLUMES	121	224	224	91	167	124	170	768	151	86	604	111	2,841	0	0	0	0	0
	APPROACH %	21%	39%	39%	24%	44%	32%	16%	71%	14%	11%	75%	14%						
	APP/DEPART	569	/	505	382	/	404	1,089	/	1,083	801	/	849	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	60	118	119	55	78	61	84	453	83	45	313	52	1,521					
	APPROACH %	20%	40%	40%	28%	40%	31%	14%	73%	13%	11%	76%	13%						
	PEAK HR FACTOR		0.884			0.866			0.876			0.884		0.930					
	APP/DEPART	297	/	254	194	/	206	620	/	627	410	/	434	0					



AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

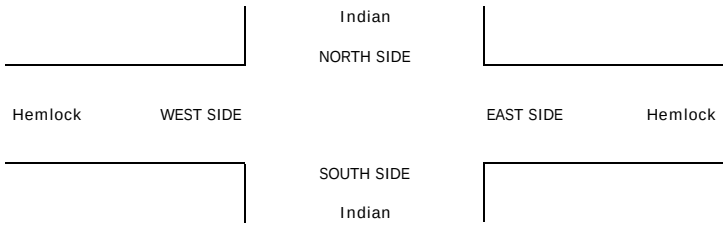
DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC1422
Wed, Aug 16, 17	NORTH & SOUTH:	Indian	LOCATION #:	13
	EAST & WEST:	Hemlock	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

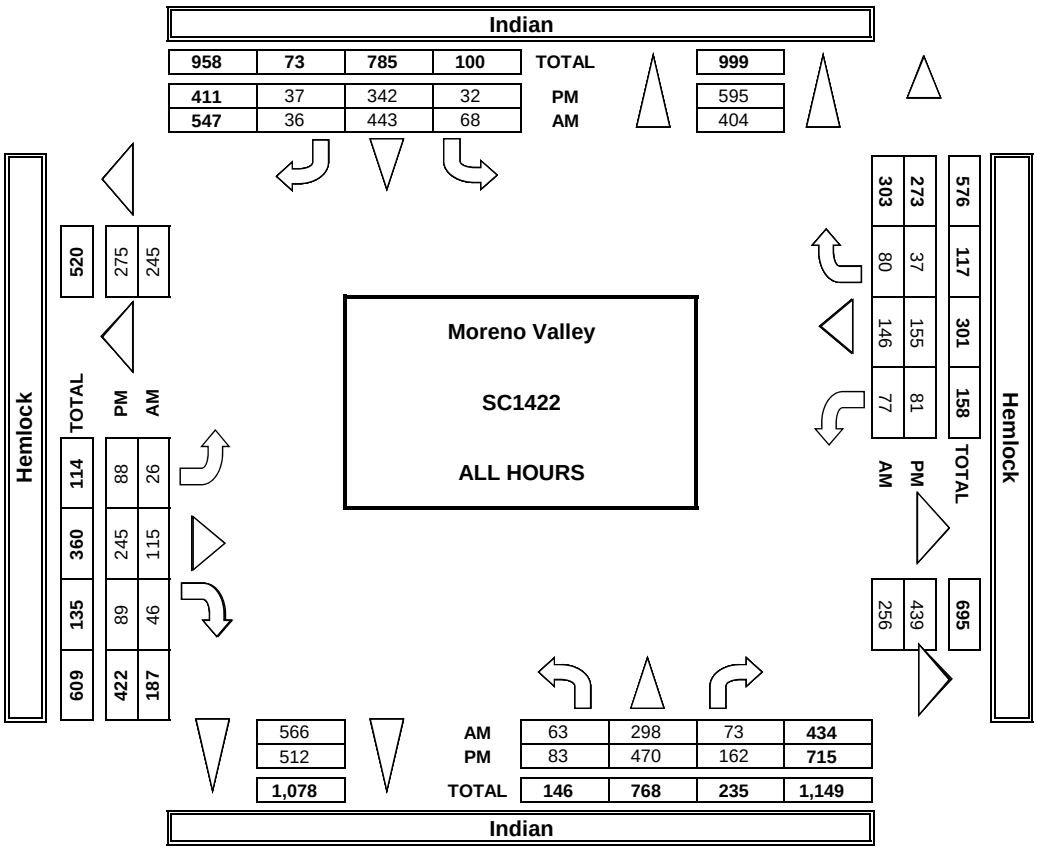
Add U-Turns to Left Turns

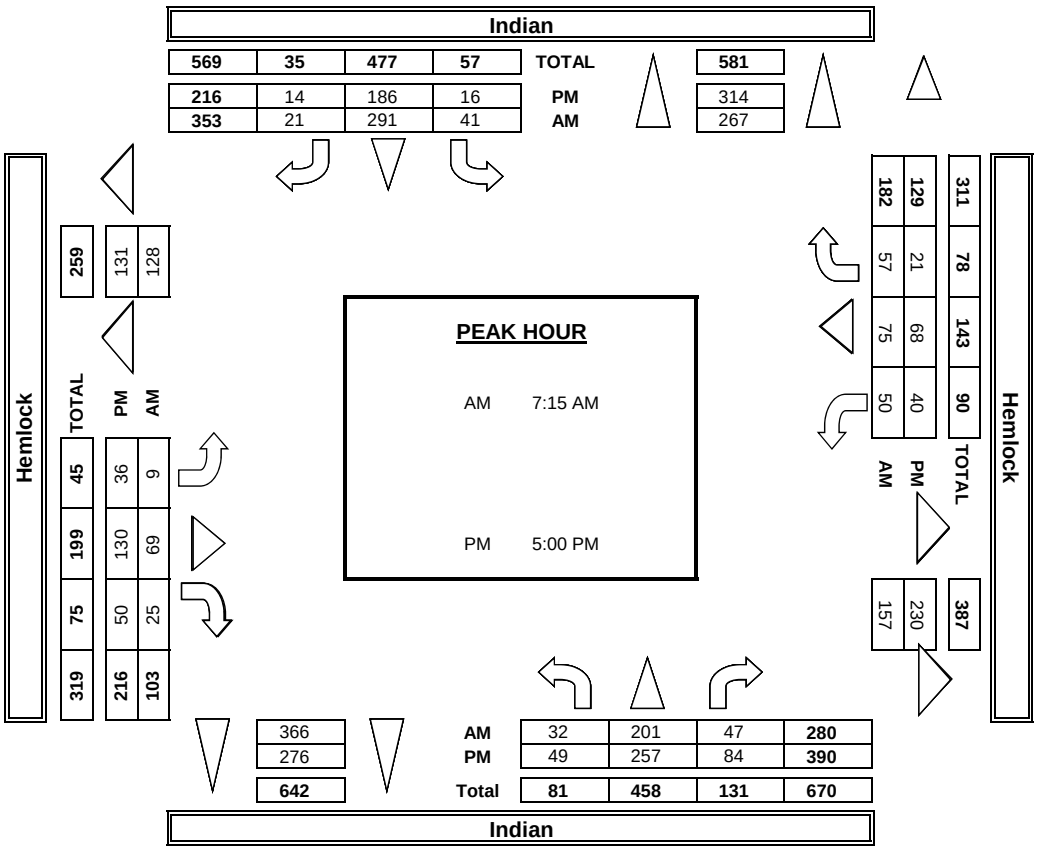
		NORTHBOUND Indian			SOUTHBOUND Indian			EASTBOUND Hemlock			WESTBOUND Hemlock				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	6	31	9	5	27	2	1	10	6	7	11	14	129	0	0	0	0	0
	7:15 AM	4	43	7	8	53	4	1	13	1	11	8	17	170	0	0	0	0	0
	7:30 AM	13	50	14	2	93	2	4	24	8	8	16	18	252	0	0	0	0	0
	7:45 AM	8	57	13	15	99	5	2	22	10	18	29	10	288	0	0	0	0	0
	8:00 AM	7	51	13	16	46	10	2	10	6	13	22	12	208	0	0	0	0	0
	8:15 AM	9	27	6	11	49	7	4	11	2	10	30	2	168	0	0	0	0	0
	8:30 AM	6	12	5	8	29	2	6	13	4	4	18	2	109	0	0	0	0	0
	8:45 AM	10	27	6	3	47	4	6	12	9	6	12	5	147	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	63	298	73	68	443	36	26	115	46	77	146	80	1,471	0	0	0	0	0
	APPROACH %	15%	69%	17%	12%	81%	7%	14%	61%	25%	25%	48%	26%						
	APP/DEPART	434	/	404	547	/	566	187	/	256	303	/	245	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	32	201	47	41	291	21	9	69	25	50	75	57	918					
	APPROACH %	11%	72%	17%	12%	82%	6%	9%	67%	24%	27%	41%	31%						
	PEAK HR FACTOR		0.897			0.742			0.715			0.798		0.797					
	APP/DEPART	280	/	267	353	/	366	103	/	157	182	/	128	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	8	45	22	6	43	1	12	25	10	7	23	4	206	0	0	0	0	0
	4:15 PM	6	57	17	4	35	9	8	30	6	13	21	7	213	0	0	0	0	0
	4:30 PM	9	43	21	3	40	3	17	29	13	10	23	1	212	0	0	0	0	0
	4:45 PM	11	68	18	3	38	10	15	31	10	11	20	4	239	0	0	0	0	0
	5:00 PM	13	64	17	5	53	5	13	31	12	12	19	2	246	0	0	0	0	0
	5:15 PM	11	77	23	2	34	1	5	27	11	7	16	7	221	0	0	0	0	0
	5:30 PM	12	65	17	6	50	4	7	34	12	7	13	6	233	0	0	0	0	0
	5:45 PM	13	51	27	3	49	4	11	38	15	14	20	6	251	0	0	0	0	0
	VOLUMES	83	470	162	32	342	37	88	245	89	81	155	37	1,821	0	0	0	0	0
	APPROACH %	12%	66%	23%	8%	83%	9%	21%	58%	21%	30%	57%	14%						
	APP/DEPART	715	/	595	411	/	512	422	/	439	273	/	275	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	49	257	84	16	186	14	36	130	50	40	68	21	951					
	APPROACH %	13%	66%	22%	7%	86%	6%	17%	60%	23%	31%	53%	16%						
	PEAK HR FACTOR		0.878			0.857			0.844			0.806		0.947					
	APP/DEPART	390	/	314	216	/	276	216	/	230	129	/	131	0					



AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC1422
Wed, Aug 16, 17	NORTH & SOUTH:	Indian	LOCATION #:	14
	EAST & WEST:	Sunnymead	CONTROL:	SIGNAL

NOTES:

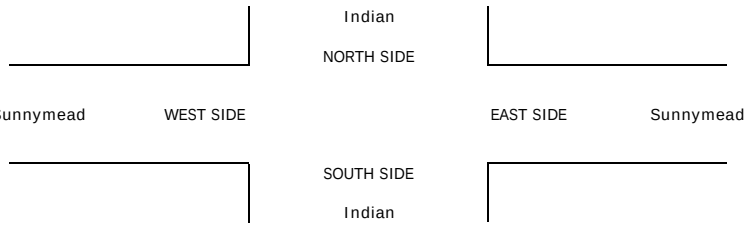
N-leg construction

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

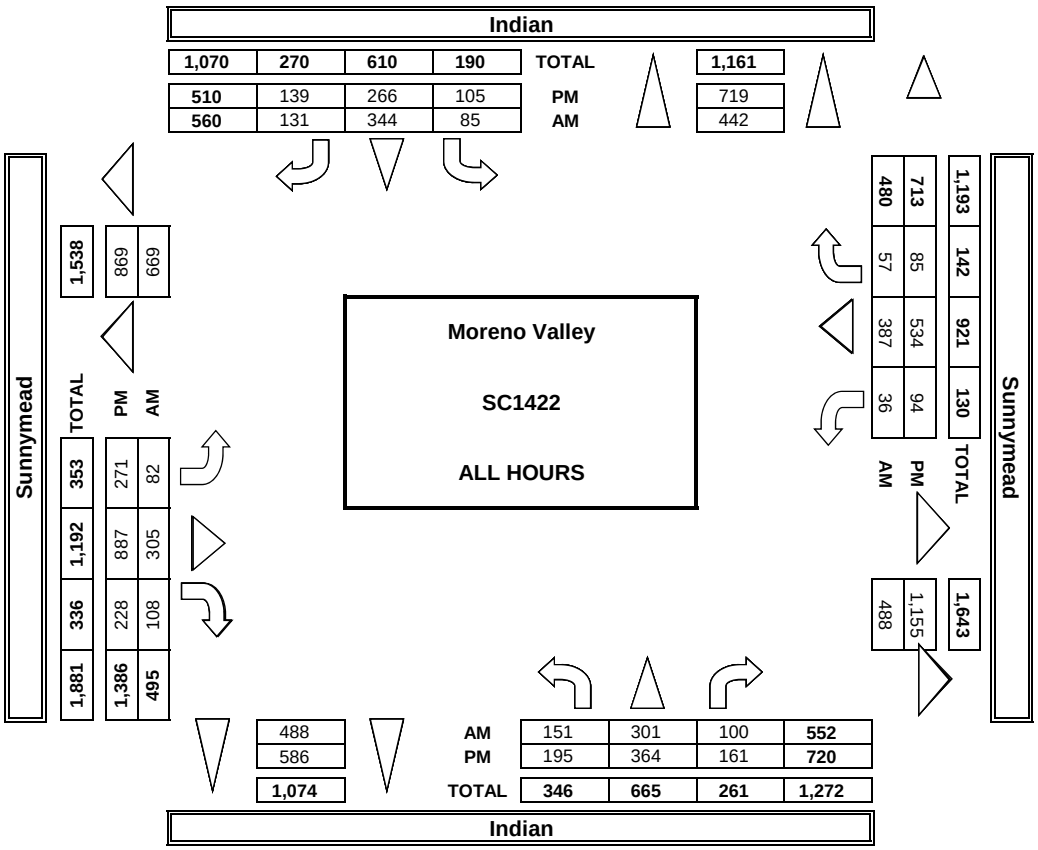
Add U-Turns to Left Turns

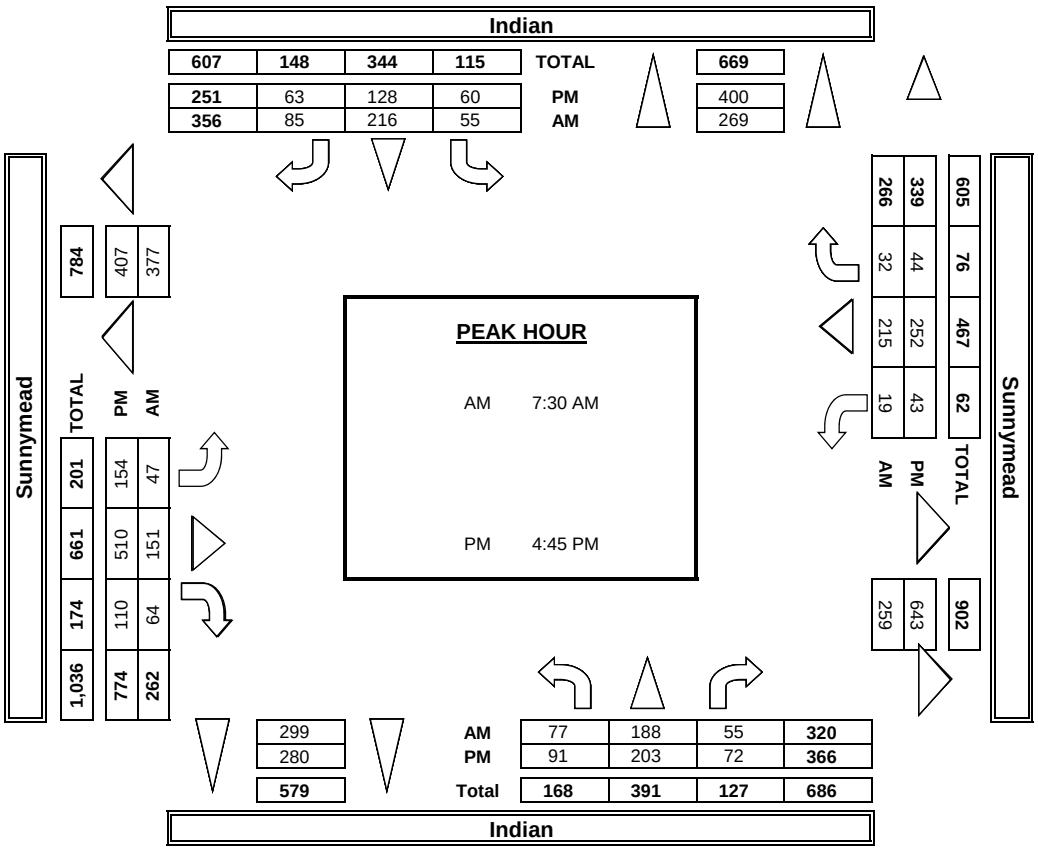
		NORTHBOUND Indian			SOUTHBOUND Indian			EASTBOUND Sunnymead			WESTBOUND Sunnymead				U-TURNS				
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	T
AM	7:00 AM	11	35	5	3	29	7	7	17	8	4	19	7	152	0	0	0	0	0
	7:15 AM	15	43	10	8	45	12	7	24	7	2	32	4	209	0	0	0	0	0
	7:30 AM	18	61	10	23	71	19	10	29	14	3	52	5	315	0	0	0	0	0
	7:45 AM	18	61	14	15	77	30	10	36	15	1	52	10	339	0	0	0	0	0
	8:00 AM	28	48	19	6	37	19	16	46	21	10	54	6	310	0	0	0	0	0
	8:15 AM	13	18	12	11	31	17	11	40	14	5	57	11	240	0	2	0	0	2
	8:30 AM	24	14	18	9	22	6	9	58	18	8	47	6	239	0	0	0	0	0
	8:45 AM	24	21	12	10	32	21	12	55	11	3	74	8	283	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	151	301	100	85	344	131	82	305	108	36	387	57	2,087	0	2	0	0	2
	APPROACH %	27%	55%	18%	15%	61%	23%	17%	62%	22%	8%	81%	12%						
	APP/DEPART	552	/	442	560	/	488	495	/	488	480	/	669	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	77	188	55	55	216	85	47	151	64	19	215	32	1,204					
	APPROACH %	24%	59%	17%	15%	61%	24%	18%	58%	24%	7%	81%	12%						
	PEAK HR FACTOR		0.842			0.730			0.789			0.911		0.888					
	APP/DEPART	320	/	269	356	/	299	262	/	259	266	/	377	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	31	46	18	7	29	23	22	85	22	13	69	9	374	0	0	0	0	0
	4:15 PM	29	40	20	10	29	16	27	95	31	8	66	12	383	0	0	0	0	0
	4:30 PM	24	37	27	8	36	20	28	87	37	16	81	9	410	0	0	0	1	1
	4:45 PM	23	54	21	13	33	11	39	131	22	13	64	11	435	0	0	0	0	0
	5:00 PM	25	48	15	21	40	17	36	142	26	6	59	17	452	0	0	0	0	0
	5:15 PM	21	53	20	12	17	20	35	115	31	14	67	7	412	0	0	0	1	1
	5:30 PM	22	48	16	14	38	15	44	122	31	10	62	9	431	0	0	1	0	1
	5:45 PM	20	38	24	20	44	17	40	110	28	14	66	11	432	0	0	0	0	0
	VOLUMES	195	364	161	105	266	139	271	887	228	94	534	85	3,329	0	0	1	2	3
	APPROACH %	27%	51%	22%	21%	52%	27%	20%	64%	16%	13%	75%	12%						
	APP/DEPART	720	/	719	510	/	586	1,386	/	1,155	713	/	869	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	91	203	72	60	128	63	154	510	110	43	252	44	1,730					
	APPROACH %	25%	55%	20%	24%	51%	25%	20%	66%	14%	13%	74%	13%						
	PEAK HR FACTOR		0.934			0.804			0.949			0.963		0.957					
	APP/DEPART	366	/	400	251	/	280	774	/	643	339	/	407	0					



AimTD LLC

TURNING MOVEMENT COUNTS





A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS1 Heacock between Ironwood and Hemlock

AM	NORTHBOUND														PM	NORTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	48	2	0	1	0	0	0	0	0	0	0	0	51	12:00	1	146	21	1	6	3	0	0	0	0	0	0	0	178
0:15	1	35	5	0	0	1	0	0	0	0	0	0	0	42	12:15	1	132	29	1	11	1	1	0	0	0	0	1	0	177
0:30	0	28	1	0	1	0	0	0	0	0	0	0	0	30	12:30	0	142	19	0	8	5	0	0	0	0	0	0	0	174
0:45	0	33	2	0	0	0	0	0	0	0	0	0	0	35	12:45	3	150	25	0	4	0	1	1	0	0	0	0	0	184
1:00	0	30	3	0	1	0	0	0	0	0	0	0	0	34	13:00	4	152	17	0	5	2	1	0	0	0	0	0	0	181
1:15	0	25	3	0	0	0	0	0	0	0	0	0	0	28	13:15	7	124	18	1	7	3	0	0	2	0	0	0	0	162
1:30	0	21	2	0	1	0	0	0	0	0	0	0	0	24	13:30	4	139	26	1	8	5	0	0	0	0	1	0	0	184
1:45	0	24	4	0	0	0	0	0	0	0	0	0	0	28	13:45	1	161	18	0	15	2	1	0	0	0	0	0	0	198
2:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14	14:00	4	152	23	0	8	4	0	0	0	1	1	1	0	194
2:15	0	23	0	0	0	0	0	0	0	0	0	0	0	23	14:15	2	150	24	0	7	5	1	0	1	1	0	0	0	191
2:30	0	14	1	0	0	0	0	0	0	0	0	0	0	15	14:30	2	160	27	0	7	3	1	0	0	0	0	0	0	200
2:45	0	24	2	0	0	0	0	0	0	0	0	0	0	26	14:45	3	149	30	0	5	2	0	0	0	1	0	1	1	192
3:00	0	10	3	0	1	0	0	0	0	0	0	0	0	14	15:00	1	189	33	0	8	4	0	0	1	0	0	1	0	237
3:15	0	13	1	0	1	0	0	0	0	0	0	0	0	15	15:15	1	172	27	0	3	7	1	0	1	0	0	1	0	213
3:30	0	16	4	0	0	0	0	0	0	0	0	0	0	20	15:30	1	173	17	1	10	8	0	0	0	0	0	0	0	210
3:45	0	20	3	0	0	0	0	0	0	0	0	0	0	23	15:45	3	149	28	0	8	4	0	0	0	0	0	0	0	192
4:00	0	19	2	0	2	0	0	0	1	0	0	0	0	24	16:00	3	193	31	0	7	3	0	0	0	0	0	0	0	237
4:15	0	14	6	0	0	0	0	0	0	0	0	0	0	20	16:15	2	175	25	0	11	3	1	0	1	0	0	0	0	218
4:30	0	23	6	0	2	0	0	0	0	0	0	0	0	31	16:30	4	203	28	0	6	3	1	0	0	0	0	0	0	245
4:45	0	25	7	0	1	0	0	0	0	0	0	0	0	33	16:45	4	186	33	0	9	4	1	0	0	1	1	0	0	239
5:00	0	40	2	0	1	0	0	1	0	0	0	0	0	44	17:00	6	210	33	2	9	9	0	0	0	1	0	0	0	270
5:15	0	33	6	0	0	0	0	0	0	0	0	0	0	39	17:15	3	200	31	0	11	2	0	1	1	0	0	0	0	249
5:30	0	30	5	0	2	0	0	0	1	0	0	0	0	38	17:30	6	196	22	0	10	3	1	0	1	0	0	1	1	241
5:45	0	33	5	0	5	1	0	0	0	0	0	0	0	44	17:45	3	189	20	0	5	2	2	0	0	0	0	0	0	221
6:00	0	64	9	0	1	0	0	0	0	0	0	0	0	74	18:00	7	159	23	0	5	4	0	0	0	0	0	1	0	199
6:15	4	63	10	0	4	0	0	0	0	0	0	0	0	81	18:15	7	169	27	0	6	5	0	0	0	0	1	0	0	215
6:30	0	83	13	0	6	1	1	0	0	0	0	0	1	105	18:30	0	148	23	0	3	4	0	0	0	0	0	1	0	179
6:45	2	77	15	0	2	0	1	0	0	0	0	0	0	97	18:45	3	146	18	0	6	10	1	0	0	0	0	1	0	185
7:00	1	109	12	0	3	2	3	0	0	0	0	0	1	131	19:00	3	160	16	0	8	3	1	1	0	0	0	0	0	192
7:15	2	112	17	0	5	5	1	0	0	0	0	0	0	142	19:15	4	147	20	0	5	5	1	0	0	0	1	0	0	183
7:30	1	129	22	0	5	3	0	0	0	0	0	0	0	160	19:30	0	125	12	0	5	3	1	0	0	0	0	0	0	146
7:45	2	123	22	1	4	1	0	0	0	0	0	0	0	153	19:45	1	160	15	0	6	2	0	0	0	0	0	2	0	186
8:00	2	132	19	0	6	1	0	0	0	0	0	1	0	161	20:00	6	128	22	0	4	3	0	0	0	0	0	0	0	163
8:15	2	121	16	0	9	3	0	0	0	0	1	1	0	153	20:15	2	123	16	0	4	1	1	0	0	0	0	0	0	147
8:30	0	117	17	0	6	0	0	0	0	0	0	1	0	141	20:30	2	128	15	0	3	1	0	0	0	0	0	0	0	149
8:45	0	111	17	0	6	3	0	0	0	0	0	0	0	137	20:45	0	128	11	0	5	1	0	1	0	0	0	0	0	146
9:00	0	94	20	0	8	2	1	0	0	0	0	0	0	125	21:00	3	96	13	0	0	4	0	0	0	0	0	0	0	116
9:15	0	93	19	1	4	2	3	0	0	0	0	0	0	122	21:15	1	122	10	0	2	3	0	0	0	0	0	0	0	138
9:30	0	98	18	0	4	1	0	0	0	0	1	0	0	122	21:30	2	99	13	0	3	2	0	0	0	0	0	0	0	119
9:45	3	100	14	0	3	2	0	0	0	0	1	0	0	123	21:45	0	89	7	0	4	1	0	0	0	0	0	0	0	101
10:00	2	119	7	1	2	1	0	0	0	0	0	0	0	132	22:00	1	78	10	0	3	1	0	0	0	0	0	0	0	93
10:15	2	87	18	1	5	3	1	0	0	1	0	0	0	118	22:15	1	82	9	0	0	2	0	0	0	0	0	0	0	94
10:30	2	118	16	1	1	2	1	0	1	0	0	0	0	142	22:30	2	67	12	0	0	1	0	0	0	0	0	0	0	82
10:45	1	91	17	0	4	0	0	0	0	0	0	0	0	113	22:45	1	71	1	0	0	0	0	0	0	0	0	0	0	73
11:00	4	122	23	0	6	2	1	0	1	0	1	0	0	160	23:00	4	66	4	0	3	1	0	0	0	0	0	0	0	78
11:15	1	131	14	0	5	2	0	1	0	0	0	1	0	155	23:15	0	53	1	0	2	1	0	0	0	0	0	0	0	57
11:30	3	139	15	1	6	6	0	0	0	0	0	0	0	170	23:30	0	58	5	0	0	0	0	0	0	0	0	0	0	63
11:45	2	110	21	0	6	3	1	0	1	0	0	0	0	144	23:45	0	47	2	0	0	0	0	0	0	0	0	0	0	49
TOTAL	37	3,136	468	6	130	47	14	2	5	1	4	4	2	3,856	TOTAL	119	6,641	910	7	265	145	18	4	8	5	5	11	2	8,140

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	629

PM PEAK HOUR	4:30 PM
PM PEAK VOLUME	1,003

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	156	9,777	1,378	13	395	192	32	6	13	6	9	15	4	11,996
% OF TOTAL	1.3%	81.5%	11.5%	0.1%	3.3%	1.6%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	318	19,409	2,696	25	710	366	66	10	35	9	16	32	9	23,701
% OF TOTAL	2.7%	161.8%	22.5%	0.2%	5.9%	3.1%	0.6%	0.1%	0.3%	0.1%	0.1%	0.3%	0.1%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS1 Heacock between Ironwood and Hemlock

AM	SOUTHBOUND														PM	SOUTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	24	1	0	0	0	0	0	0	0	0	0	0	25	12:00	3	107	18	1	2	2	0	0	1	0	0	0	0	134
0:15	0	30	2	0	0	0	0	0	0	0	0	0	0	32	12:15	4	152	15	1	13	6	1	0	1	0	0	1	0	194
0:30	0	14	4	0	0	0	0	0	0	0	0	0	0	18	12:30	2	142	14	0	6	3	1	0	0	0	0	0	0	168
0:45	0	19	3	0	1	0	0	0	0	0	0	0	0	23	12:45	1	108	17	0	2	3	2	0	0	0	0	0	0	133
1:00	0	15	0	0	1	0	0	0	0	0	0	0	0	16	13:00	4	152	15	0	5	3	2	0	0	0	0	0	0	181
1:15	0	11	1	0	1	0	0	0	0	0	0	0	0	13	13:15	0	152	22	2	6	2	0	1	0	0	0	2	0	187
1:30	0	15	0	0	0	0	0	0	0	0	0	0	0	15	13:30	0	127	11	0	5	6	4	0	1	1	0	0	1	156
1:45	0	17	0	0	0	0	0	0	0	0	0	0	0	17	13:45	1	132	18	0	12	4	0	0	1	0	0	0	0	168
2:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12	14:00	6	111	23	0	6	4	0	0	0	0	0	0	0	150
2:15	0	17	1	0	0	0	0	0	1	0	0	0	0	19	14:15	3	149	19	0	8	1	2	0	0	0	1	1	0	184
2:30	0	14	2	0	0	0	0	0	0	0	0	0	0	16	14:30	5	137	22	0	5	5	2	0	0	0	0	1	0	177
2:45	0	9	1	0	2	0	0	0	0	0	0	0	0	12	14:45	0	129	19	0	10	2	1	0	0	0	0	1	0	162
3:00	0	32	3	0	0	0	0	0	0	0	0	0	0	35	15:00	1	154	20	0	2	0	0	1	0	0	0	1	0	179
3:15	1	26	4	0	0	1	0	0	0	0	0	0	0	32	15:15	3	147	12	0	7	3	0	0	0	0	0	0	0	172
3:30	0	46	6	0	0	0	0	0	0	0	0	0	0	52	15:30	5	126	19	0	2	4	0	0	0	0	0	2	0	158
3:45	1	50	8	0	2	1	0	0	0	0	0	0	0	62	15:45	2	131	12	0	4	5	0	0	0	0	0	0	1	155
4:00	0	48	16	0	6	0	0	0	0	0	0	0	0	70	16:00	2	148	19	0	5	0	0	0	0	0	1	0	0	175
4:15	0	77	19	0	7	2	0	0	1	0	0	0	0	106	16:15	3	156	19	0	6	1	0	0	0	0	0	0	0	185
4:30	1	89	16	0	4	0	0	0	0	0	0	0	0	110	16:30	2	158	18	0	2	5	2	0	0	1	0	0	0	188
4:45	2	76	28	0	4	0	0	0	0	0	0	0	0	110	16:45	10	151	18	0	7	5	0	0	1	0	0	0	0	192
5:00	0	93	14	0	3	1	0	0	0	0	0	0	0	111	17:00	3	145	20	0	2	3	0	0	0	0	0	0	0	173
5:15	0	97	21	0	3	1	0	0	0	0	0	0	0	122	17:15	3	155	20	0	1	5	1	0	0	0	1	1	0	187
5:30	0	88	31	0	8	1	0	0	0	0	0	0	0	128	17:30	6	149	22	0	3	0	1	0	0	0	0	0	1	182
5:45	0	81	18	0	3	0	0	0	0	0	0	0	0	102	17:45	4	156	9	0	7	3	0	0	0	0	0	1	0	180
6:00	0	89	14	0	2	1	0	0	0	0	0	0	0	106	18:00	5	173	14	0	4	3	0	0	1	0	0	0	0	200
6:15	3	89	17	0	1	0	0	0	1	0	0	1	0	112	18:15	2	147	12	0	1	2	0	0	1	0	0	0	0	165
6:30	0	116	22	0	2	1	0	0	0	0	0	0	0	141	18:30	2	144	25	0	4	0	0	0	0	1	0	0	0	176
6:45	2	112	18	0	5	4	1	0	0	0	0	0	0	142	18:45	3	162	15	0	3	4	0	0	0	0	0	0	0	187
7:00	2	125	22	1	4	1	3	0	1	0	0	0	0	159	19:00	5	132	19	0	1	3	0	0	0	0	0	0	0	160
7:15	6	164	13	0	2	5	1	0	0	0	0	0	0	191	19:15	3	101	21	0	5	2	1	0	1	0	0	0	0	134
7:30	4	170	19	0	2	3	0	0	0	0	0	0	0	198	19:30	1	119	14	0	3	3	0	0	0	0	1	0	0	141
7:45	3	171	21	1	5	4	0	0	0	0	0	2	0	207	19:45	0	106	15	0	1	2	0	0	0	0	0	0	0	124
8:00	3	175	21	0	4	5	3	0	0	0	0	0	1	212	20:00	0	104	15	0	3	1	1	0	0	0	0	0	0	124
8:15	8	161	18	1	7	3	1	0	1	0	0	0	0	200	20:15	0	93	17	0	2	1	0	0	0	0	0	0	0	113
8:30	4	151	24	0	16	5	0	0	0	0	0	0	0	200	20:30	0	100	13	0	2	0	0	0	0	0	0	1	0	116
8:45	2	142	15	1	3	5	1	0	0	0	0	0	0	169	20:45	0	87	5	0	2	0	0	0	0	0	0	1	0	95
9:00	2	105	16	0	4	2	0	0	1	0	1	0	0	131	21:00	1	74	14	0	1	1	1	0	0	0	0	0	0	92
9:15	0	137	17	1	7	0	1	0	0	0	0	0	0	163	21:15	0	85	10	0	1	1	0	0	1	0	0	0	0	98
9:30	0	131	14	0	8	3	0	0	0	0	1	0	0	157	21:30	1	77	10	0	0	2	0	0	1	0	0	0	0	91
9:45	7	130	17	0	3	2	0	0	0	0	0	1	0	160	21:45	0	68	8	0	0	0	0	0	0	0	0	0	0	76
10:00	1	119	16	0	3	5	0	0	0	0	0	0	0	144	22:00	0	60	3	0	1	1	0	0	0	0	0	0	0	65
10:15	3	122	14	0	3	3	0	0	0	0	0	0	0	145	22:15	0	57	6	1	2	1	0	0	0	0	0	0	0	67
10:30	0	133	23	1	3	3	1	2	1	0	0	0	0	167	22:30	0	45	5	0	1	0	0	0	1	0	0	0	0	52
10:45	2	138	21	0	4	0	0	0	0	0	0	0	0	165	22:45	1	49	9	0	1	0	0	0	0	0	0	0	0	60
11:00	3	118	14	0	3	3	0	0	1	0	0	0	0	142	23:00	0	39	3	0	0	1	0	0	0	0	0	0	0	43
11:15	0	119	11	1	4	2	0	0	0	0	1	0	1	139	23:15	0	20	2	0	2	0	0	0	1	0	0	0	0	25
11:30	0	124	23	0	3	2	0	0	0	0	0	0	0	152	23:30	0	28	2	0	1	0	0	0	0	0	0	0	0	31
11:45	5	116	28	0	3	2	0	0	1	0	0	0	0	155	23:45	0	33	1	0	0	0	0	0	1	0	0	0	0	35
TOTAL	65	4,155	639	7	146	71	12	2	9	0	3	4	2	5,115	TOTAL	97	5,477	679	5	169	103	22	2	13	3	4	13	3	6,590

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	819

PM PEAK HOUR	5:15 PM
PM PEAK VOLUME	749

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	162	9,632	1,318	12	315	174	34	4	22	3	7	17	5	11,705
% OF TOTAL	1.4%	82.3%	11.3%	0.1%	2.7%	1.5%	0.3%	0.0%	0.2%	0.0%	0.1%	0.1%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS2 Heacock between Hemlock and SR-60 WB Ramps

AM	NORTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	1	50	4	0	2	0	0	0	0	0	0	0	0	57
0:15	1	39	3	0	0	0	0	0	0	0	0	0	0	43
0:30	0	38	1	0	2	0	0	0	0	0	0	0	0	41
0:45	0	40	3	0	0	0	0	0	0	0	0	0	0	43
1:00	0	36	1	0	3	0	0	0	0	0	0	0	0	40
1:15	0	23	3	0	0	1	1	0	0	0	0	0	0	28
1:30	0	25	2	0	1	0	0	0	0	0	0	0	0	28
1:45	0	27	4	0	0	0	0	0	0	0	0	0	0	31
2:00	0	16	2	0	0	0	0	0	0	0	0	0	0	18
2:15	0	24	1	0	0	1	0	0	0	0	0	0	0	26
2:30	0	18	2	0	0	0	0	0	0	0	0	0	0	20
2:45	0	28	2	0	0	0	0	0	0	0	0	0	0	30
3:00	0	14	4	0	2	0	0	0	0	0	0	0	0	20
3:15	0	16	1	0	1	0	0	0	0	0	0	0	0	18
3:30	0	17	4	0	0	0	0	0	0	0	0	0	0	21
3:45	0	25	3	0	1	0	0	0	0	0	0	0	0	29
4:00	0	27	4	0	5	0	0	0	1	0	0	0	0	37
4:15	0	16	5	0	1	0	0	0	0	0	0	0	0	22
4:30	0	31	9	0	1	0	0	0	0	0	0	0	0	41
4:45	0	32	5	0	10	1	0	0	0	0	0	0	0	48
5:00	0	43	3	0	2	1	0	1	1	0	0	0	0	51
5:15	2	35	8	0	1	1	0	0	0	0	0	0	0	47
5:30	0	34	2	0	4	0	0	0	2	0	0	0	0	42
5:45	0	38	5	0	6	1	0	0	0	0	0	0	0	50
6:00	2	56	10	0	2	0	0	0	1	0	0	1	0	72
6:15	4	64	14	0	4	1	0	0	0	0	0	0	0	87
6:30	1	89	15	1	6	4	0	1	0	0	0	0	1	118
6:45	2	80	15	0	5	2	0	0	0	0	0	0	1	105
7:00	5	136	12	2	9	6	3	0	0	0	0	0	1	174
7:15	4	133	21	0	5	3	1	0	0	0	0	0	0	167
7:30	5	154	20	0	5	2	1	0	0	0	0	2	3	192
7:45	0	152	22	1	4	2	2	0	0	0	0	0	0	183
8:00	2	138	20	0	5	4	2	0	1	0	0	0	0	172
8:15	3	136	12	0	8	1	2	0	1	0	0	0	1	164
8:30	2	134	15	0	7	6	1	0	0	0	0	0	0	165
8:45	1	137	17	0	10	1	2	0	0	1	0	0	0	169
9:00	0	132	23	2	10	4	2	0	0	0	0	1	0	174
9:15	5	109	19	1	6	3	2	0	1	0	1	0	1	148
9:30	6	115	17	1	6	7	0	0	0	2	0	0	0	154
9:45	2	132	15	1	7	3	3	1	2	1	0	0	0	167
10:00	3	113	11	2	6	5	1	0	0	0	1	2	0	144
10:15	10	103	24	1	6	4	1	0	2	0	2	0	0	153
10:30	5	107	11	0	3	5	1	0	0	0	0	1	1	134
10:45	2	105	22	2	6	4	1	1	1	0	1	0	1	146
11:00	6	145	29	1	10	6	2	1	2	0	0	0	0	202
11:15	6	131	14	6	8	3	0	1	2	1	0	0	1	173
11:30	6	149	15	1	6	9	1	1	0	0	0	1	0	189
11:45	3	137	21	1	6	2	3	0	2	0	0	1	1	177
TOTAL	89	3,579	495	23	192	93	32	7	19	5	5	9	12	4,560

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	741

PM	NORTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	15	148	20	1	10	5	0	2	1	0	0	0	1	203
12:15	1	138	22	1	8	4	1	0	0	3	1	1	1	181
12:30	9	140	14	3	11	8	0	0	1	0	1	2	1	190
12:45	4	142	19	0	6	3	3	1	1	0	0	2	2	183
13:00	3	151	21	0	6	2	2	0	0	2	0	0	2	189
13:15	9	140	21	2	7	5	3	2	1	0	0	1	1	192
13:30	5	167	34	0	11	3	0	0	0	2	1	1	0	224
13:45	8	163	21	0	9	9	1	0	1	1	1	0	1	215
14:00	8	149	21	2	8	5	1	0	1	1	1	1	1	199
14:15	8	147	24	0	11	4	1	3	0	0	1	0	2	201
14:30	5	165	21	2	7	7	0	1	0	0	0	2	2	212
14:45	4	157	26	0	3	5	3	1	1	0	0	1	2	203
15:00	2	189	30	1	11	7	2	1	3	0	1	2	1	250
15:15	3	200	27	0	7	4	1	0	1	0	0	0	2	245
15:30	2	192	27	2	9	2	3	0	0	0	0	2	3	242
15:45	10	153	23	0	6	6	0	0	0	0	1	2	0	201
16:00	8	206	25	0	4	5	1	0	2	0	1	0	2	254
16:15	8	224	24	1	17	0	1	1	2	1	1	0	0	280
16:30	5	247	24	1	9	7	1	0	1	0	0	2	1	298
16:45	4	228	21	1	7	1	0	1	2	1	1	1	2	270
17:00	5	249	26	0	7	6	5	2	1	0	0	3	4	308
17:15	6	236	23	0	12	6	0	2	1	0	2	1	4	293
17:30	8	246	20	1	13	8	0	2	0	0	2	1	4	305
17:45	12	232	19	0	10	3	2	0	0	0	1	0	3	282
18:00	0	167	19	0	5	4	0	2	0	0	1	2	2	202
18:15	3	170	19	0	5	8	6	0	0	0	2	2	1	216
18:30	1	166	17	1	5	2	1	0	0	0	0	1	1	195
18:45	3	164	17	0	8	8	1	0	1	0	0	2	1	205
19:00	0	192	19	0	8	8	0	0	0	1	0	0	1	229
19:15	8	160	22	0	8	6	0	0	0	1	0	1	1	207
19:30	6	147	15	1	7	7	1	1	0	0	0	0	0	185
19:45	0	153	14	0	7	4	0	0	0	0	0	0	1	179
20:00	3	136	21	0	5	5	2	1	1	0	1	1	0	176
20:15	1	153	20	0	4	0	0	0	0	0	0	0	0	178
20:30	2	138	17	0	5	1	1	0	0	1	0	1	0	166
20:45	1	145	18	0	9	6	1	1	0	0	0	0	0	181
21:00	2	121	16	0	4	2	0	1	0	0	0	0	0	146
21:15	2	148	15	0	3	2	0	0	0	0	0	0	0	170
21:30	1	117	12	1	4	1	1	0	0	0	0	1	0	138
21:45	3	101	7	0	6	0	1	0	1	1	1	0	0	121
22:00	3	92	11	0	2	3	0	0	0	0	0	0	0	111
22:15	0	111	12	0	2	0	0	0	0	0	0	0	0	125
22:30	3	87	10	0	0	0	1	0	0	0	0	0	0	101
22:45	0	105	8	0	1	0	0	0	0	0	0	0	0	114
23:00	2	89	2	0	3	1	0	0	0	0	0	0	0	97
23:15	0	67	5	0	3	0	0	0	0	0	0	0	0	75
23:30	0	80	8	0	1	0	1	0	0	0	0	0	0	90
23:45	0	60	5	0	2	0	0	0	0	0	0	0	0	67
TOTAL	196	7,478	882	21	316	183	48	25	23	15	21	36	50	9,294

PM PEAK HOUR	5:00 PM
PM PEAK VOLUME	1,188

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	285	11,057	1,377	44	508	276	80	32	42	20	26	45	62	13,854
% OF TOTAL	2.1%	79.8%	9.9%	0.3%	3.7%	2.0%	0.6%	0.2%	0.3%	0.1%	0.2%	0.3%	0.4%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	596	21,543	2,476	107	849	542	178	79	97	50	55	80	150	26,802
% OF TOTAL	4.3%	155.5%	17.9%	0.8%	6.1%	3.9%	1.3%	0.6%	0.7%	0.4%	0.4%	0.6%	1.1%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS2 Heacock between Hemlock and SR-60 WB Ramps

AM	SOUTHBOUND														PM	SOUTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	33	1	0	0	0	0	0	0	0	0	0	0	34	12:00	6	134	15	0	6	4	1	1	0	0	1	0	0	168
0:15	0	34	2	0	0	0	0	0	0	0	0	0	0	36	12:15	6	120	13	0	10	6	3	0	1	0	0	1	2	162
0:30	2	25	4	0	0	0	0	0	0	0	0	0	0	31	12:30	9	140	10	2	6	5	3	1	2	1	3	1	1	184
0:45	0	20	3	0	1	0	0	0	0	0	0	0	0	24	12:45	2	138	16	0	6	4	2	0	1	0	0	1	2	172
1:00	0	19	0	0	1	0	0	0	0	0	0	0	0	20	13:00	10	137	12	4	5	3	2	4	2	1	0	1	2	183
1:15	0	14	1	0	1	0	0	0	0	0	0	0	0	16	13:15	7	133	15	4	7	7	2	2	0	2	2	0	1	182
1:30	0	14	0	0	1	0	0	0	0	0	0	0	0	15	13:30	6	123	13	4	7	3	5	2	3	2	1	1	3	173
1:45	0	21	0	0	0	0	0	0	0	0	0	0	0	21	13:45	1	90	6	5	8	3	4	2	1	0	0	0	1	121
2:00	1	13	1	0	0	0	0	0	0	0	0	0	0	15	14:00	5	112	21	6	4	8	0	0	6	1	1	0	3	167
2:15	0	16	2	0	0	0	0	0	1	0	0	0	0	19	14:15	5	142	11	2	10	3	2	2	2	0	0	1	4	184
2:30	0	21	2	0	1	0	0	0	0	0	0	0	0	24	14:30	6	90	8	0	2	5	2	0	0	0	0	0	1	114
2:45	0	15	1	0	1	0	0	0	0	0	0	0	0	17	14:45	5	135	20	1	9	2	0	1	0	0	0	0	1	174
3:00	0	32	5	0	0	2	0	0	0	0	0	0	0	39	15:00	5	125	16	0	2	4	4	1	0	2	2	0	4	165
3:15	2	35	4	0	1	0	0	0	0	0	0	0	0	42	15:15	2	135	16	0	7	7	0	2	1	0	1	1	2	174
3:30	0	49	7	0	1	0	0	0	0	0	0	0	0	57	15:30	2	144	14	0	6	7	1	2	1	0	0	0	3	180
3:45	0	53	11	0	1	1	0	0	0	0	0	0	0	66	15:45	0	129	14	3	4	5	1	0	2	0	1	0	0	159
4:00	1	59	12	0	6	1	0	0	0	0	0	0	0	79	16:00	11	168	10	2	3	4	3	0	2	0	0	1	1	205
4:15	0	95	19	0	6	0	0	0	0	0	0	1	0	121	16:15	2	193	9	1	8	1	2	0	0	1	0	1	3	221
4:30	0	103	17	0	4	2	1	0	0	0	0	0	0	127	16:30	4	230	12	1	2	4	2	0	0	1	0	0	0	256
4:45	0	92	21	0	3	0	0	0	0	0	0	1	0	117	16:45	3	167	18	2	3	3	2	3	1	0	1	0	2	205
5:00	0	92	11	0	5	1	1	0	1	1	0	0	0	112	17:00	5	198	14	1	8	9	3	0	0	1	1	0	0	240
5:15	5	102	20	0	2	2	1	0	0	0	0	0	0	132	17:15	3	199	21	1	3	3	1	2	0	1	0	3	1	238
5:30	2	110	29	1	7	2	1	0	0	0	0	0	2	154	17:30	3	208	25	0	2	2	0	0	0	1	0	2	0	243
5:45	3	95	12	0	8	1	1	0	0	0	0	0	0	120	17:45	7	200	7	1	8	2	5	0	0	0	0	1	2	233
6:00	1	85	14	0	2	3	2	0	0	0	0	0	0	107	18:00	6	114	11	3	4	4	3	1	0	2	1	1	4	154
6:15	1	98	14	0	4	1	0	0	0	0	0	0	1	119	18:15	3	143	12	0	3	2	2	2	2	0	0	0	3	172
6:30	0	102	14	1	3	2	1	1	0	0	0	0	0	124	18:30	3	128	21	3	5	3	2	1	1	0	2	0	4	173
6:45	1	118	17	0	7	1	0	0	0	1	1	0	1	147	18:45	7	148	9	1	0	8	0	0	0	0	0	0	2	175
7:00	6	177	21	2	4	1	1	0	1	0	0	0	0	213	19:00	11	128	16	0	3	5	3	0	0	0	0	0	2	168
7:15	10	183	11	0	6	6	0	0	2	0	0	1	2	221	19:15	4	122	17	0	3	1	1	1	2	0	0	1	0	152
7:30	7	194	15	1	7	4	1	0	0	1	0	1	1	232	19:30	5	133	11	0	3	6	0	1	1	0	1	0	0	161
7:45	7	196	17	0	7	6	3	0	0	1	1	0	2	240	19:45	3	118	14	1	1	5	0	0	0	0	0	0	1	143
8:00	7	191	13	1	6	6	1	3	0	1	0	2	0	231	20:00	4	111	9	0	5	7	2	0	0	0	0	0	1	139
8:15	2	164	7	0	7	9	2	0	2	0	0	1	2	196	20:15	2	125	14	0	0	2	0	0	1	0	0	1	0	145
8:30	5	182	22	1	6	5	3	1	1	0	1	0	3	230	20:30	0	107	14	0	2	2	0	0	1	0	0	0	1	127
8:45	6	169	19	0	3	6	0	0	0	0	1	0	0	204	20:45	3	105	7	0	2	1	0	0	0	0	0	0	0	118
9:00	1	96	12	1	6	7	2	0	0	0	1	0	3	129	21:00	4	106	7	1	0	1	0	1	0	0	0	0	0	120
9:15	6	130	12	1	9	4	0	2	0	0	0	0	1	165	21:15	0	97	8	0	3	1	0	0	1	0	1	0	1	112
9:30	12	114	9	0	6	3	2	3	0	3	1	0	2	155	21:30	2	101	9	0	2	5	0	0	2	0	0	1	0	122
9:45	2	133	12	2	5	4	0	1	2	0	1	0	2	164	21:45	0	92	10	0	0	0	0	0	0	0	0	1	0	103
10:00	6	138	13	0	1	1	2	0	1	3	0	0	2	167	22:00	1	84	4	0	1	1	0	0	0	0	0	0	1	92
10:15	5	122	20	0	4	2	0	1	1	0	0	0	2	157	22:15	0	82	5	1	0	1	0	0	0	0	0	0	0	89
10:30	6	135	19	0	4	1	3	1	0	2	0	3	1	175	22:30	0	62	5	0	2	0	0	0	1	0	0	0	0	70
10:45	6	85	10	0	1	4	2	0	2	0	0	2	0	112	22:45	0	79	10	0	0	1	1	0	0	0	0	0	0	91
11:00	8	118	18	0	4	2	0	0	0	1	1	0	0	152	23:00	0	61	3	0	0	1	0	0	0	0	0	0	0	65
11:15	2	158	14	0	7	3	1	0	0	0	1	1	0	187	23:15	0	39	5	0	0	1	0	0	2	0	0	0	0	47
11:30	6	136	17	0	2	3	1	0	0	0	1	1	1	168	23:30	0	49	2	0	1	0	0	0	0	0	0	0	0	52
11:45	9	124	13	2	4	8	2	2	1	0	0	1	1	167	23:45	0	52	2	0	0	0	0	0	1	0	0	0	0	55
TOTAL	138	4,510	538	13	165	104	34	15	15	14	10	15	29	5,600	TOTAL	173	5,976	561	50	176	162	64	32	40	16	19	20	59	7,348

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	924

PM PEAK HOUR	5:00 PM
PM PEAK VOLUME	954

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	311	####	1,099	63	341	266	98	47	55	30	29	35	88	12,948
% OF TOTAL	2.4%	81.0%	8.5%	0.5%	2.6%	2.1%	0.8%	0.4%	0.4%	0.2%	0.2%	0.3%	0.7%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS3 Indian between Ironwood and Hemlock

AM	NORTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
0:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
0:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
0:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
1:15	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
2:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	0	1	0	1	0	0	0	0	0	0	0	0	2
3:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
4:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
4:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
4:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
4:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
5:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
5:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
5:30	0	8	0	0	1	0	0	0	0	0	0	0	0	9
5:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:00	0	13	5	0	1	0	0	0	0	0	0	0	0	19
6:15	0	7	6	0	0	0	0	0	0	0	0	0	0	13
6:30	0	13	4	0	3	0	0	0	0	0	0	0	0	20
6:45	0	25	2	0	4	0	0	0	0	0	0	0	0	31
7:00	0	40	7	0	4	0	0	0	0	0	0	0	0	51
7:15	1	55	6	0	6	0	0	0	0	0	0	0	0	68
7:30	0	61	7	1	5	0	0	0	0	0	0	0	0	74
7:45	0	60	7	0	6	0	0	0	0	0	0	0	0	73
8:00	0	50	6	0	5	0	0	0	0	0	0	0	0	61
8:15	0	25	2	0	4	0	0	0	0	0	0	0	0	31
8:30	0	13	6	0	1	0	0	0	0	0	0	0	0	20
8:45	0	29	10	0	1	0	0	0	0	0	0	0	0	40
9:00	0	27	7	0	2	0	0	0	0	0	0	0	0	36
9:15	1	17	2	0	1	0	0	0	0	0	0	0	0	21
9:30	0	18	3	0	2	0	0	0	0	0	0	0	0	23
9:45	0	21	4	0	2	0	0	0	0	0	0	0	0	27
10:00	0	14	1	0	5	0	0	0	0	0	0	0	0	20
10:15	0	20	2	0	2	0	0	0	0	0	0	0	0	24
10:30	0	17	3	0	0	0	0	0	0	0	0	0	0	20
10:45	0	29	6	0	2	0	0	0	0	0	0	0	0	37
11:00	1	26	3	0	3	0	0	0	0	0	0	0	0	33
11:15	0	35	5	0	0	0	0	0	0	0	0	0	0	40
11:30	0	24	6	0	2	0	0	0	0	0	0	0	0	32
11:45	0	28	6	0	4	0	0	0	0	0	0	0	0	38
TOTAL	3	750	124	1	68	0	0	0	0	0	0	0	0	946

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	276

PM	NORTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	30	7	0	1	0	0	0	0	0	0	0	0	38
12:15	0	28	3	0	3	0	0	0	0	0	0	0	0	34
12:30	0	39	8	0	1	1	0	0	0	0	0	0	0	49
12:45	0	37	6	0	3	0	0	0	0	0	0	0	0	46
13:00	0	34	7	0	2	0	0	0	0	0	0	0	0	43
13:15	0	34	5	0	6	0	0	0	0	0	0	0	0	45
13:30	0	43	9	0	5	0	0	0	0	0	0	0	0	57
13:45	0	56	8	0	2	1	0	0	0	0	0	0	0	67
14:00	1	59	10	0	4	0	0	0	0	0	0	0	0	74
14:15	0	55	7	0	4	0	0	0	0	0	0	0	0	66
14:30	0	63	7	0	5	0	0	0	0	0	0	0	0	75
14:45	0	57	4	0	5	1	0	0	0	0	0	0	0	67
15:00	0	51	4	0	8	0	0	0	0	0	0	0	0	63
15:15	1	52	9	0	7	0	0	0	0	0	0	0	0	69
15:30	1	51	12	0	5	1	0	0	0	0	0	0	0	70
15:45	0	54	11	0	4	0	0	0	0	0	0	0	0	69
16:00	0	51	15	0	0	0	0	0	0	0	0	0	0	66
16:15	1	51	7	0	1	0	0	0	0	0	0	0	0	60
16:30	1	55	7	0	5	0	0	0	0	0	0	0	0	68
16:45	0	60	13	0	6	0	0	0	0	0	0	0	0	79
17:00	1	66	12	0	5	0	0	0	0	0	0	0	0	84
17:15	0	63	10	0	7	0	0	0	0	0	0	0	0	80
17:30	0	63	3	0	7	0	0	0	0	0	0	0	0	73
17:45	0	56	4	0	6	0	0	0	0	0	0	0	0	66
18:00	0	69	13	0	4	0	0	0	0	0	0	0	0	86
18:15	0	63	3	0	1	0	0	0	0	0	0	0	0	67
18:30	0	53	9	0	2	0	0	0	0	0	0	0	0	64
18:45	0	56	8	0	5	0	0	0	0	0	0	0	0	69
19:00	0	55	13	0	5	0	0	0	0	0	0	0	0	73
19:15	0	49	6	0	3	0	0	0	0	0	0	0	0	58
19:30	0	46	7	0	3	0	0	0	0	0	0	0	0	56
19:45	1	52	4	0	6	0	0	0	0	0	0	0	0	63
20:00	0	53	8	0	4	0	0	0	0	0	0	0	0	65
20:15	0	27	7	0	3	0	0	0	0	0	0	0	0	37
20:30	0	40	3	0	3	0	0	0	0	0	0	0	0	46
20:45	0	44	1	0	6	0	0	0	0	0	0	0	0	51
21:00	0	32	3	0	1	0	0	0	0	0	0	0	0	36
21:15	0	21	6	0	4	0	0	0	0	0	0	0	0	31
21:30	0	21	3	0	0	0	0	0	0	0	0	0	0	24
21:45	0	24	1	0	1	0	0	0	0	0	0	0	0	26
22:00	0	23	1	0	3	0	0	0	0	0	0	0	0	27
22:15	0	16	2	0	1	0	0	0	0	0	0	0	0	19
22:30	0	18	2	0	2	0	0	0	0	0	0	0	0	22
22:45	0	16	1	0	0	0	0	0	0	0	0	0	0	17
23:00	0	9	2	0	1	0	0	0	0	0	0	0	0	12
23:15	0	14	0	0	2	0	0	0	0	0	0	0	0	16
23:30	0	12	0	0	1	0	0	0	0	0	0	0	0	13
23:45	0	7	4	0	0	0	0	0	0	0	0	0	0	11
TOTAL	7	2,028	295	0	163	4	0	0	0	0	0	0	0	2,497

PM PEAK HOUR	4:45 PM
PM PEAK VOLUME	316

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	10	2,778	419	1	231	4	0	0	0	0	0	0	0	3,443
% OF TOTAL	0.3%	80.7%	12.2%	0.0%	6.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	17	5,418	779	6	401	8	2	0	0	0	1	0	0	6,632
% OF TOTAL	0.5%	157.4%	22.6%	0.2%	11.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS3 Indian between Ironwood and Hemlock

AM	SOUTHBOUND														PM	SOUTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	12:00	0	38	7	1	2	0	0	0	0	0	0	0	0	48
0:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4	12:15	0	32	4	1	3	0	0	0	0	0	0	0	0	40
0:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5	12:30	0	21	6	0	1	0	0	0	0	0	0	0	0	28
0:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1	12:45	0	38	6	0	5	0	0	0	0	0	0	0	0	49
1:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4	13:00	0	47	6	0	1	0	0	0	0	0	0	0	0	54
1:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3	13:15	0	39	5	1	1	0	0	0	0	0	0	0	0	46
1:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2	13:30	0	25	5	0	4	0	0	0	0	0	0	0	0	34
1:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5	13:45	0	42	5	1	2	1	0	0	0	0	0	0	0	51
2:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1	14:00	1	43	5	0	2	0	0	0	0	0	0	0	0	51
2:15	0	2	0	0	1	0	0	0	0	0	0	0	0	3	14:15	0	76	11	0	6	1	0	0	0	0	0	0	0	94
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14:30	0	49	10	0	3	0	0	0	0	0	0	0	0	62
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14:45	0	49	9	0	5	0	0	0	0	0	0	0	0	63
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1	15:00	0	45	2	0	4	0	0	0	0	0	0	0	0	51
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15:15	0	42	12	0	2	0	0	0	0	0	0	0	0	56
3:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1	15:30	0	47	5	0	2	0	0	0	0	0	0	0	0	54
3:45	0	3	0	0	2	0	0	0	0	0	0	0	0	5	15:45	0	37	2	0	4	0	0	0	0	0	0	0	0	43
4:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7	16:00	0	34	9	0	4	0	1	0	0	0	0	0	0	48
4:15	0	10	0	0	1	0	0	0	0	0	0	0	0	11	16:15	0	43	6	0	0	1	0	0	0	0	0	0	0	50
4:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11	16:30	0	40	3	0	4	0	0	0	0	0	0	0	0	47
4:45	1	7	1	0	0	0	0	0	0	0	0	0	0	9	16:45	0	46	3	0	2	0	0	0	0	0	0	0	0	51
5:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5	17:00	0	50	5	0	4	0	0	0	0	0	0	0	0	59
5:15	0	10	2	0	0	0	0	0	0	0	0	0	0	12	17:15	0	35	1	0	2	0	0	0	0	0	0	0	0	38
5:30	0	16	4	0	0	0	0	0	0	0	0	0	0	20	17:30	0	49	8	0	1	0	0	0	0	0	0	0	0	58
5:45	0	13	1	0	0	0	0	0	0	0	0	0	0	14	17:45	0	45	7	0	5	0	0	0	0	0	0	0	0	57
6:00	1	15	2	0	2	0	0	0	0	0	0	0	0	20	18:00	0	56	5	0	4	0	0	0	0	0	0	0	0	65
6:15	0	14	3	0	0	0	0	0	0	0	0	0	0	17	18:15	0	41	3	0	0	0	0	0	0	0	0	0	0	44
6:30	0	10	3	0	3	0	0	0	0	0	0	0	0	16	18:30	0	31	10	0	3	0	0	0	0	0	0	0	0	44
6:45	0	33	3	0	6	0	0	0	0	0	0	0	0	42	18:45	0	50	4	0	1	0	0	0	0	0	0	0	0	55
7:00	0	27	4	0	5	0	0	0	0	0	0	0	0	36	19:00	0	43	3	0	1	0	0	0	0	0	0	0	0	47
7:15	0	54	8	0	5	0	0	0	0	0	0	0	0	67	19:15	0	30	4	0	3	0	0	0	0	0	0	0	0	37
7:30	1	80	15	0	2	0	0	0	0	0	0	0	0	98	19:30	0	21	5	0	2	0	0	0	0	0	0	0	0	28
7:45	0	99	7	0	6	0	0	0	0	0	0	0	0	112	19:45	0	34	5	0	2	0	0	0	0	0	0	0	0	41
8:00	0	70	12	0	4	0	0	0	0	0	0	0	0	86	20:00	0	32	7	0	3	0	0	0	0	0	0	0	0	42
8:15	0	46	4	0	6	0	0	0	0	0	0	0	0	56	20:15	0	42	3	0	3	0	0	0	0	0	0	0	0	48
8:30	0	29	5	0	6	0	0	0	0	0	0	0	0	40	20:30	0	33	2	0	2	0	0	0	0	0	0	0	0	37
8:45	1	42	10	0	0	0	0	0	0	0	0	0	0	53	20:45	0	25	2	0	2	0	0	0	0	0	0	0	0	29
9:00	0	37	4	0	1	0	0	0	0	0	0	0	0	42	21:00	0	19	2	0	0	0	0	0	0	0	0	0	0	21
9:15	1	31	5	1	1	0	0	0	0	0	1	0	0	40	21:15	0	31	5	0	1	0	0	0	0	0	0	0	0	37
9:30	0	43	10	0	1	0	1	0	0	0	0	0	0	55	21:30	0	17	2	0	1	0	0	0	0	0	0	0	0	20
9:45	0	28	4	0	2	0	0	0	0	0	0	0	0	34	21:45	0	20	2	0	0	0	0	0	0	0	0	0	0	22
10:00	0	37	4	0	1	0	0	0	0	0	0	0	0	42	22:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
10:15	0	27	2	0	3	0	0	0	0	0	0	0	0	32	22:15	0	12	2	0	0	0	0	0	0	0	0	0	0	14
10:30	0	38	5	0	4	0	0	0	0	0	0	0	0	47	22:30	0	13	0	0	0	0	0	0	0	0	0	0	0	13
10:45	0	30	8	0	1	0	0	0	0	0	0	0	0	39	22:45	0	10	1	0	1	0	0	0	0	0	0	0	0	12
11:00	0	28	4	0	3	1	0	0	0	0	0	0	0	36	23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
11:15	0	30	4	0	1	0	0	0	0	0	0	0	0	35	23:15	1	3	0	0	0	0	0	0	0	0	0	0	0	4
11:30	0	36	7	0	4	0	0	0	0	0	0	0	0	47	23:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
11:45	0	38	5	0	1	0	0	0	0	0	0	0	0	44	23:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	5	1,033	149	1	72	1	1	0	0	0	1	0	0	1,263	TOTAL	2	1,607	211	4	98	3	1	0	0	0	0	0	0	1,926

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	363

PM PEAK HOUR	2:15 PM
PM PEAK VOLUME	270

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: AM+PM	7	2,640	360	5	170	4	2	0	0	0	1	0	0	3,189
% OF TOTAL	0.2%	82.8%	11.3%	0.2%	5.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS4 Indian south of Hemlock

AM	NORTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
0:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
0:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
0:45	0	12	0	0	0	0	0	0	0	0	0	0	0	12
1:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
1:15	0	1	0	0	1	0	0	0	0	0	0	0	0	2
1:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
1:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
2:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
2:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
2:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
3:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	5	1	0	1	0	0	0	0	0	0	0	0	7
4:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
4:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
4:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
4:45	0	4	0	0	1	0	0	0	0	0	0	0	0	5
5:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
5:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
5:30	0	5	0	0	1	0	0	0	0	0	0	0	0	6
5:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:00	1	12	5	0	1	0	0	0	0	0	0	0	0	19
6:15	0	8	3	0	0	0	0	0	0	0	0	0	0	11
6:30	0	16	3	0	2	0	0	0	0	0	0	0	0	21
6:45	0	26	3	0	4	0	0	0	0	0	0	0	0	33
7:00	0	37	8	0	2	0	0	0	0	0	0	0	0	47
7:15	0	44	10	0	2	0	0	0	0	0	0	0	0	56
7:30	0	62	7	1	6	0	0	0	0	0	0	0	0	76
7:45	5	55	11	0	6	0	0	0	0	0	0	0	0	77
8:00	0	61	6	0	4	0	0	0	0	0	0	0	0	71
8:15	0	35	3	0	5	1	0	0	0	0	0	0	0	44
8:30	0	25	6	0	1	0	0	0	0	0	0	0	0	32
8:45	0	27	13	0	1	0	0	0	0	0	0	0	0	41
9:00	0	27	7	0	1	0	0	0	0	0	0	0	0	35
9:15	0	19	5	0	2	0	0	0	0	0	0	0	0	26
9:30	0	24	3	0	1	0	0	0	0	0	0	0	0	28
9:45	0	20	5	0	0	0	0	0	0	0	0	0	0	25
10:00	0	26	4	0	4	0	0	0	0	0	0	0	0	34
10:15	0	20	4	0	1	0	0	0	0	0	0	0	0	25
10:30	1	30	2	0	0	0	0	0	0	0	0	0	0	33
10:45	0	29	1	0	2	0	0	0	0	0	0	0	0	32
11:00	3	30	7	0	1	0	0	0	0	0	0	0	0	41
11:15	0	38	6	0	1	1	0	0	0	0	0	0	0	46
11:30	0	29	7	0	2	0	0	0	0	0	0	0	0	38
11:45	0	36	4	0	3	0	0	0	0	0	0	0	0	43
TOTAL	10	848	142	1	56	2	0	0	0	0	0	0	0	1,059

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	280

PM	NORTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	1	44	6	0	2	0	0	0	0	0	0	0	0	53
12:15	0	27	7	0	3	0	0	0	0	0	0	0	0	37
12:30	0	41	5	0	1	0	0	0	0	0	0	0	0	47
12:45	0	37	6	0	2	0	0	0	0	0	0	0	0	45
13:00	0	50	6	0	1	0	0	0	0	0	0	0	0	57
13:15	0	49	7	0	5	0	0	0	0	0	0	0	0	61
13:30	0	44	10	0	4	0	1	0	0	0	0	0	0	59
13:45	0	52	7	0	3	1	0	0	0	0	0	0	0	63
14:00	0	57	13	0	2	0	0	0	0	0	0	0	0	72
14:15	2	64	4	0	5	0	0	0	0	0	0	0	0	75
14:30	0	70	13	0	2	0	0	0	0	0	0	0	0	85
14:45	1	61	2	0	7	0	0	0	0	0	0	0	0	71
15:00	1	76	8	0	7	0	0	0	0	0	0	0	0	92
15:15	0	70	11	0	7	0	0	0	0	0	0	0	0	88
15:30	1	70	15	0	7	1	0	0	0	0	0	0	0	94
15:45	1	70	13	0	5	0	0	0	0	0	0	0	0	89
16:00	0	67	9	0	1	0	0	0	0	0	0	0	0	77
16:15	0	74	4	0	3	0	0	0	0	0	0	0	0	81
16:30	0	68	7	0	6	0	0	0	0	0	0	0	0	81
16:45	0	74	14	0	6	0	0	0	0	0	0	0	0	94
17:00	1	85	14	0	3	0	0	0	0	0	0	0	0	103
17:15	0	87	14	0	5	0	0	0	0	0	0	0	0	106
17:30	0	81	4	0	7	0	0	0	0	0	0	0	0	92
17:45	0	75	5	0	8	0	0	0	0	0	0	0	0	88
18:00	0	98	13	0	4	1	0	0	0	0	0	0	0	116
18:15	0	68	2	0	3	0	0	0	0	0	0	0	0	73
18:30	0	79	6	0	1	0	0	0	0	0	0	0	0	86
18:45	0	63	9	0	7	0	0	0	0	0	0	0	0	79
19:00	0	73	16	0	4	0	0	0	0	0	0	0	0	93
19:15	0	60	7	0	4	0	0	0	0	0	0	0	0	71
19:30	0	56	7	0	1	0	0	0	0	0	0	0	0	64
19:45	1	58	5	0	4	0	0	0	0	0	0	0	0	68
20:00	0	63	9	0	3	0	0	0	0	0	0	0	0	75
20:15	0	45	8	0	4	0	0	0	0	0	0	0	0	57
20:30	0	46	4	0	2	0	0	0	0	0	0	0	0	52
20:45	0	56	4	0	1	0	0	0	0	0	0	0	0	61
21:00	0	42	3	0	0	0	0	0	0	0	0	0	0	45
21:15	0	36	6	0	4	0	0	0	0	0	0	0	0	46
21:30	0	33	4	0	1	0	0	0	0	0	0	0	0	38
21:45	0	27	5	0	1	0	0	0	0	0	0	0	0	33
22:00	0	23	1	0	2	0	0	0	0	0	0	0	0	26
22:15	0	25	2	0	0	0	0	0	0	0	0	0	0	27
22:30	0	19	3	0	2	0	0	0	0	0	0	0	0	24
22:45	0	16	0	0	1	0	0	0	0	0	0	0	0	17
23:00	0	12	1	0	2	0	0	0	0	0	0	0	0	15
23:15	0	18	1	0	1	0	0	0	0	0	0	0	0	20
23:30	0	17	0	0	1	0	0	0	0	0	0	0	0	18
23:45	0	9	1	0	0	0	0	0	0	0	0	0	0	10
TOTAL	9	2,535	321	0	155	3	1	0	0	0	0	0	0	3,024

PM PEAK HOUR	5:15 PM
PM PEAK VOLUME	402

TOTAL: AM+PM	19	3,383	463	1	211	5	1	0	0	0	0	0	0	4,083
% OF TOTAL	0.5%	82.9%	11.3%	0.0%	5.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	31	6,094	997	8	474	29	26	4	1	0	0	3	0	7,667
% OF TOTAL	0.8%	149.3%	24.4%	0.2%	11.6%	0.7%	0.6%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	100.0%

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS4 Indian south of Hemlock

AM	SOUTHBOUND														PM	SOUTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5	12:00	1	37	3	1	7	1	3	0	0	0	0	0	0	53
0:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5	12:15	0	32	7	1	6	2	1	1	0	0	0	0	0	50
0:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7	12:30	0	23	4	0	8	2	0	0	0	0	0	0	0	37
0:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6	12:45	0	23	10	0	3	2	0	0	0	0	0	0	0	38
1:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3	13:00	0	32	6	0	3	1	0	0	0	0	0	0	0	42
1:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5	13:15	0	29	8	0	2	2	2	0	0	0	0	0	0	43
1:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2	13:30	0	24	7	0	7	2	1	0	0	0	0	1	0	42
1:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5	13:45	1	34	3	0	2	1	0	0	0	0	0	0	0	41
2:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1	14:00	0	46	14	0	4	0	1	0	0	0	0	0	0	65
2:15	0	6	0	0	1	0	0	0	0	0	0	0	0	7	14:15	0	53	14	0	6	0	0	0	0	0	0	0	0	73
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14:30	0	64	15	0	6	0	0	0	0	0	0	0	0	85
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14:45	0	47	16	0	6	0	0	0	0	0	0	0	0	69
3:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3	15:00	0	48	7	0	3	0	0	0	0	0	0	0	0	58
3:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1	15:15	0	39	11	1	3	0	0	0	0	0	0	0	0	54
3:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4	15:30	0	58	11	0	4	0	0	0	0	0	0	0	0	73
3:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2	15:45	0	41	6	0	6	0	0	0	0	0	0	0	0	53
4:00	0	5	1	0	1	0	0	0	0	0	0	0	0	7	16:00	0	43	11	0	8	0	1	0	0	0	0	0	0	63
4:15	0	7	1	0	1	0	0	0	0	0	0	0	0	9	16:15	0	47	6	0	2	0	0	0	0	0	0	0	0	55
4:30	0	10	0	0	3	0	0	0	0	0	0	0	0	13	16:30	0	50	4	0	8	0	0	0	0	0	0	0	0	62
4:45	1	10	2	0	2	0	0	0	0	0	0	0	0	15	16:45	0	46	6	1	5	0	0	0	0	0	0	0	0	58
5:00	0	6	2	0	1	0	0	0	0	0	0	0	0	9	17:00	0	61	8	0	6	0	0	0	0	0	0	0	0	75
5:15	0	6	1	0	0	0	0	0	0	0	0	0	0	7	17:15	0	43	9	0	0	0	0	0	0	0	0	0	0	52
5:30	0	14	5	0	1	0	0	0	0	0	0	0	0	20	17:30	0	60	5	0	5	0	0	0	0	0	0	0	0	70
5:45	0	14	3	0	2	0	0	0	0	0	0	0	0	19	17:45	0	59	11	0	7	0	0	0	0	0	0	0	0	77
6:00	1	11	1	0	2	0	0	0	0	0	0	0	0	15	18:00	0	64	11	0	4	0	0	0	0	0	0	0	0	79
6:15	0	15	5	0	0	0	0	0	0	0	0	0	0	20	18:15	0	57	9	0	4	0	0	0	0	0	0	0	0	70
6:30	0	14	4	0	3	0	0	0	0	0	0	0	0	21	18:30	0	37	8	0	2	0	0	0	0	0	0	0	0	47
6:45	0	34	8	0	3	0	0	0	0	0	0	0	0	45	18:45	0	64	2	0	1	0	0	0	0	0	0	0	0	67
7:00	0	31	4	0	10	0	0	0	0	0	0	0	0	45	19:00	0	47	6	0	3	0	0	0	0	0	0	0	0	56
7:15	0	49	10	0	6	0	0	0	0	0	0	0	0	65	19:15	0	35	11	0	4	0	0	0	0	0	0	0	0	50
7:30	0	85	18	0	5	0	0	0	0	0	0	0	0	108	19:30	0	31	7	0	3	0	0	0	0	0	0	0	0	41
7:45	0	88	21	0	9	0	0	0	0	0	0	0	0	118	19:45	0	46	11	0	2	0	0	0	0	0	0	0	0	59
8:00	0	54	10	0	5	0	0	0	0	0	0	0	0	69	20:00	0	43	5	0	2	0	0	0	0	0	0	0	0	50
8:15	1	42	9	1	6	2	0	0	0	0	0	0	0	61	20:15	0	31	7	0	5	0	0	0	0	0	0	0	0	43
8:30	0	26	5	0	4	0	1	0	0	0	0	0	0	36	20:30	0	32	5	0	1	0	0	0	0	0	0	0	0	38
8:45	1	35	13	1	4	2	3	1	0	0	0	0	0	60	20:45	0	29	3	0	2	0	0	0	0	0	0	0	0	34
9:00	0	36	4	0	2	1	0	0	0	0	0	1	0	44	21:00	0	23	4	0	1	0	0	0	0	0	0	0	0	28
9:15	0	28	6	1	2	0	0	0	0	0	0	0	0	37	21:15	0	24	10	0	3	0	0	0	0	0	0	0	0	37
9:30	1	33	8	0	2	0	2	0	0	0	0	0	0	46	21:30	0	18	5	0	4	0	0	0	0	0	0	0	0	27
9:45	0	35	11	0	2	0	0	0	0	0	0	0	0	48	21:45	1	20	5	0	0	0	0	0	0	0	0	0	0	26
10:00	0	31	1	0	5	1	1	2	0	0	0	0	0	41	22:00	0	22	4	0	0	0	0	0	0	0	0	0	0	26
10:15	0	39	6	0	1	1	1	0	0	0	0	0	0	48	22:15	0	18	2	0	1	0	0	0	0	0	0	0	0	21
10:30	0	42	5	0	4	0	0	0	0	0	0	0	0	51	22:30	0	13	2	0	0	0	0	0	0	0	0	0	0	15
10:45	1	25	11	0	3	1	2	0	0	0	0	0	0	43	22:45	0	9	2	0	1	0	0	0	0	0	0	0	0	12
11:00	0	21	7	0	2	0	2	0	0	0	0	1	0	33	23:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
11:15	2	29	7	0	3	2	1	0	0	0	0	0	0	44	23:15	0	7	2	0	0	0	0	0	0	0	0	0	0	9
11:30	1	23	12	0	5	1	2	0	0	0	0	0	0	44	23:30	0	7	1	0	0	0	0	0	0	0	0	0	0	8
11:45	0	33	2	0	3	0	1	0	1	0	0	0	0	40	23:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
TOTAL	9	981	209	3	103	11	16	3	1	0	0	2	0	1,338	TOTAL	3	1,730	325	4	160	13	9	1	0	0	0	1	0	2,246

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	360

PM PEAK HOUR	5:30 PM
PM PEAK VOLUME	296

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	12	2,711	534	7	263	24	25	4	1	0	0	3	0	3,584
% OF TOTAL	0.3%	75.6%	14.9%	0.2%	7.3%	0.7%	0.7%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS5 Ironwood west of Heacock

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	15	1	0	1	0	0	0	0	0	0	0	0	17
0:15	0	10	3	0	0	0	0	0	0	0	0	0	0	13
0:30	0	10	2	0	2	0	0	0	0	0	0	0	0	14
0:45	0	9	2	0	1	0	0	0	0	0	0	0	0	12
1:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
1:15	1	4	1	0	0	0	0	0	0	0	0	0	0	6
1:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
1:45	0	9	0	0	0	0	0	0	0	0	0	0	0	9
2:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
2:15	1	8	1	0	1	0	0	0	1	0	0	0	0	12
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
3:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
3:15	0	3	2	0	0	0	0	0	0	0	0	0	0	5
3:30	0	4	3	0	0	0	0	0	0	0	0	0	0	7
3:45	0	10	0	0	1	0	0	0	0	0	0	0	0	11
4:00	0	9	0	0	1	0	0	0	0	0	0	0	0	10
4:15	0	6	4	0	2	0	0	0	0	0	0	0	0	12
4:30	0	15	0	0	0	0	0	0	0	0	0	0	0	15
4:45	0	15	1	0	2	1	0	0	0	0	0	0	0	19
5:00	0	11	4	0	0	0	0	0	0	0	0	0	0	15
5:15	0	24	6	1	0	0	0	0	0	0	0	0	0	31
5:30	0	22	1	0	3	0	0	0	0	0	0	0	0	26
5:45	0	18	4	0	1	0	0	0	0	0	0	0	0	23
6:00	1	25	2	0	2	0	0	0	0	0	0	0	0	30
6:15	1	30	1	1	1	0	0	0	0	0	0	0	0	34
6:30	1	51	5	0	3	0	0	0	0	0	0	0	0	60
6:45	2	40	6	0	3	0	0	0	0	0	0	0	0	51
7:00	1	69	7	0	3	1	0	0	0	0	0	0	0	81
7:15	1	90	12	1	6	0	0	0	0	0	0	0	0	110
7:30	0	113	16	0	4	0	0	0	0	0	0	0	0	133
7:45	3	96	16	0	3	0	0	1	0	0	0	0	0	119
8:00	0	94	12	0	4	1	1	0	0	1	0	0	0	113
8:15	1	78	9	0	3	1	0	0	0	0	0	1	0	93
8:30	1	76	15	1	6	0	1	0	0	0	1	0	0	101
8:45	8	51	8	1	6	2	0	0	0	0	0	0	0	76
9:00	4	61	13	0	2	0	0	0	0	0	0	0	0	80
9:15	0	44	6	1	6	0	0	0	0	0	0	0	0	57
9:30	1	58	8	1	10	0	0	0	0	0	0	0	0	78
9:45	0	57	11	0	2	1	0	0	1	0	0	0	0	72
10:00	1	54	6	0	5	0	0	0	0	0	0	0	0	66
10:15	0	56	14	0	5	1	0	0	0	0	0	0	0	76
10:30	2	80	13	1	3	2	0	2	0	0	0	0	0	103
10:45	2	59	12	0	5	3	0	0	0	0	0	0	0	81
11:00	2	57	6	0	5	1	1	0	0	0	0	1	1	74
11:15	3	77	9	0	5	0	0	0	0	0	0	0	0	94
11:30	4	62	13	0	3	2	1	2	1	1	0	0	0	89
11:45	2	63	14	2	8	2	1	0	0	0	0	0	1	93
TOTAL	43	1,767	272	10	118	18	5	5	3	2	1	2	2	2,248

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	475

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	3	82	8	0	7	3	0	0	0	0	1	0	0	104
12:15	1	71	8	1	9	2	1	0	0	1	0	0	0	94
12:30	2	75	7	0	5	2	1	0	0	0	0	0	0	92
12:45	3	65	9	1	5	1	2	0	0	0	0	1	0	87
13:00	4	102	16	0	3	6	0	0	0	1	0	2	0	134
13:15	1	106	19	1	11	1	1	0	0	0	0	0	0	140
13:30	2	88	24	0	9	0	1	0	0	0	0	0	0	124
13:45	5	96	19	2	17	2	0	0	0	0	0	0	0	141
14:00	6	77	18	1	4	0	0	0	0	0	0	0	0	106
14:15	0	72	21	0	5	3	1	0	0	0	0	0	0	102
14:30	0	89	17	0	6	2	0	0	0	0	0	0	0	114
14:45	2	68	11	0	13	2	1	0	0	0	0	0	0	97
15:00	4	89	12	1	6	2	0	1	0	0	1	0	0	116
15:15	7	82	14	0	12	0	1	0	0	0	0	1	0	117
15:30	4	87	12	0	7	2	0	2	0	0	0	1	0	115
15:45	1	90	12	1	4	0	1	1	0	0	0	0	0	110
16:00	1	123	17	0	13	1	4	0	0	0	0	0	1	160
16:15	5	133	18	0	4	1	0	0	0	0	0	2	0	163
16:30	3	126	16	0	12	3	1	2	0	0	0	1	0	164
16:45	1	134	18	0	13	2	0	0	0	0	0	0	0	168
17:00	2	123	14	0	17	2	1	0	1	0	0	0	0	160
17:15	1	132	26	1	14	0	1	1	1	0	0	0	0	177
17:30	9	141	20	0	10	2	0	0	0	0	0	1	1	184
17:45	6	134	12	0	10	2	1	0	1	0	0	0	2	168
18:00	6	113	22	0	8	3	0	0	0	0	0	1	1	154
18:15	3	107	10	0	13	7	1	0	1	0	0	0	0	142
18:30	3	77	15	0	9	1	1	1	0	0	0	0	0	107
18:45	5	121	14	0	2	1	1	1	0	0	0	1	1	147
19:00	7	104	7	0	2	2	0	1	0	0	0	0	0	123
19:15	2	75	14	0	4	1	0	0	0	0	0	0	0	96
19:30	2	81	12	0	5	1	0	0	0	0	0	0	0	101
19:45	2	85	9	0	4	1	1	0	0	0	0	0	0	102
20:00	1	69	11	0	5	0	0	0	0	0	0	0	0	86
20:15	1	58	8	0	6	0	1	1	1	0	0	0	0	76
20:30	0	51	13	0	5	1	0	0	0	0	0	0	0	70
20:45	0	64	5	0	4	0	0	0	0	0	0	0	0	73
21:00	3	51	2	0	4	1	0	0	0	0	0	0	0	61
21:15	2	71	6	0	4	0	1	0	0	0	0	1	0	85
21:30	8	38	6	0	3	0	0	0	0	0	0	0	0	55
21:45	1	36	5	0	2	0	0	0	0	0	0	0	0	44
22:00	1	40	7	0	1	0	0	0	0	0	0	0	0	49
22:15	0	43	3	1	4	0	1	0	0	0	0	0	0	52
22:30	3	31	1	0	2	0	0	0	0	0	0	0	0	37
22:45	0	26	6	0	0	0	0	0	0	0	0	0	0	32
23:00	0	38	2	0	1	0	0	0	0	0	0	0	0	41
23:15	0	15	1	0	0	0	0	0	0	0	0	0	0	16
23:30	0	16	3	0	3	0	0	0	0	0	0	0	0	22
23:45	0	9	3	0	0	0	0	0	0	0	0	0	0	12
TOTAL	123	3,804	553	10	307	60	25	11	5	2	2	12	6	4,920

PM PEAK HOUR	5:00 PM
PM PEAK VOLUME	689

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	166	5,571	825	20	425	78	30	16	8	4	3	14	8	7,168
% OF TOTAL	2.3%	77.7%	11.5%	0.3%	5.9%	1.1%	0.4%	0.2%	0.1%	0.1%	0.0%	0.2%	0.1%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	222	11,640	2,111	46	1,152	157	42	26	15	4	4	19	9	15,447
% OF TOTAL	3.1%	162.4%	29.5%	0.6%	16.1%	2.2%	0.6%	0.4%	0.2%	0.1%	0.1%	0.3%	0.1%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS5 Ironwood west of Heacock

AM TIME	WESTBOUND 1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	11	2	0	1	0	0	0	0	0	0	0	0	14
0:15	0	13	1	0	1	0	0	0	0	0	0	0	0	15
0:30	0	5	2	0	1	0	0	0	0	0	0	0	0	8
0:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
1:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
1:15	0	4	3	0	2	0	0	0	0	0	0	0	0	9
1:30	0	5	1	0	1	0	0	0	0	0	0	0	0	7
1:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
2:15	0	7	1	0	1	0	0	0	0	0	0	0	0	9
2:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
3:00	0	2	0	0	2	0	0	0	0	0	0	0	0	4
3:15	0	4	5	0	3	0	0	0	0	0	0	0	0	12
3:30	1	3	0	0	3	0	0	0	0	0	0	0	0	7
3:45	0	13	2	0	1	0	0	0	0	0	0	0	0	16
4:00	0	7	1	0	2	0	0	0	0	0	0	0	0	10
4:15	0	10	2	0	0	0	0	0	0	0	0	0	0	12
4:30	0	15	3	0	2	0	0	0	0	0	0	0	0	20
4:45	0	14	7	0	1	0	0	0	0	0	0	0	0	22
5:00	0	18	5	0	0	1	0	0	0	0	0	0	0	24
5:15	0	20	7	0	0	0	0	0	0	0	0	0	0	27
5:30	0	26	8	0	6	0	0	0	0	0	0	0	0	40
5:45	0	22	9	0	7	1	0	0	0	0	0	0	0	39
6:00	1	37	7	0	6	0	0	0	0	0	0	0	0	51
6:15	1	45	15	0	15	0	0	0	0	0	0	0	0	76
6:30	0	59	14	1	16	0	0	0	0	0	0	0	0	90
6:45	0	83	14	0	17	3	0	0	0	0	0	0	0	117
7:00	0	123	17	0	14	0	0	0	0	0	0	0	0	154
7:15	0	141	29	1	15	2	0	0	0	0	0	0	1	189
7:30	4	135	27	1	20	5	0	0	1	0	0	0	0	193
7:45	2	158	37	1	15	4	1	1	1	0	0	1	0	221
8:00	0	147	31	0	14	4	1	0	0	0	0	0	0	197
8:15	5	128	25	1	12	2	0	0	0	0	0	0	0	173
8:30	0	97	11	0	11	0	0	0	0	0	0	0	0	119
8:45	0	84	18	1	6	0	0	0	0	0	0	0	0	109
9:00	0	63	18	0	7	0	1	0	0	0	0	0	0	89
9:15	1	54	14	0	9	1	0	1	0	0	0	0	0	80
9:30	0	49	10	0	9	1	1	0	0	0	0	0	0	70
9:45	0	55	14	2	6	0	0	0	0	0	0	0	0	77
10:00	0	62	13	0	8	0	0	0	0	0	0	0	0	83
10:15	1	61	19	1	7	0	0	1	0	0	0	1	0	91
10:30	0	58	13	0	11	2	0	0	0	0	0	0	0	84
10:45	1	62	14	1	9	2	0	1	0	0	1	0	0	91
11:00	0	55	12	1	8	0	1	0	0	0	0	1	0	78
11:15	0	58	17	0	7	2	0	0	1	0	0	0	0	85
11:30	0	66	24	0	12	0	0	0	0	0	0	0	0	102
11:45	1	99	25	0	8	0	0	0	0	0	0	0	0	133
TOTAL	18	2,207	503	11	297	30	5	4	3	0	1	3	1	3,083

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	800

PM Time	WESTBOUND 1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	2	62	18	1	14	0	1	0	0	0	0	0	0	98
12:15	0	81	24	0	10	0	0	0	0	0	0	0	0	115
12:30	0	88	22	0	13	2	0	0	0	0	0	0	0	125
12:45	0	85	23	0	11	1	0	0	0	0	0	1	0	121
13:00	0	94	20	1	14	4	1	0	0	0	0	0	0	134
13:15	4	94	20	1	8	1	0	0	0	0	0	0	0	128
13:30	0	91	22	2	15	1	0	1	0	0	0	0	0	132
13:45	2	89	17	0	12	0	0	0	0	0	0	0	0	120
14:00	0	92	24	0	11	3	0	0	0	0	0	0	0	130
14:15	0	102	31	1	15	0	0	0	0	0	0	0	0	149
14:30	0	90	24	0	16	1	0	0	0	0	0	0	0	131
14:45	0	81	19	0	18	1	0	0	0	0	0	0	0	119
15:00	1	98	17	0	13	1	0	0	0	0	0	0	0	130
15:15	2	99	16	0	13	1	0	0	0	0	0	0	0	131
15:30	4	99	16	1	13	3	0	1	0	0	0	0	0	137
15:45	0	86	23	0	8	3	0	0	0	0	0	0	0	120
16:00	1	105	21	0	10	0	0	0	0	0	0	0	0	137
16:15	2	131	18	0	14	1	0	0	0	0	0	0	0	166
16:30	1	111	20	0	10	0	2	0	0	0	0	0	0	144
16:45	1	116	26	1	12	2	0	2	0	0	0	0	0	160
17:00	0	129	17	0	14	4	0	0	0	0	0	0	0	164
17:15	1	105	20	1	16	4	0	0	0	0	0	0	0	147
17:30	0	122	21	0	12	2	1	1	0	0	0	0	0	159
17:45	0	124	25	1	11	1	0	1	0	0	0	0	0	163
18:00	3	92	18	0	9	2	0	0	0	0	0	0	0	124
18:15	3	86	13	0	5	1	0	0	0	0	0	0	0	108
18:30	2	99	19	1	7	3	0	0	0	0	0	0	0	131
18:45	2	94	15	0	10	0	0	0	0	0	0	0	0	121
19:00	0	87	20	0	6	1	0	0	0	0	0	1	0	115
19:15	0	61	22	0	9	1	0	0	0	0	0	0	0	93
19:30	0	57	11	0	6	0	0	0	0	0	0	0	0	74
19:45	4	90	19	1	6	0	0	0	0	0	0	0	0	120
20:00	2	59	16	0	6	0	0	0	0	0	0	0	0	83
20:15	0	62	10	1	6	0	0	0	0	0	0	0	0	79
20:30	1	97	16	0	6	2	0	0	0	0	0	0	0	122
20:45	0	81	12	1	7	0	0	0	0	0	0	0	0	101
21:00	0	79	10	0	2	0	0	0	1	0	0	0	0	92
21:15	0	81	11	0	3	1	1	0	0	0	0	0	0	97
21:30	0	61	20	0	4	0	0	0	1	0	0	0	0	86
21:45	0	66	6	1	11	2	0	0	0	0	0	0	0	86
22:00	0	51	11	0	5	0	0	0	1	0	0	0	0	68
22:15	0	46	6	0	3	0	1	0	0	0	0	0	0	56
22:30	0	33	6	0	3	0	0	0	0	0	0	0	0	42
22:45	0	28	2	0	1	0	0	0	0	0	0	0	0	31
23:00	0	18	7	0	2	0	0	0	0	0	0	0	0	27
23:15	0	23	4	0	5	0	0	0	0	0	0	0	0	32
23:30	0	17	4	0	3	0	0	0	1	0	0	0	0	25
23:45	0	20	1	0	2	0	0	0	0	0	0	0	0	23
TOTAL	38	3,862	783	15	430	49	7	6	4	0	0	2	0	5,196

PM PEAK HOUR	4:15 PM
PM PEAK VOLUME	634

TOTAL: AM+PM	56	6,069	1,286	26	727	79	12	10	7	0	1	5	1	8,279
% OF TOTAL	0.7%	73.3%	15.5%	0.3%	8.8%	1.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS6 Ironwood between Heacock and Davis

AM	EASTBOUND														PM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	23	4	0	1	0	0	0	0	0	0	0	0	28	12:00	0	62	16	0	4	0	0	0	0	0	0	0	0	82
0:15	0	16	4	0	3	0	0	0	0	0	0	0	0	23	12:15	1	60	11	1	8	2	0	0	0	0	0	0	0	83
0:30	0	10	2	0	1	0	0	0	0	0	0	0	0	13	12:30	0	45	16	0	9	0	0	0	0	0	0	0	0	70
0:45	0	14	4	0	0	0	0	0	0	0	0	0	0	18	12:45	2	52	10	0	6	0	0	1	0	0	0	0	0	71
1:00	0	8	4	0	0	0	0	0	0	0	0	0	0	12	13:00	2	71	27	1	9	0	0	0	0	0	0	1	0	111
1:15	0	9	2	0	1	0	0	0	0	0	0	0	0	12	13:15	0	69	28	0	14	0	1	0	0	0	0	0	0	112
1:30	0	4	0	0	1	0	0	0	0	0	0	0	0	5	13:30	2	81	23	0	8	1	0	0	0	0	0	0	0	115
1:45	0	11	2	0	0	0	0	0	0	0	0	0	0	13	13:45	4	71	27	2	7	1	0	0	0	0	0	0	0	112
2:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6	14:00	5	69	20	1	19	1	0	0	0	0	0	0	0	115
2:15	0	6	1	0	1	0	0	0	0	0	0	0	0	8	14:15	0	85	22	0	13	0	1	0	0	1	0	0	0	122
2:30	0	2	2	0	0	0	0	0	0	0	0	0	0	4	14:30	1	74	23	0	11	2	0	2	0	0	0	0	0	113
2:45	0	13	1	0	0	0	0	0	0	0	0	0	0	14	14:45	3	54	15	0	15	1	1	0	0	0	0	0	0	89
3:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3	15:00	0	78	12	0	10	0	0	0	0	0	0	0	0	100
3:15	0	3	1	0	2	0	0	0	0	0	0	0	0	6	15:15	0	67	20	0	10	1	0	0	0	0	0	0	0	98
3:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7	15:30	0	67	15	0	12	0	0	0	0	0	0	0	0	94
3:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8	15:45	1	76	15	0	12	1	0	0	1	0	0	0	0	106
4:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9	16:00	0	94	18	0	16	0	0	0	0	0	0	0	0	128
4:15	0	5	1	0	1	0	0	0	0	0	0	0	0	7	16:15	2	96	26	0	16	2	0	0	0	0	0	0	0	142
4:30	0	9	1	0	1	0	0	0	0	0	0	0	0	11	16:30	1	96	16	1	10	2	0	0	0	0	0	0	0	126
4:45	0	13	4	0	4	0	0	0	0	0	0	0	0	21	16:45	0	89	23	0	24	3	0	0	0	0	0	0	0	139
5:00	0	7	2	0	2	0	0	0	0	0	0	0	0	11	17:00	4	112	21	0	18	2	1	0	0	0	0	0	0	158
5:15	0	9	1	1	1	0	0	0	0	0	0	0	0	12	17:15	1	110	12	0	17	2	0	0	0	0	0	0	0	142
5:30	0	7	3	0	0	0	0	0	0	0	0	0	0	10	17:30	3	127	29	0	17	4	0	0	0	0	0	1	0	181
5:45	0	19	1	0	3	0	0	0	0	0	0	0	0	23	17:45	2	133	26	1	18	1	1	0	0	0	0	0	0	182
6:00	0	18	5	0	1	0	0	0	0	0	0	0	0	24	18:00	2	106	23	1	13	3	0	0	0	0	1	0	0	149
6:15	0	15	2	1	4	0	0	0	0	0	0	0	0	22	18:15	4	101	37	0	13	2	0	0	0	0	0	0	0	157
6:30	0	20	5	0	6	0	0	0	0	0	0	0	0	31	18:30	0	70	18	0	10	2	0	0	0	0	0	0	0	100
6:45	0	26	8	0	3	0	1	0	0	0	0	0	0	38	18:45	2	109	20	1	13	1	0	0	0	0	0	0	0	146
7:00	0	53	11	0	5	2	0	0	0	0	0	0	0	71	19:00	0	87	17	0	11	1	0	0	0	0	0	0	0	116
7:15	0	61	25	0	6	5	0	0	0	0	0	0	0	97	19:15	1	62	21	0	7	1	0	0	0	0	0	0	0	92
7:30	0	95	21	0	3	2	0	0	0	0	0	0	0	121	19:30	2	72	17	0	5	1	0	0	0	0	0	0	0	97
7:45	2	67	22	0	8	0	0	0	0	0	0	0	0	99	19:45	0	73	15	1	6	1	1	0	0	0	0	0	0	97
8:00	2	62	13	0	5	1	0	1	0	0	0	0	0	84	20:00	1	63	16	0	7	2	0	0	0	0	0	0	0	89
8:15	0	47	12	0	4	1	0	0	0	0	0	0	0	64	20:15	0	63	12	0	17	1	0	0	0	0	0	0	0	93
8:30	1	49	17	1	9	0	0	0	0	0	0	0	0	77	20:30	2	49	24	0	9	0	0	0	0	0	0	0	0	84
8:45	0	65	7	0	8	0	0	0	0	0	1	0	0	81	20:45	0	58	16	1	10	0	0	0	0	0	0	0	0	85
9:00	1	41	7	0	4	2	0	0	0	0	0	0	0	55	21:00	0	48	11	0	4	0	0	0	0	0	0	0	0	63
9:15	0	33	10	1	13	0	1	1	0	0	0	0	0	59	21:15	1	64	18	0	2	0	0	0	0	0	0	0	0	85
9:30	0	41	10	1	15	0	0	0	0	0	0	0	0	67	21:30	0	49	11	0	4	0	0	0	1	0	0	0	0	65
9:45	0	31	12	0	8	2	0	0	0	0	0	0	0	53	21:45	2	42	9	0	3	0	0	0	0	0	0	0	0	56
10:00	0	39	5	0	6	0	1	0	0	0	0	0	0	51	22:00	2	29	8	0	3	0	0	0	0	0	0	0	0	42
10:15	0	35	15	0	5	1	0	0	0	0	0	0	0	56	22:15	0	35	10	0	2	0	0	0	0	0	0	0	0	47
10:30	0	50	19	1	8	0	1	1	0	0	0	0	0	80	22:30	0	32	6	0	2	0	0	0	0	0	0	0	0	40
10:45	4	40	21	1	7	0	0	1	0	0	0	0	0	74	22:45	0	20	5	0	1	0	0	0	0	0	0	0	0	26
11:00	0	49	11	0	12	0	0	1	0	0	0	0	0	73	23:00	0	33	8	0	2	1	0	0	0	0	0	0	0	44
11:15	0	62	16	0	9	0	0	0	0	0	0	0	0	87	23:15	0	22	2	0	1	0	0	0	0	0	0	0	0	25
11:30	1	64	24	0	8	0	0	0	0	0	0	0	0	97	23:30	0	20	8	0	1	0	0	0	0	0	0	0	0	29
11:45	3	51	22	1	12	0	0	0	0	0	0	0	0	89	23:45	0	15	1	0	0	0	0	0	0	0	0	0	0	16
TOTAL	14	1,330	363	8	193	16	4	5	0	0	1	0	0	1,934	TOTAL	53	3,260	804	11	449	42	6	3	2	1	1	2	0	4,634

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	401

PM PEAK HOUR	5:30 PM
PM PEAK VOLUME	669

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	67	4,590	1,167	19	642	58	10	8	2	1	2	2	0	6,568
% OF TOTAL	1.0%	69.9%	17.8%	0.3%	9.8%	0.9%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	157	9,626	2,429	40	1,309	131	20	21	9	1	4	3	2	13,752
% OF TOTAL	2.4%	146.6%	37.0%	0.6%	19.9%	2.0%	0.3%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS6 Ironwood between Heacock and Davis

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	7	1	0	1	0	0	0	0	0	0	0	0	9
0:15	0	13	2	0	1	0	0	0	0	0	0	0	0	16
0:30	0	6	0	0	1	0	0	0	0	0	0	0	0	7
0:45	0	3	2	0	0	0	0	0	0	0	0	0	0	5
1:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
1:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:30	0	9	3	0	0	0	0	0	0	0	0	0	0	12
1:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
2:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
2:15	0	4	0	0	1	0	0	0	0	0	0	0	0	5
2:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:45	0	5	1	0	1	0	0	0	0	0	0	0	0	7
3:00	0	12	1	0	3	0	0	0	0	0	0	0	0	16
3:15	0	9	6	0	2	0	0	0	0	0	0	0	0	17
3:30	1	10	2	0	2	0	0	0	0	0	0	0	0	15
3:45	0	16	4	0	3	0	0	0	0	0	0	0	0	23
4:00	1	13	4	0	7	0	0	0	0	0	0	0	0	25
4:15	0	28	5	0	5	0	0	0	0	0	0	0	0	38
4:30	0	23	9	0	5	1	0	0	0	0	0	0	0	38
4:45	0	34	5	0	10	0	0	0	0	0	0	0	0	49
5:00	0	29	9	0	6	0	0	0	0	0	0	0	0	44
5:15	0	40	9	0	6	0	0	0	0	0	0	0	0	55
5:30	2	40	17	0	15	0	0	0	0	0	0	0	0	74
5:45	0	27	13	0	5	1	0	0	0	0	0	0	0	46
6:00	0	38	10	0	11	1	0	0	0	0	0	0	0	60
6:15	4	39	15	0	10	0	0	0	0	0	0	0	0	68
6:30	0	59	20	1	9	0	0	0	0	0	0	0	0	89
6:45	1	73	14	0	16	2	0	0	0	0	0	0	0	106
7:00	0	84	23	1	11	0	0	0	0	0	0	0	0	119
7:15	0	111	23	0	15	4	0	0	0	0	0	0	0	153
7:30	7	105	25	2	14	3	3	1	0	0	0	0	1	161
7:45	3	147	41	2	12	2	1	1	0	0	0	0	0	209
8:00	2	116	29	0	17	1	0	0	0	0	0	0	0	165
8:15	0	82	25	1	11	1	0	0	0	0	0	0	0	120
8:30	1	64	9	0	14	2	0	0	0	0	0	0	0	90
8:45	3	69	18	2	6	1	0	0	0	0	0	0	0	99
9:00	0	58	19	0	9	1	0	1	0	0	1	0	0	89
9:15	0	65	15	0	9	1	0	1	0	0	0	0	0	91
9:30	0	61	11	0	9	0	0	0	0	0	0	0	0	81
9:45	0	38	19	1	5	1	0	0	0	0	0	0	0	64
10:00	0	56	14	0	9	0	0	0	0	0	0	0	0	79
10:15	2	45	16	0	7	0	0	1	0	0	0	0	0	71
10:30	0	52	19	0	8	1	0	0	1	0	0	0	0	81
10:45	0	48	14	1	12	1	0	0	0	0	0	0	0	76
11:00	2	40	7	1	7	1	0	0	0	0	0	0	0	58
11:15	0	44	12	0	5	0	0	0	0	0	0	0	0	61
11:30	1	70	28	0	9	3	0	0	0	0	0	0	0	111
11:45	2	86	26	1	8	1	0	0	0	0	0	0	0	124
TOTAL	32	2,000	550	13	317	29	4	5	1	0	1	0	1	2,953

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	3	46	23	1	11	1	0	0	0	0	0	0	0	85
12:15	0	79	27	0	9	1	0	0	0	0	0	0	0	116
12:30	1	74	13	0	17	1	0	0	0	0	0	0	0	106
12:45	0	73	16	0	15	2	0	0	0	0	0	0	0	106
13:00	0	73	18	0	14	2	0	0	0	0	0	0	0	107
13:15	1	58	16	1	5	2	0	0	0	0	0	0	0	83
13:30	2	66	19	0	6	0	0	1	0	0	0	0	0	94
13:45	0	69	14	0	10	1	0	0	0	0	0	0	0	94
14:00	0	63	19	0	6	1	0	1	0	0	0	0	0	90
14:15	4	72	24	1	9	0	0	0	0	0	0	0	0	110
14:30	2	85	19	0	7	1	1	1	0	0	0	0	1	117
14:45	0	65	18	0	11	2	0	0	0	0	0	0	0	96
15:00	0	70	17	0	8	1	0	0	0	0	0	0	0	96
15:15	1	62	17	0	7	1	0	0	0	0	0	0	0	88
15:30	5	63	19	1	4	4	1	1	0	0	0	0	0	98
15:45	1	73	18	0	10	1	0	0	0	0	0	0	0	103
16:00	3	67	19	0	10	0	0	0	0	0	0	0	0	99
16:15	0	99	13	0	6	0	0	0	0	0	0	0	0	118
16:30	0	73	19	1	7	0	0	0	0	0	0	0	0	100
16:45	5	76	15	0	13	0	0	1	0	0	0	0	0	110
17:00	0	81	27	0	10	0	1	0	0	0	0	0	0	119
17:15	0	65	13	0	8	1	0	0	0	0	0	0	0	87
17:30	3	85	15	0	13	1	1	1	0	0	0	0	0	119
17:45	5	79	19	0	10	0	0	0	0	0	0	0	0	113
18:00	1	88	15	0	5	1	0	0	0	0	0	0	0	110
18:15	0	70	11	0	5	2	1	0	0	0	0	0	0	89
18:30	4	77	10	0	10	1	0	0	0	0	0	0	0	102
18:45	1	75	18	0	6	0	0	1	0	0	0	0	0	101
19:00	1	67	14	0	7	1	0	0	0	0	0	0	0	90
19:15	0	54	21	0	10	1	0	0	0	0	0	0	0	86
19:30	1	54	14	0	3	1	0	0	0	0	0	1	0	74
19:45	0	66	15	1	4	0	0	0	0	0	0	0	0	86
20:00	1	53	11	0	5	1	0	0	0	0	0	0	0	71
20:15	0	59	22	0	12	2	0	1	0	0	0	0	0	96
20:30	0	94	16	0	8	2	0	0	0	0	0	0	0	120
20:45	1	73	12	1	9	1	1	0	0	0	0	0	0	98
21:00	1	76	13	0	3	1	0	0	2	0	0	0	0	96
21:15	2	62	18	0	4	0	0	0	1	0	1	0	0	88
21:30	0	72	20	0	5	3	0	0	1	0	0	0	0	101
21:45	0	57	12	1	9	1	0	0	0	0	0	0	0	80
22:00	5	46	7	0	3	1	0	0	0	0	0	0	0	62
22:15	0	39	5	0	5	0	0	0	0	0	0	0	0	49
22:30	2	27	7	0	1	1	0	0	0	0	0	0	0	38
22:45	2	31	1	0	2	0	0	0	0	0	0	0	0	36
23:00	0	19	3	0	3	0	0	0	0	0	0	0	0	25
23:15	0	22	5	0	1	1	0	0	0	0	0	0	0	29
23:30	0	15	4	0	3	0	0	0	1	0	0	0	0	23
23:45	0	24	1	0	1	0	0	0	1	0	0	0	0	27
TOTAL	58	3,036	712	8	350	44	6	8	6	0	1	1	1	4,231

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	688
PM PEAK HOUR	4:15 PM
PM PEAK VOLUME	447

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	90	5,036	1,262	21	667	73	10	13	7	0	2	1	2	7,184
% OF TOTAL	1.3%	70.1%	17.6%	0.3%	9.3%	1.0%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS7 Ironwood east of Indian

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
0:15	0	16	1	0	0	0	0	0	0	0	0	0	0	17
0:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
0:45	0	10	0	0	0	0	0	0	0	0	0	0	0	10
1:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
1:15	0	8	1	0	0	0	0	0	0	0	0	0	0	9
1:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:45	1	10	0	0	0	0	0	0	0	0	0	0	0	11
2:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
2:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	3	2	0	0	0	0	0	0	0	0	0	0	5
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
4:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
4:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
4:30	0	9	1	0	0	0	0	0	0	0	0	0	0	10
4:45	0	14	4	0	1	0	0	0	0	0	0	0	0	19
5:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
5:15	1	13	2	1	0	0	0	0	0	0	0	0	0	17
5:30	0	12	2	0	0	0	0	0	0	0	0	0	0	14
5:45	1	19	1	0	0	0	0	0	0	0	0	0	0	21
6:00	0	14	2	0	0	0	0	0	0	0	0	0	0	16
6:15	0	18	6	0	2	0	0	0	0	0	0	0	0	26
6:30	0	26	4	1	2	0	0	0	0	0	0	0	0	33
6:45	0	46	6	0	1	0	1	0	0	0	0	0	0	54
7:00	0	67	3	0	6	0	0	0	0	1	0	0	0	77
7:15	3	120	14	2	3	3	0	0	0	0	0	0	0	145
7:30	1	125	5	0	3	1	0	0	1	0	1	0	0	137
7:45	1	105	9	0	3	0	1	0	0	0	0	0	0	119
8:00	0	74	6	0	1	2	0	0	0	0	0	0	0	83
8:15	3	55	5	0	0	1	0	0	1	0	1	0	0	66
8:30	0	56	6	1	3	0	0	0	0	0	0	0	0	66
8:45	0	51	1	0	2	1	0	0	0	0	0	0	0	55
9:00	0	44	6	0	2	2	0	0	0	0	0	0	0	54
9:15	0	48	12	0	4	0	1	1	0	0	0	0	0	66
9:30	1	40	11	1	2	0	0	0	0	0	0	0	0	55
9:45	2	42	6	0	1	0	0	0	0	0	0	1	0	52
10:00	0	36	4	0	4	1	0	0	0	0	0	0	0	45
10:15	0	39	4	0	0	2	0	0	0	0	0	0	0	45
10:30	2	54	5	1	1	0	0	0	0	0	0	0	0	63
10:45	0	66	3	1	2	1	0	0	0	1	1	0	0	75
11:00	1	71	13	0	2	3	0	0	0	0	0	0	0	90
11:15	3	97	15	0	2	1	0	0	0	1	0	0	0	119
11:30	0	97	7	0	3	2	0	0	0	0	0	0	0	109
11:45	1	78	15	1	3	1	0	0	0	0	0	0	0	99
TOTAL	21	1,665	188	9	53	21	3	1	2	3	3	1	0	1,970

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	484

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	2	71	11	1	2	2	0	0	0	0	0	0	0	89
12:15	0	64	6	0	3	1	0	0	1	0	0	0	0	75
12:30	0	55	6	0	3	0	1	0	0	0	0	0	0	65
12:45	0	67	4	0	3	2	0	0	0	0	0	0	0	76
13:00	1	81	9	1	1	1	1	0	0	0	0	0	0	95
13:15	0	83	12	0	7	0	0	0	0	0	0	0	0	102
13:30	4	88	5	0	5	3	0	0	0	0	0	0	0	105
13:45	2	89	8	0	2	0	0	0	1	0	0	0	0	102
14:00	1	81	15	1	3	2	0	0	0	0	0	0	0	103
14:15	2	99	10	0	2	3	0	0	0	0	0	0	0	116
14:30	0	107	9	0	5	1	0	0	0	0	0	0	0	122
14:45	0	67	12	0	2	3	0	0	0	0	0	0	0	84
15:00	0	75	13	0	4	1	0	0	0	0	0	0	0	93
15:15	0	84	5	1	4	1	0	0	0	0	0	0	0	95
15:30	0	83	12	1	1	0	0	1	0	0	0	0	0	98
15:45	2	84	6	0	2	3	1	0	0	0	0	0	1	99
16:00	0	84	16	0	2	0	0	0	0	0	0	1	0	103
16:15	1	113	14	0	1	0	0	0	0	0	0	0	0	129
16:30	2	103	8	1	1	0	0	0	0	0	0	0	0	115
16:45	0	108	19	0	3	2	0	0	0	0	0	0	0	132
17:00	2	118	10	0	7	2	0	0	1	1	0	0	0	141
17:15	0	124	18	0	5	3	0	0	0	0	0	0	0	150
17:30	5	132	11	0	10	4	0	0	0	0	0	0	0	162
17:45	2	133	16	0	4	2	0	0	0	0	0	0	0	157
18:00	3	127	15	0	0	2	0	0	0	0	0	0	0	147
18:15	4	107	14	0	3	4	0	0	0	0	0	0	0	132
18:30	1	97	11	0	2	2	1	0	0	0	1	0	0	115
18:45	0	89	8	1	3	2	0	0	0	0	0	0	1	104
19:00	0	76	9	0	1	2	0	0	0	0	0	1	0	89
19:15	1	77	12	0	1	1	0	0	0	0	0	0	1	93
19:30	2	80	7	0	1	0	0	0	0	0	0	0	0	90
19:45	2	68	10	1	2	2	0	0	0	0	0	0	0	85
20:00	2	66	7	0	4	2	0	0	0	0	0	0	0	81
20:15	0	71	15	0	1	0	0	0	0	0	0	0	0	87
20:30	0	64	8	0	1	0	0	0	0	0	0	0	0	73
20:45	0	61	8	1	1	1	0	0	0	0	0	0	0	72
21:00	0	46	5	0	0	2	0	0	0	0	0	0	0	53
21:15	0	68	5	0	1	0	0	0	0	0	0	0	0	74
21:30	0	59	3	0	1	1	0	0	0	0	0	0	0	64
21:45	0	39	3	0	1	0	0	0	0	0	0	0	0	43
22:00	0	35	2	0	1	0	0	0	0	0	0	0	0	38
22:15	0	36	4	0	0	0	0	0	0	0	0	0	0	40
22:30	0	23	1	0	0	1	0	0	0	0	0	0	0	25
22:45	0	20	0	0	0	0	0	0	0	0	0	0	0	20
23:00	0	25	1	0	1	1	0	0	0	0	0	0	0	28
23:15	0	22	2	0	1	0	0	0	0	0	0	0	0	25
23:30	0	12	1	0	0	0	0	0	0	0	0	0	0	13
23:45	0	12	1	0	0	0	0	0	0	0	0	0	0	13
TOTAL	41	3,573	407	9	108	59	4	1	3	1	1	2	3	4,212

PM PEAK HOUR	5:15 PM
PM PEAK VOLUME	616

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	62	5,238	595	18	161	80	7	2	5	4	4	3	3	6,182
% OF TOTAL	1.0%	84.7%	9.6%	0.3%	2.6%	1.3%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	96	10,700	1,499	36	493	127	23	7	14	6	7	4	4	13,016
% OF TOTAL	1.6%	173.1%	24.2%	0.6%	8.0%	2.1%	0.4%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS7 Ironwood east of Indian

AM TIME	WESTBOUND 1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
0:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7
0:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
0:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
1:15	0	6	1	0	0	0	0	0	0	0	0	0	0	7
1:30	0	9	1	0	0	0	0	0	0	0	0	0	0	10
1:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
2:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
2:15	0	6	0	0	1	0	0	0	0	0	0	0	0	7
2:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
3:15	0	7	3	0	0	0	0	0	0	0	0	0	0	10
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	12	6	0	0	1	0	0	0	0	0	0	0	19
4:00	0	12	4	0	2	0	0	0	0	0	0	0	0	18
4:15	0	9	2	0	0	0	0	0	0	0	0	0	0	11
4:30	0	13	2	0	0	1	0	0	0	0	0	0	0	16
4:45	0	15	4	0	1	0	0	0	0	0	0	0	0	20
5:00	0	22	4	0	0	0	0	0	0	0	0	0	0	26
5:15	0	18	7	0	2	0	0	0	0	0	0	0	0	27
5:30	0	31	15	0	3	1	0	0	0	0	0	0	0	50
5:45	0	18	5	0	2	1	0	0	0	0	0	0	0	26
6:00	0	30	5	0	3	0	0	0	0	0	0	0	0	38
6:15	0	34	8	0	3	0	0	0	0	0	0	0	0	45
6:30	0	51	12	1	3	0	0	0	0	0	0	0	0	67
6:45	0	58	10	0	10	0	0	0	0	0	0	0	0	78
7:00	0	106	15	0	9	0	0	0	0	0	0	0	0	130
7:15	2	118	16	0	6	1	0	1	0	0	0	0	0	144
7:30	1	139	23	2	7	2	1	1	0	1	0	0	1	178
7:45	4	192	31	1	13	4	0	1	0	0	0	1	0	247
8:00	0	115	24	0	9	2	3	0	0	0	0	0	0	153
8:15	0	80	10	1	6	0	0	0	0	0	0	0	0	97
8:30	1	65	12	1	6	1	0	0	0	0	0	0	0	86
8:45	0	85	11	0	4	0	0	0	0	0	0	0	0	100
9:00	2	53	11	0	5	0	0	0	0	0	1	0	0	72
9:15	0	56	7	0	5	0	1	0	0	0	0	0	0	69
9:30	0	54	9	0	2	0	1	0	0	0	0	0	0	66
9:45	2	43	14	0	2	0	0	0	0	0	0	0	0	61
10:00	0	63	9	0	2	0	0	0	0	0	0	0	0	74
10:15	0	51	14	0	2	1	0	0	0	0	0	0	0	68
10:30	0	59	10	0	5	2	0	0	0	0	0	0	0	76
10:45	0	62	16	2	2	0	1	0	0	0	0	0	0	83
11:00	0	39	10	0	3	1	0	0	0	0	0	0	0	53
11:15	0	58	5	0	5	0	1	0	0	0	0	0	0	69
11:30	2	114	24	1	9	1	0	0	0	0	0	0	0	151
11:45	1	99	17	0	2	1	1	0	0	0	0	0	0	121
TOTAL	15	2,065	382	9	134	20	9	3	0	1	1	1	1	2,641

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	722

PM Time	WESTBOUND 1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	77	22	1	4	1	0	0	0	0	0	0	0	105
12:15	0	98	18	0	4	1	0	0	0	0	0	0	0	121
12:30	0	79	10	0	5	1	0	0	0	0	0	0	0	95
12:45	0	63	17	0	5	2	0	0	0	0	0	0	0	87
13:00	1	76	12	0	8	0	0	0	0	0	0	0	0	97
13:15	0	79	7	0	7	0	1	0	0	0	0	0	0	94
13:30	0	67	14	0	5	0	0	1	0	0	0	0	0	87
13:45	0	90	13	0	3	0	0	0	0	0	0	0	0	106
14:00	0	62	17	0	6	5	0	0	0	0	0	0	0	90
14:15	0	87	15	1	5	2	0	0	0	0	0	0	0	110
14:30	2	86	16	0	1	1	0	0	0	0	0	0	0	106
14:45	0	79	8	0	10	0	0	1	0	0	0	0	0	98
15:00	0	72	15	0	3	1	0	0	0	0	0	0	0	91
15:15	0	81	13	0	2	0	0	0	0	0	0	0	0	96
15:30	2	80	12	1	7	3	2	0	0	0	0	0	0	107
15:45	0	76	12	0	5	0	0	0	0	0	1	0	0	94
16:00	0	72	13	0	9	0	1	0	0	0	0	0	0	95
16:15	1	79	16	0	5	0	0	0	0	0	0	0	0	101
16:30	2	65	9	1	4	0	0	0	0	0	0	0	0	81
16:45	0	80	21	0	7	0	0	0	0	0	0	0	0	108
17:00	1	79	10	0	6	0	0	0	0	0	0	0	0	96
17:15	1	74	13	0	2	0	0	0	0	0	0	0	0	90
17:30	0	91	18	0	6	0	1	0	0	0	0	0	0	116
17:45	1	78	17	1	6	3	0	0	0	0	0	0	0	106
18:00	0	84	9	0	8	0	1	0	0	0	0	0	0	102
18:15	0	88	9	0	4	0	0	0	0	0	0	0	0	101
18:30	0	80	11	0	4	0	1	0	0	0	0	0	0	96
18:45	0	61	11	1	5	0	0	0	0	0	0	0	0	78
19:00	0	99	13	0	4	0	0	0	0	0	0	0	0	116
19:15	0	72	17	0	6	0	0	0	0	0	0	0	0	95
19:30	0	71	8	0	2	0	0	0	0	0	1	0	0	82
19:45	0	68	7	1	0	1	0	0	0	0	0	0	0	77
20:00	1	73	8	0	7	0	0	0	0	0	0	0	0	89
20:15	0	82	17	0	3	1	0	0	0	0	0	0	0	103
20:30	0	94	9	0	4	0	0	0	0	1	0	0	0	108
20:45	0	94	9	1	3	0	0	0	0	0	0	0	0	107
21:00	2	91	9	0	3	2	0	0	1	0	0	0	0	108
21:15	0	79	9	0	2	0	0	0	2	0	0	0	0	92
21:30	2	78	11	0	3	0	0	0	2	0	0	0	0	96
21:45	1	69	5	1	4	1	0	0	0	0	0	0	0	81
22:00	1	47	4	0	0	1	0	0	1	0	0	0	0	54
22:15	0	50	5	0	4	1	0	0	0	0	0	0	0	60
22:30	0	35	3	0	1	0	0	0	0	0	0	0	0	39
22:45	0	29	5	0	3	0	0	0	0	0	0	0	0	37
23:00	0	19	2	0	1	0	0	0	0	0	0	0	0	22
23:15	1	26	1	0	0	0	0	0	1	0	0	0	0	29
23:30	0	20	1	0	1	0	0	0	1	0	0	0	0	23
23:45	0	18	1	0	1	0	0	0	1	0	0	0	0	21
TOTAL	19	3,397	522	9	198	27	7	2	9	1	2	0	0	4,193

PM PEAK HOUR	8:15 PM
PM PEAK VOLUME	426

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: AM+PM	34	5,462	904	18	332	47	16	5	9	2	3	1	1	6,834
% OF TOTAL	0.5%	79.9%	13.2%	0.3%	4.9%	0.7%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%

Class 1 2 3 4 5 6 7 8 9 10 11 12 13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS8 Hemlock west of Heacock

AM	EASTBOUND														PM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14	12:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
0:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7	12:15	1	7	1	0	2	0	0	0	0	0	0	0	0	11
0:30	0	11	0	0	0	0	0	0	0	0	0	0	0	11	12:30	7	18	2	0	1	0	0	0	0	0	0	0	0	28
0:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6	12:45	7	11	0	0	1	0	0	0	0	0	0	0	0	19
1:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5	13:00	1	14	2	0	1	0	0	0	0	0	0	0	0	18
1:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	13:15	11	20	0	0	0	0	0	0	0	0	0	0	0	31
1:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4	13:30	16	21	2	0	2	0	0	0	0	0	0	0	0	41
1:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6	13:45	3	12	3	0	1	0	0	0	0	0	0	0	0	19
2:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4	14:00	4	17	2	0	0	0	0	0	0	0	0	0	0	23
2:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	14:15	4	5	3	0	0	0	0	0	0	0	0	0	0	12
2:30	0	6	0	0	1	0	0	0	0	0	0	0	0	7	14:30	5	15	2	0	0	0	0	0	0	0	0	0	0	22
2:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5	14:45	1	11	3	0	0	0	0	0	0	0	0	0	0	15
3:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8	15:00	3	13	1	0	0	0	0	0	0	0	0	0	0	17
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	15:15	2	8	1	0	0	0	0	0	0	0	0	0	0	11
3:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7	15:30	8	17	2	0	1	0	0	0	0	0	0	0	0	28
3:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4	15:45	4	12	3	0	0	0	0	0	0	0	0	0	0	19
4:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5	16:00	0	68	1	0	1	0	0	0	0	0	0	0	0	70
4:15	0	9	2	0	0	0	0	0	0	0	0	0	0	11	16:15	4	68	2	0	1	0	0	0	0	0	0	1	0	76
4:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9	16:30	6	74	4	0	2	0	0	0	0	0	0	0	0	86
4:45	0	10	2	0	1	0	0	0	0	0	0	0	0	13	16:45	5	63	3	0	0	0	0	0	0	0	0	0	0	71
5:00	0	12	4	0	1	0	0	0	0	0	0	0	0	17	17:00	3	64	1	0	1	0	0	0	0	0	0	0	0	69
5:15	0	12	0	0	0	0	0	0	0	0	0	0	0	12	17:15	2	65	2	0	0	1	0	0	0	0	0	0	0	70
5:30	0	19	4	0	0	0	0	0	0	0	0	0	0	23	17:30	3	62	4	0	0	0	0	0	0	0	0	0	0	69
5:45	0	14	1	0	0	0	0	0	0	0	0	0	0	15	17:45	2	52	2	0	0	0	0	0	0	0	0	1	0	57
6:00	0	7	6	0	1	0	0	0	0	0	0	0	0	14	18:00	2	16	4	0	0	0	0	0	0	0	0	0	0	22
6:15	0	15	2	0	1	0	0	0	0	0	0	0	0	18	18:15	2	10	4	0	0	0	0	1	0	0	0	0	0	17
6:30	0	15	3	0	1	0	0	0	0	0	0	0	0	19	18:30	3	15	1	0	0	0	0	0	0	0	0	0	0	19
6:45	0	24	2	0	1	0	0	0	0	0	0	0	0	27	18:45	4	12	4	0	1	0	0	0	0	0	0	0	0	21
7:00	0	35	2	0	1	0	0	0	0	0	0	0	0	38	19:00	1	7	1	0	1	0	0	0	0	0	0	0	0	10
7:15	0	40	4	0	5	0	0	0	0	0	0	0	0	49	19:15	1	10	4	0	0	0	0	0	0	0	0	0	0	15
7:30	0	64	3	0	0	1	0	0	0	0	0	0	0	68	19:30	4	12	2	0	1	0	0	0	0	0	0	0	0	19
7:45	0	50	5	0	0	0	0	0	0	0	0	0	0	55	19:45	1	10	1	0	0	1	0	0	0	0	0	0	0	13
8:00	0	37	3	0	1	0	0	0	0	0	0	0	0	41	20:00	2	7	1	0	0	0	0	0	0	0	0	0	0	10
8:15	0	41	6	0	1	0	0	0	0	0	0	0	0	48	20:15	2	14	0	0	0	0	0	0	0	0	0	0	0	16
8:30	0	43	7	0	0	1	0	0	0	0	0	0	0	51	20:30	2	15	2	0	0	0	0	0	0	0	0	0	0	19
8:45	0	44	3	0	2	0	0	0	0	0	0	0	0	49	20:45	1	8	2	0	0	0	0	0	0	0	0	0	0	11
9:00	0	29	5	0	2	1	0	0	0	0	0	0	0	37	21:00	5	13	0	0	0	0	0	0	0	0	0	0	0	18
9:15	0	30	3	0	2	0	0	0	0	0	0	0	0	35	21:15	3	8	1	0	1	0	0	0	0	0	0	0	0	13
9:30	0	31	6	0	1	0	0	0	0	0	0	0	0	38	21:30	4	16	0	0	0	0	0	0	0	0	0	0	0	20
9:45	0	41	1	0	2	0	0	0	0	0	0	0	0	44	21:45	2	7	1	0	0	0	0	0	0	0	0	0	0	10
10:00	0	31	6	0	0	0	0	0	0	0	0	0	0	37	22:00	2	4	0	1	0	0	0	0	0	0	0	0	0	7
10:15	0	26	7	0	1	0	0	0	0	0	0	0	0	34	22:15	1	9	1	0	0	0	0	0	0	0	0	0	0	11
10:30	0	37	3	1	0	0	0	0	0	0	0	0	0	41	22:30	1	2	2	0	0	0	0	0	0	0	0	0	0	5
10:45	0	30	7	0	2	0	0	0	0	0	0	0	0	39	22:45	3	12	0	0	0	0	0	0	0	0	0	0	0	15
11:00	3	19	2	0	0	0	0	0	0	0	0	0	0	24	23:00	1	3	0	0	0	0	0	0	0	0	0	0	0	4
11:15	6	24	2	0	2	0	0	0	0	0	0	0	0	34	23:15	1	11	2	0	0	0	0	0	0	0	0	0	0	14
11:30	3	12	3	0	0	0	0	0	0	0	0	0	0	18	23:30	0	7	1	0	0	0	0	0	0	0	0	0	0	8
11:45	2	5	0	0	1	0	0	0	0	0	0	0	0	8	23:45	1	5	1	0	0	0	0	0	0	0	0	0	0	7
TOTAL	14	910	107	1	30	3	0	0	0	0	0	0	0	1,065	TOTAL	151	959	83	1	18	2	0	1	0	0	0	2	0	1,217

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	213

PM PEAK HOUR	4:00 PM
PM PEAK VOLUME	303

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	165	1,869	190	2	48	5	0	1	0	0	0	2	0	2,282
% OF TOTAL	7.2%	81.9%	8.3%	0.1%	2.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	193	4,645	449	4	103	29	12	1	2	0	0	2	1	5,441
% OF TOTAL	8.5%	203.5%	19.7%	0.2%	4.5%	1.3%	0.5%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS8 Hemlock west of Heacock

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
0:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
0:30	0	10	0	0	1	0	0	0	0	0	0	0	0	11
0:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00	0	3	0	0	0	1	0	0	0	0	0	0	0	4
1:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
1:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8
2:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
4:00	0	6	1	0	2	0	0	0	0	0	0	0	0	9
4:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
4:45	0	8	0	0	2	0	0	0	0	0	0	0	0	10
5:00	0	18	1	0	1	0	0	0	0	0	0	0	0	20
5:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
5:30	0	8	2	0	0	0	0	0	0	0	0	0	0	10
5:45	0	8	1	0	0	0	0	0	0	0	0	0	0	9
6:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
6:15	0	14	3	0	2	0	0	0	0	0	0	0	0	19
6:30	0	6	3	0	2	0	0	0	1	0	0	0	0	12
6:45	0	24	1	0	2	0	0	0	0	0	0	0	0	27
7:00	0	29	3	0	1	0	1	0	0	0	0	0	0	34
7:15	0	33	3	0	1	0	0	0	0	0	0	0	1	38
7:30	1	38	6	0	1	1	0	0	0	0	0	0	0	47
7:45	0	53	7	0	0	0	0	0	0	0	0	0	0	60
8:00	1	45	6	0	1	0	0	0	0	0	0	0	0	53
8:15	0	41	4	0	0	0	1	0	0	0	0	0	0	46
8:30	1	32	1	0	0	2	0	0	0	0	0	0	0	36
8:45	0	30	6	0	1	0	0	0	0	0	0	0	0	37
9:00	0	33	1	0	1	1	0	0	0	0	0	0	0	36
9:15	0	29	6	0	2	0	0	0	0	0	0	0	0	37
9:30	0	26	10	0	0	0	0	0	0	0	0	0	0	36
9:45	0	34	4	0	0	2	0	0	0	0	0	0	0	40
10:00	0	30	0	0	2	0	0	0	0	0	0	0	0	32
10:15	1	29	4	0	0	1	0	0	0	0	0	0	0	35
10:30	0	31	6	0	0	0	0	0	0	0	0	0	0	37
10:45	0	34	4	0	2	0	0	0	0	0	0	0	0	40
11:00	0	34	5	0	2	1	0	0	0	0	0	0	0	42
11:15	0	40	0	0	0	0	0	0	0	0	0	0	0	40
11:30	0	34	1	0	0	0	2	0	0	0	0	0	0	37
11:45	1	40	3	0	0	0	1	0	1	0	0	0	0	46
TOTAL	5	885	96	0	26	9	5	0	2	0	0	0	1	1,029

AM PEAK HOUR	7:30 AM
AM PEAK VOLUME	206

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	28	4	0	1	1	0	0	0	0	0	0	0	34
12:15	0	46	3	0	2	0	0	0	0	0	0	0	0	51
12:30	1	53	3	0	3	1	2	0	0	0	0	0	0	63
12:45	1	40	7	0	2	0	1	0	0	0	0	0	0	51
13:00	1	43	6	1	0	1	0	0	0	0	0	0	0	52
13:15	0	39	5	0	1	0	0	0	0	0	0	0	0	45
13:30	1	39	2	0	0	0	0	0	0	0	0	0	0	42
13:45	0	36	5	0	2	0	0	0	0	0	0	0	0	43
14:00	0	35	2	0	0	1	0	0	0	0	0	0	0	38
14:15	1	42	5	0	0	0	0	0	0	0	0	0	0	48
14:30	1	37	2	0	1	0	0	0	0	0	0	0	0	41
14:45	0	49	7	0	0	1	0	0	0	0	0	0	0	57
15:00	0	53	5	0	0	0	0	0	0	0	0	0	0	58
15:15	1	50	2	0	0	0	0	0	0	0	0	0	0	53
15:30	0	52	7	0	2	1	1	0	0	0	0	0	0	63
15:45	1	48	3	0	0	0	0	0	0	0	0	0	0	52
16:00	1	44	2	0	0	0	0	0	0	0	0	0	0	47
16:15	1	50	3	0	1	0	0	0	0	0	0	0	0	55
16:30	1	61	4	0	0	1	0	0	0	0	0	0	0	67
16:45	0	51	4	0	1	1	0	0	0	0	0	0	0	57
17:00	0	52	4	0	1	0	0	0	0	0	0	0	0	57
17:15	2	42	6	0	0	1	0	0	0	0	0	0	0	51
17:30	0	49	5	0	0	0	0	0	0	0	0	0	0	54
17:45	1	47	3	0	1	0	0	0	0	0	0	0	0	52
18:00	0	45	1	0	1	0	1	0	0	0	0	0	0	48
18:15	3	52	2	1	0	1	0	0	0	0	0	0	0	59
18:30	0	40	1	0	0	0	0	0	0	0	0	0	0	41
18:45	1	40	5	0	1	0	0	0	0	0	0	0	0	47
19:00	1	47	7	0	0	2	1	0	0	0	0	0	0	58
19:15	0	44	3	0	3	0	0	0	0	0	0	0	0	50
19:30	1	38	6	0	0	0	0	0	0	0	0	0	0	45
19:45	0	41	2	0	1	0	0	0	0	0	0	0	0	44
20:00	0	42	4	0	0	0	0	0	0	0	0	0	0	46
20:15	1	50	5	0	1	0	0	0	0	0	0	0	0	57
20:30	0	41	6	0	0	0	0	0	0	0	0	0	0	47
20:45	0	42	5	0	2	1	0	0	0	0	0	0	0	50
21:00	0	25	0	0	0	0	0	0	0	0	0	0	0	25
21:15	1	42	1	0	0	0	0	0	0	0	0	0	0	44
21:30	0	41	2	0	0	0	0	0	0	0	0	0	0	43
21:45	0	28	3	0	0	0	0	0	0	0	0	0	0	31
22:00	0	20	1	0	0	0	0	0	0	0	0	0	0	21
22:15	0	35	4	0	0	0	0	0	0	0	0	0	0	39
22:30	0	19	0	0	0	1	0	0	0	0	0	0	0	20
22:45	0	25	1	0	0	1	0	0	0	0	0	0	0	27
23:00	0	14	2	0	0	0	1	0	0	0	0	0	0	17
23:15	0	10	1	0	1	0	0	0	0	0	0	0	0	12
23:30	1	14	2	0	1	0	0	0	0	0	0	0	0	18
23:45	0	10	0	0	0	0	0	0	0	0	0	0	0	10
TOTAL	23	1,891	163	2	29	15	7	0	0	0	0	0	0	2,130

PM PEAK HOUR	4:15 PM
PM PEAK VOLUME	236

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: AM+PM	28	2,776	259	2	55	24	12	0	2	0	0	0	1	3,159
% OF TOTAL	0.9%	87.9%	8.2%	0.1%	1.7%	0.8%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS9 Hemlock between Heacock and Davis

AM	EASTBOUND														PM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	6	0	0	1	0	0	0	0	0	0	0	0	7	12:00	1	49	4	0	2	0	0	1	0	0	0	0	0	57
0:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7	12:15	0	40	2	0	3	0	0	0	0	0	0	0	0	45
0:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1	12:30	0	32	7	0	2	0	0	0	0	0	0	0	0	41
0:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10	12:45	0	47	5	0	0	0	0	0	0	0	0	0	0	52
1:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5	13:00	0	43	7	1	4	0	0	0	0	0	0	0	0	55
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13:15	0	40	6	1	2	0	0	0	0	0	0	0	0	49
1:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4	13:30	0	52	7	0	4	0	0	0	0	0	0	0	0	63
1:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5	13:45	0	37	5	0	1	0	0	0	1	0	0	0	0	44
2:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3	14:00	0	38	8	1	2	0	0	0	0	0	0	0	0	49
2:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6	14:15	1	32	5	0	2	0	0	0	0	0	0	0	0	40
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14:30	0	39	5	0	2	0	0	1	0	0	0	0	0	47
2:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5	14:45	0	43	3	0	0	0	0	0	0	0	0	0	0	46
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	15:00	0	36	4	0	1	0	0	0	0	0	0	0	0	41
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	15:15	1	28	5	1	0	0	0	0	0	0	0	0	0	35
3:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5	15:30	0	46	5	0	3	0	0	0	0	0	0	0	0	54
3:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6	15:45	0	36	3	0	1	0	0	0	0	0	0	0	0	40
4:00	0	6	1	0	1	0	0	0	0	0	0	0	0	8	16:00	0	49	8	0	2	0	0	0	0	0	0	0	0	59
4:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2	16:15	1	47	6	0	4	0	0	0	0	0	0	0	0	58
4:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2	16:30	1	48	5	1	3	0	0	0	1	0	0	0	0	59
4:45	0	3	0	0	6	0	0	0	0	0	0	0	0	9	16:45	0	52	6	0	3	0	0	0	0	0	0	0	0	61
5:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5	17:00	0	58	6	1	1	0	0	0	0	0	0	0	0	66
5:15	0	6	0	0	0	1	0	0	0	0	0	0	0	7	17:15	0	30	5	0	1	0	0	0	1	0	0	0	0	37
5:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3	17:30	0	51	5	1	2	0	0	0	0	0	0	0	0	59
5:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5	17:45	0	53	9	0	1	0	0	0	0	0	0	0	0	63
6:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6	18:00	2	55	4	0	0	0	0	1	1	0	0	0	0	63
6:15	0	5	1	1	0	0	0	0	0	0	0	0	0	7	18:15	0	51	7	0	1	0	0	0	0	0	0	0	0	59
6:30	0	8	3	0	0	0	0	0	0	0	0	0	0	11	18:30	0	59	6	1	1	0	0	0	0	0	0	0	0	67
6:45	0	12	0	0	1	0	0	0	0	0	0	0	0	13	18:45	0	55	5	0	0	0	0	0	2	0	0	0	0	62
7:00	0	14	0	0	4	1	0	0	0	0	0	0	0	19	19:00	0	54	3	0	1	0	0	0	0	0	0	0	0	58
7:15	1	11	0	1	2	0	0	0	0	0	0	0	0	15	19:15	0	28	6	0	1	0	0	0	0	0	0	0	0	35
7:30	0	38	1	0	0	0	0	0	0	0	0	0	0	39	19:30	0	42	4	1	1	0	0	0	0	0	0	0	0	48
7:45	0	39	3	0	1	0	0	0	0	0	0	0	0	43	19:45	0	31	2	0	1	0	0	0	0	0	0	0	0	34
8:00	0	21	3	0	0	0	0	0	1	0	0	0	0	25	20:00	0	31	3	0	1	0	0	0	0	0	0	0	0	35
8:15	0	21	6	0	2	0	0	0	0	0	0	0	0	29	20:15	0	28	1	0	0	0	0	0	0	0	0	0	0	29
8:30	0	23	3	1	1	0	0	0	0	0	0	0	0	28	20:30	0	29	3	1	2	0	0	0	0	0	0	0	0	35
8:45	0	32	3	0	1	0	0	0	0	0	0	0	0	36	20:45	0	38	6	0	1	0	0	0	0	0	0	0	0	45
9:00	0	31	3	1	0	1	0	0	0	0	0	0	0	36	21:00	0	25	2	0	2	0	0	0	0	0	0	0	0	29
9:15	0	22	4	0	2	0	0	0	1	0	0	0	0	29	21:15	0	28	3	0	1	0	0	0	0	0	0	0	0	32
9:30	0	35	7	1	0	0	0	0	0	0	0	0	0	43	21:30	0	22	5	1	0	0	0	0	0	0	0	0	0	28
9:45	0	41	1	0	1	0	0	0	0	0	0	0	0	43	21:45	0	25	2	0	0	0	0	0	0	0	0	0	0	27
10:00	0	34	6	0	2	0	0	0	1	0	0	0	0	43	22:00	0	21	0	0	0	0	0	0	1	0	0	0	0	22
10:15	0	38	6	0	0	0	0	0	0	0	0	0	0	44	22:15	0	23	3	0	1	0	0	0	0	0	0	0	0	27
10:30	0	28	5	0	1	1	0	0	0	0	0	0	0	35	22:30	0	29	2	0	0	0	0	0	0	0	0	0	0	31
10:45	0	34	7	1	3	0	0	0	0	0	0	0	0	45	22:45	0	25	1	0	0	0	0	0	0	0	0	0	0	26
11:00	0	41	4	0	3	1	0	0	0	0	0	0	0	49	23:00	0	18	0	0	0	0	0	0	0	0	0	0	0	18
11:15	0	52	8	0	3	0	0	1	0	0	0	0	0	64	23:15	0	14	3	0	2	0	0	0	0	0	0	0	0	19
11:30	0	29	11	0	1	0	0	0	0	0	0	0	0	41	23:30	1	23	2	0	0	0	0	0	0	0	0	0	0	26
11:45	0	49	7	1	2	0	0	0	0	0	0	0	0	59	23:45	0	15	5	0	1	0	0	0	0	0	0	0	0	21
TOTAL	1	757	98	7	40	5	0	1	3	0	0	0	0	912	TOTAL	8	1,795	209	11	63	0	0	3	7	0	0	0	0	2,096

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	213

PM PEAK HOUR	5:45 PM
PM PEAK VOLUME	252

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	9	2,552	307	18	103	5	0	4	10	0	0	0	0	3,008
% OF TOTAL	0.3%	84.8%	10.2%	0.6%	3.4%	0.2%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	12	4,963	620	23	183	8	1	6	16	0	0	0	0	5,832
% OF TOTAL	0.4%	165.0%	20.6%	0.8%	6.1%	0.3%	0.0%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS9 Hemlock between Heacock and Davis

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
0:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
1:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
2:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:15	0	6	1	0	2	0	0	0	0	0	0	0	0	9
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
4:00	0	8	2	0	1	0	0	0	0	0	0	0	0	11
4:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
4:30	0	12	4	0	0	0	0	0	0	0	0	0	0	16
4:45	0	5	0	0	1	0	0	0	0	0	0	0	0	6
5:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
5:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
5:30	0	17	4	0	0	0	0	0	0	0	0	0	0	21
5:45	0	6	0	0	6	1	0	0	0	0	0	0	0	13
6:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
6:15	0	12	2	0	1	0	0	0	0	0	0	0	0	15
6:30	0	7	2	0	0	0	0	0	0	0	0	0	0	9
6:45	0	16	1	0	2	0	0	0	0	0	0	0	0	19
7:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
7:15	0	21	1	0	0	0	0	0	0	0	0	0	0	22
7:30	0	27	6	0	0	0	0	0	0	0	0	0	0	33
7:45	0	30	6	0	1	1	0	0	0	0	0	0	0	38
8:00	0	28	2	0	0	0	0	0	0	0	0	0	0	30
8:15	0	39	6	0	0	0	0	0	0	0	0	0	0	45
8:30	0	22	5	0	1	0	0	0	0	0	0	0	0	28
8:45	0	19	10	0	2	0	0	0	0	0	0	0	0	31
9:00	0	17	0	0	1	0	0	0	0	0	0	0	0	18
9:15	0	27	3	0	1	0	0	0	0	0	0	0	0	31
9:30	0	38	7	0	2	0	0	0	0	0	0	0	0	47
9:45	0	24	4	0	1	0	0	0	0	0	0	0	0	29
10:00	1	31	4	0	3	0	0	0	0	0	0	0	0	39
10:15	0	23	6	0	0	0	0	0	1	0	0	0	0	30
10:30	0	36	8	0	0	1	0	0	0	0	0	0	0	45
10:45	0	28	6	0	2	0	0	0	0	0	0	0	0	36
11:00	0	33	9	0	2	0	0	0	0	0	0	0	0	44
11:15	0	41	3	0	3	0	0	0	0	0	0	0	0	47
11:30	0	40	8	0	0	0	1	0	0	0	0	0	0	49
11:45	0	45	5	0	0	0	0	0	0	0	0	0	0	50
TOTAL	1	751	125	0	32	3	1	0	1	0	0	0	0	914

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	190

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	41	6	0	2	0	0	0	0	0	0	0	0	49
12:15	0	35	5	0	4	0	0	0	0	0	0	0	0	44
12:30	1	53	5	0	3	0	0	1	0	0	0	0	0	63
12:45	0	43	8	0	3	0	0	0	0	0	0	0	0	54
13:00	0	44	3	1	0	0	0	0	0	0	0	0	0	48
13:15	0	42	3	0	5	0	0	0	0	0	0	0	0	50
13:30	0	39	5	0	0	0	0	0	0	0	0	0	0	44
13:45	0	36	4	0	0	0	0	0	0	0	0	0	0	40
14:00	0	33	5	0	0	0	0	0	1	0	0	0	0	39
14:15	0	45	1	1	3	0	0	0	0	0	0	0	0	50
14:30	0	24	4	0	0	0	0	0	0	0	0	0	0	28
14:45	0	28	7	0	1	0	0	0	0	0	0	0	0	36
15:00	0	46	8	0	1	0	0	0	0	0	0	0	0	55
15:15	0	40	3	0	0	0	0	0	0	0	0	0	0	43
15:30	0	41	10	1	4	0	0	0	0	0	0	0	0	56
15:45	0	23	4	1	1	0	0	0	0	0	0	0	0	29
16:00	0	32	3	0	2	0	0	0	0	0	0	0	0	37
16:15	0	36	3	0	1	0	0	0	0	0	0	0	0	40
16:30	0	37	4	0	2	0	0	0	0	0	0	0	0	43
16:45	0	39	8	0	1	0	0	0	1	0	0	0	0	49
17:00	0	38	6	1	2	0	0	0	0	0	0	0	0	47
17:15	0	33	4	0	1	0	0	0	0	0	0	0	0	38
17:30	0	28	5	0	0	0	0	0	0	0	0	0	0	33
17:45	0	46	4	0	1	0	0	0	0	0	0	0	0	51
18:00	0	42	7	0	1	0	0	0	1	0	0	0	0	51
18:15	1	35	3	0	1	0	0	0	0	0	0	0	0	40
18:30	0	27	5	0	1	0	0	0	0	0	0	0	0	33
18:45	0	33	4	0	1	0	0	0	0	0	0	0	0	38
19:00	0	42	3	0	2	0	0	0	0	0	0	0	0	47
19:15	0	28	2	0	1	0	0	0	1	0	0	0	0	32
19:30	0	34	4	0	0	0	0	0	0	0	0	0	0	38
19:45	0	40	3	0	0	0	0	0	0	0	0	0	0	43
20:00	0	32	2	0	0	0	0	0	1	0	0	0	0	35
20:15	0	52	4	0	0	0	0	0	0	0	0	0	0	56
20:30	0	34	4	0	2	0	0	0	0	0	0	0	0	40
20:45	0	30	4	0	1	0	0	0	0	0	0	0	0	35
21:00	0	32	1	0	0	0	0	0	0	0	0	0	0	33
21:15	0	42	1	0	0	0	0	0	0	0	0	0	0	43
21:30	0	44	8	0	1	0	0	0	0	0	0	0	0	53
21:45	0	35	1	0	0	0	0	0	0	0	0	0	0	36
22:00	0	27	1	0	0	0	0	0	0	0	0	0	0	28
22:15	0	28	4	0	0	0	0	0	0	0	0	0	0	32
22:30	0	31	3	0	0	0	0	0	0	0	0	0	0	34
22:45	0	25	1	0	0	0	0	0	0	0	0	0	0	26
23:00	0	24	1	0	0	0	0	0	0	0	0	0	0	25
23:15	0	15	1	0	0	0	0	1	0	0	0	0	0	17
23:30	0	11	1	0	0	0	0	0	0	0	0	0	0	12
23:45	0	15	2	0	0	0	0	0	0	0	0	0	0	17
TOTAL	2	1,660	188	5	48	0	0	2	5	0	0	0	0	1,910

PM PEAK HOUR	12:30 PM
PM PEAK VOLUME	215

TOTAL: AM+PM	3	2,411	313	5	80	3	1	2	6	0	0	0	0	2,824
% OF TOTAL	0.1%	85.4%	11.1%	0.2%	2.8%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS10 Hemlock east of Indian

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	8	2	0	1	0	0	0	0	0	0	0	0	11
0:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
0:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
1:00	0	6	0	0	1	0	0	0	0	0	0	0	0	7
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
2:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
4:00	0	3	1	0	0	1	0	0	0	0	0	0	0	5
4:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
4:45	0	3	0	0	1	0	0	0	0	0	0	0	0	4
5:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
5:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
5:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
5:45	0	8	0	0	0	0	0	0	0	0	0	0	0	8
6:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
6:15	0	4	2	1	0	0	0	0	0	0	0	0	0	7
6:30	0	11	1	0	0	0	0	0	0	0	0	0	0	12
6:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
7:00	0	18	2	0	4	1	0	0	0	0	0	0	0	25
7:15	1	25	1	1	2	0	0	0	0	0	0	0	0	30
7:30	1	37	1	0	1	0	0	0	0	0	0	0	0	40
7:45	1	41	5	0	1	0	0	0	0	0	0	0	0	48
8:00	0	34	0	0	1	0	0	0	0	0	0	0	0	35
8:15	0	24	2	0	2	0	0	0	0	0	0	0	0	28
8:30	0	20	6	1	0	0	0	0	0	0	0	0	0	27
8:45	0	24	4	0	0	0	0	0	0	0	0	0	0	28
9:00	0	19	5	1	0	0	0	0	0	0	0	0	0	25
9:15	0	14	3	0	1	0	0	0	0	0	0	0	0	18
9:30	0	26	3	1	4	0	0	0	0	0	0	0	0	34
9:45	0	26	4	0	1	0	0	0	0	0	0	0	0	31
10:00	0	28	3	0	4	0	0	0	0	0	0	0	0	35
10:15	0	19	5	0	1	0	0	0	0	0	0	0	0	25
10:30	0	29	0	0	0	0	0	0	0	0	0	0	0	29
10:45	0	21	4	1	1	0	0	0	0	0	0	0	0	27
11:00	0	43	1	0	2	0	0	0	0	0	0	0	0	46
11:15	0	34	3	0	2	0	0	1	0	0	0	0	0	40
11:30	0	30	1	0	2	1	1	0	0	0	0	0	0	35
11:45	0	39	6	0	3	0	0	0	1	0	0	0	0	49
TOTAL	3	658	71	6	35	3	1	1	1	0	0	0	0	779

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	170

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	38	4	1	1	0	0	0	0	0	0	0	0	44
12:15	0	25	3	0	3	0	0	0	0	0	0	0	0	31
12:30	0	26	2	0	1	0	0	0	0	0	0	0	0	29
12:45	0	32	3	0	1	0	0	0	0	0	0	0	0	36
13:00	0	51	6	1	4	0	0	0	0	0	0	0	0	62
13:15	0	37	5	0	2	0	0	0	0	0	0	0	0	44
13:30	0	42	10	0	3	2	0	0	1	0	0	0	0	58
13:45	0	41	6	0	4	0	0	0	0	0	0	0	0	51
14:00	1	33	8	0	3	0	0	0	0	0	0	0	0	45
14:15	0	53	4	1	0	0	0	0	0	0	0	0	0	58
14:30	0	36	4	0	1	0	0	1	0	0	0	0	0	42
14:45	0	38	2	0	0	1	0	0	0	0	0	0	0	41
15:00	0	43	4	0	0	0	0	0	0	0	0	0	0	47
15:15	1	27	3	1	2	0	0	0	0	0	0	0	0	34
15:30	1	42	10	0	5	1	0	0	0	0	0	0	0	59
15:45	0	36	3	0	3	0	0	0	0	0	0	0	0	42
16:00	0	45	8	0	0	0	0	0	0	0	0	0	0	53
16:15	0	46	4	0	3	0	0	0	0	0	0	0	0	53
16:30	0	44	8	1	1	0	0	0	0	0	0	0	0	54
16:45	1	45	7	0	4	0	0	0	0	0	0	1	0	58
17:00	0	48	6	0	1	0	0	0	0	0	0	0	0	55
17:15	0	42	8	0	1	0	0	0	0	0	0	0	0	51
17:30	0	49	5	1	1	0	0	0	0	0	0	0	0	56
17:45	1	54	9	0	3	0	0	0	0	0	0	0	0	67
18:00	1	45	6	0	4	0	0	1	0	0	0	0	0	57
18:15	0	34	4	0	3	0	0	0	0	0	0	0	0	41
18:30	0	51	7	0	1	0	0	0	0	0	0	0	0	59
18:45	0	46	5	1	1	0	0	0	0	0	0	0	0	53
19:00	1	49	5	0	1	0	0	0	0	0	0	0	0	56
19:15	0	29	4	0	1	0	0	0	0	0	0	0	0	34
19:30	0	38	5	1	0	0	0	0	0	0	0	0	0	44
19:45	0	36	1	0	2	0	0	0	0	0	0	0	0	39
20:00	0	34	4	0	1	0	0	0	0	0	0	0	0	39
20:15	0	33	5	0	0	0	0	0	0	0	0	0	0	38
20:30	0	25	1	1	2	0	0	0	0	0	0	0	0	29
20:45	0	47	4	0	1	1	0	0	0	0	0	0	0	53
21:00	0	28	1	0	2	0	0	0	0	0	0	0	0	31
21:15	0	31	4	0	0	0	0	0	0	0	0	0	0	35
21:30	0	21	2	1	1	0	0	0	0	0	0	0	0	25
21:45	0	23	4	0	2	0	0	0	0	0	0	0	0	29
22:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
22:15	0	21	3	0	1	0	0	0	0	0	0	0	0	25
22:30	0	16	0	0	0	0	0	0	0	0	0	0	0	16
22:45	0	14	1	0	0	0	0	0	0	0	0	0	0	15
23:00	0	10	0	0	1	0	0	0	0	0	0	0	0	11
23:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7
23:30	0	15	0	0	0	0	0	0	0	0	0	0	0	15
23:45	0	7	2	0	0	0	0	0	0	0	0	0	0	9
TOTAL	7	1,648	201	10	71	5	0	2	1	0	0	1	0	1,946

PM PEAK HOUR	5:15 PM
PM PEAK VOLUME	231

TOTAL: AM+PM	10	2,306	272	16	106	8	1	3	2	0	0	1	0	2,725
% OF TOTAL	0.4%	84.6%	10.0%	0.6%	3.9%	0.3%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	20	4,404	509	31	184	16	4	5	2	0	0	1	0	5,176
% OF TOTAL	0.7%	161.6%	18.7%	1.1%	6.8%	0.6%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS10 Hemlock east of Indian

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
0:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
0:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
0:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	2	1	0	1	0	0	0	0	0	0	0	0	4
3:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:45	0	0	2	0	1	0	0	0	0	0	0	0	0	3
4:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
4:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
4:30	0	6	0	0	2	0	0	0	0	0	0	0	0	8
4:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
5:00	0	5	0	0	1	0	0	0	0	0	0	0	0	6
5:15	0	5	0	1	0	0	0	0	0	0	0	0	0	6
5:30	0	8	2	0	0	0	1	0	0	0	0	0	0	11
5:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
6:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
6:15	0	7	3	0	0	1	0	0	0	0	0	0	0	11
6:30	0	11	2	1	0	0	0	0	0	0	0	0	0	14
6:45	0	16	3	0	1	0	0	0	0	0	0	0	0	20
7:00	0	30	1	0	3	0	0	0	0	0	0	0	0	34
7:15	0	32	1	0	1	0	0	0	0	0	0	0	0	34
7:30	2	42	1	1	0	0	0	0	0	0	0	0	0	46
7:45	0	46	7	0	1	1	0	0	0	0	0	0	0	55
8:00	0	48	3	0	0	0	0	0	0	0	0	0	0	51
8:15	0	33	1	0	1	0	0	0	0	0	0	0	0	35
8:30	0	18	5	1	3	0	0	0	0	0	0	0	0	27
8:45	0	17	5	0	2	0	1	0	0	0	0	0	0	25
9:00	0	19	2	0	1	0	0	0	0	0	0	0	0	22
9:15	0	24	2	0	1	0	0	0	0	0	0	0	0	27
9:30	0	27	8	1	1	0	0	0	0	0	0	0	0	37
9:45	0	30	5	0	2	0	0	0	0	0	0	0	0	37
10:00	0	24	2	0	3	0	0	0	0	0	0	0	0	29
10:15	0	22	4	0	0	0	0	0	0	0	0	0	0	26
10:30	0	30	4	0	2	0	0	0	0	0	0	0	0	36
10:45	1	30	3	1	2	0	0	0	0	0	0	0	0	37
11:00	0	19	3	0	1	0	0	1	0	0	0	0	0	24
11:15	0	20	4	0	0	0	1	0	0	0	0	0	0	25
11:30	0	22	5	0	0	0	0	0	0	0	0	0	0	27
11:45	0	35	2	1	2	1	0	0	0	0	0	0	0	41
TOTAL	3	683	88	7	32	3	3	1	0	0	0	0	0	820

AM PEAK HOUR	7:30 AM
AM PEAK VOLUME	187

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	19	6	0	1	0	0	0	0	0	0	0	0	26
12:15	0	30	3	0	5	0	0	1	0	0	0	0	0	39
12:30	0	32	5	0	3	1	0	0	0	0	0	0	0	41
12:45	0	35	2	0	1	0	0	0	0	0	0	0	0	38
13:00	0	31	4	1	0	0	0	0	0	0	0	0	0	36
13:15	0	24	1	0	0	0	0	0	0	0	0	0	0	25
13:30	0	37	8	0	4	0	0	0	0	0	0	0	0	49
13:45	0	34	1	0	1	0	0	0	0	0	0	0	0	36
14:00	0	38	4	0	0	0	0	0	0	0	0	0	0	42
14:15	2	38	4	1	1	3	0	0	0	0	0	0	0	49
14:30	0	28	5	0	2	0	0	0	0	0	0	0	0	35
14:45	0	24	6	0	0	0	0	0	0	0	0	0	0	30
15:00	0	29	3	0	2	0	0	0	0	0	0	0	0	34
15:15	1	26	6	1	3	0	0	0	0	0	0	0	0	37
15:30	0	41	6	1	1	0	0	0	0	0	0	0	0	49
15:45	0	28	5	0	0	0	0	0	0	0	0	0	0	33
16:00	0	27	2	0	0	0	0	0	0	0	0	0	0	29
16:15	0	37	5	0	0	0	0	0	0	0	0	0	0	42
16:30	0	33	3	1	2	0	0	0	0	0	0	0	0	39
16:45	0	28	5	0	2	0	0	0	0	0	0	0	0	35
17:00	0	30	2	0	1	0	0	0	0	0	0	0	0	33
17:15	0	25	3	0	1	0	0	0	0	0	0	0	0	29
17:30	0	23	2	0	0	0	0	0	0	0	0	0	0	25
17:45	0	36	3	1	0	0	0	0	0	0	0	0	0	40
18:00	0	32	2	0	1	0	0	0	0	0	0	0	0	35
18:15	0	33	3	0	1	0	0	0	0	0	0	0	0	37
18:30	0	27	2	0	2	0	0	0	0	0	0	0	0	31
18:45	0	33	3	1	0	0	0	0	0	0	0	0	0	37
19:00	0	30	4	0	0	0	0	0	0	0	0	0	0	34
19:15	0	22	3	0	1	1	0	0	0	0	0	0	0	27
19:30	0	30	1	0	0	0	0	0	0	0	0	0	0	31
19:45	0	34	4	1	1	0	0	0	0	0	0	0	0	40
20:00	0	30	2	0	0	0	0	0	0	0	0	0	0	32
20:15	0	36	5	0	0	0	0	0	0	0	0	0	0	41
20:30	0	27	3	0	1	0	0	0	0	0	0	0	0	31
20:45	0	39	2	0	2	0	0	0	0	0	0	0	0	43
21:00	0	29	2	0	0	0	0	0	0	0	0	0	0	31
21:15	1	35	3	0	2	0	0	0	0	0	0	0	0	41
21:30	2	38	5	0	1	0	0	0	0	0	0	0	0	46
21:45	0	42	0	0	1	0	0	0	0	0	0	0	0	43
22:00	0	40	2	0	0	0	0	0	0	0	0	0	0	42
22:15	0	19	3	0	0	0	0	0	0	0	0	0	0	22
22:30	0	28	3	0	1	0	0	0	0	0	0	0	0	32
22:45	0	23	1	0	1	0	0	0	0	0	0	0	0	25
23:00	1	20	0	0	1	0	0	0	0	0	0	0	0	22
23:15	0	13	1	0	0	0	0	0	0	0	0	0	0	14
23:30	0	10	0	0	0	0	0	0	0	0	0	0	0	10
23:45	0	12	1	0	0	0	0	0	0	0	0	0	0	13
TOTAL	7	1,415	149	8	46	5	0	1	0	0	0	0	0	1,631

PM PEAK HOUR	1:30 PM
PM PEAK VOLUME	176

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	10	2,098	237	15	78	8	3	2	0	0	0	0	0	2,451
% OF TOTAL	0.4%	85.6%	9.7%	0.6%	3.2%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS11 Ironwood between Davis and Nita

AM	EASTBOUND														PM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	24	1	0	0	0	0	0	0	0	0	0	0	25	12:00	4	73	11	0	1	2	0	0	0	0	0	1	0	92
0:15	0	17	1	0	2	0	0	0	0	0	0	0	0	20	12:15	0	65	7	1	8	0	0	0	1	0	0	0	0	82
0:30	0	10	2	0	0	0	0	0	0	0	0	0	0	12	12:30	4	58	11	0	6	0	0	0	0	0	0	0	0	79
0:45	0	16	1	0	0	0	0	0	0	0	0	0	0	17	12:45	0	72	3	0	9	0	0	0	0	0	0	0	0	84
1:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11	13:00	0	88	17	1	4	1	0	0	0	0	0	0	0	111
1:15	0	8	2	0	1	0	0	0	0	0	0	0	0	11	13:15	2	97	13	0	8	1	0	0	0	0	0	0	0	121
1:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5	13:30	0	82	10	1	7	0	0	1	0	0	0	0	0	101
1:45	0	12	2	0	0	0	0	0	0	0	0	0	0	14	13:45	0	88	12	2	5	1	0	0	0	0	0	0	0	108
2:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6	14:00	0	83	12	1	12	1	1	0	0	0	0	0	0	110
2:15	0	6	0	0	1	0	0	0	0	0	0	0	0	7	14:15	1	137	17	0	7	2	0	0	0	0	1	0	0	165
2:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3	14:30	0	105	19	0	7	3	0	0	0	0	0	0	0	134
2:45	0	11	0	0	0	0	0	0	0	0	0	0	0	11	14:45	0	78	18	0	7	0	0	0	0	0	0	0	0	103
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	15:00	0	79	12	0	5	1	0	0	0	0	0	0	0	97
3:15	0	4	1	0	1	0	0	0	0	0	0	0	0	6	15:15	0	83	14	1	7	2	0	0	0	0	0	0	0	107
3:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4	15:30	2	78	12	1	5	1	0	0	0	0	0	0	0	99
3:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5	15:45	0	80	14	0	5	1	1	0	0	0	0	0	0	101
4:00	0	8	0	0	1	0	0	0	0	0	0	0	0	9	16:00	0	89	16	0	9	1	0	0	0	0	0	0	0	115
4:15	0	6	0	0	1	0	0	0	0	0	0	0	0	7	16:15	1	110	14	0	9	0	0	0	0	0	0	0	0	134
4:30	0	11	1	0	0	0	0	0	0	0	0	0	0	12	16:30	0	97	12	1	7	3	0	0	0	0	0	0	0	120
4:45	0	15	3	0	2	0	0	0	0	0	0	0	0	20	16:45	0	98	21	0	16	3	0	0	0	0	0	0	0	138
5:00	0	10	2	0	2	0	0	0	0	0	0	0	0	14	17:00	3	114	17	0	8	3	0	0	0	0	0	0	0	145
5:15	0	10	2	1	0	0	0	0	0	0	0	0	0	13	17:15	0	111	12	0	11	2	0	0	0	0	0	0	0	136
5:30	0	10	4	0	2	0	0	0	0	0	0	0	0	16	17:30	5	130	16	0	13	1	0	0	0	0	0	1	0	166
5:45	1	20	2	0	2	0	0	0	0	0	0	0	0	25	17:45	2	134	18	0	9	0	0	0	0	0	0	0	0	163
6:00	0	22	2	0	2	0	0	0	0	0	0	0	0	26	18:00	1	117	19	0	4	3	0	0	0	0	1	1	1	147
6:15	0	19	4	1	2	0	0	0	0	0	0	0	0	26	18:15	1	121	15	0	6	0	0	0	0	0	0	0	0	143
6:30	0	25	3	0	5	0	0	0	0	0	0	0	0	33	18:30	3	100	10	0	9	2	0	0	0	0	0	0	0	124
6:45	0	33	6	0	2	0	1	0	0	0	0	0	0	42	18:45	2	107	11	1	4	2	0	0	0	0	0	0	0	127
7:00	0	62	4	0	5	0	0	0	0	0	0	0	0	71	19:00	1	85	12	0	2	2	0	0	0	0	0	0	0	102
7:15	0	102	13	1	10	3	0	0	0	0	0	0	0	129	19:15	0	84	13	0	6	0	0	0	0	0	0	0	0	103
7:30	1	120	10	0	6	2	0	0	0	0	0	0	0	139	19:30	0	84	8	0	3	1	0	0	0	0	0	0	0	96
7:45	2	101	17	0	6	1	0	0	0	0	0	0	0	127	19:45	0	77	13	0	3	2	0	0	0	0	0	0	0	95
8:00	0	88	6	0	2	3	0	0	0	0	0	0	0	99	20:00	0	83	8	0	5	0	0	0	0	0	0	0	0	96
8:15	0	58	9	0	4	0	0	0	0	0	1	0	0	72	20:15	0	63	11	0	11	0	0	0	0	0	0	0	0	85
8:30	1	61	10	1	4	0	0	0	0	0	0	0	0	77	20:30	2	55	11	0	4	1	0	0	0	0	0	0	0	73
8:45	1	57	9	0	6	1	0	0	0	0	0	0	0	74	20:45	0	71	9	1	4	1	0	0	0	0	0	0	0	86
9:00	0	52	9	0	4	1	0	0	0	0	0	0	0	66	21:00	0	59	6	0	2	0	0	0	0	0	0	0	0	67
9:15	0	37	13	1	8	0	1	1	0	0	0	0	0	61	21:15	0	71	13	0	0	0	0	0	0	0	0	0	0	84
9:30	0	46	12	2	7	0	0	0	0	0	0	0	0	67	21:30	0	50	5	0	3	1	0	0	0	0	0	0	0	59
9:45	0	42	9	0	2	1	0	0	0	0	0	0	0	54	21:45	1	44	4	0	2	0	0	0	0	0	0	0	0	51
10:00	0	44	7	0	1	0	0	0	0	0	0	0	0	52	22:00	0	33	6	0	2	1	0	0	0	0	0	0	0	42
10:15	0	37	10	0	2	3	0	0	0	0	0	0	0	52	22:15	0	41	6	0	1	0	0	0	0	0	0	0	0	48
10:30	0	57	12	1	3	0	0	0	0	0	0	0	0	73	22:30	0	36	3	0	1	0	0	0	0	0	0	0	0	40
10:45	0	55	10	1	4	0	0	1	0	0	1	0	0	72	22:45	0	19	1	0	0	1	0	0	0	0	0	0	0	21
11:00	0	60	8	0	7	3	0	0	0	0	0	0	0	78	23:00	0	32	6	0	1	1	0	0	0	0	0	0	0	40
11:15	0	84	18	0	5	2	0	0	0	0	0	0	0	109	23:15	0	24	1	0	2	0	0	0	0	0	0	0	0	27
11:30	0	89	15	0	1	1	0	0	0	0	0	0	0	106	23:30	0	21	2	0	1	0	0	0	0	0	0	0	0	24
11:45	1	74	16	1	6	1	0	0	0	0	0	0	0	99	23:45	0	13	1	0	1	0	0	0	0	0	0	0	0	15
TOTAL	7	1,655	260	10	119	22	2	2	0	0	2	0	0	2,079	TOTAL	35	3,719	522	11	262	47	2	1	1	0	2	3	1	4,606

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	494

PM PEAK HOUR	5:30 PM
PM PEAK VOLUME	619

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	42	5,374	782	21	381	69	4	3	1	0	4	3	1	6,685
% OF TOTAL	0.6%	80.4%	11.7%	0.3%	5.7%	1.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	108	11,242	1,622	41	654	154	6	6	11	1	7	7	3	13,862
% OF TOTAL	1.6%	168.2%	24.3%	0.6%	9.8%	2.3%	0.1%	0.1%	0.2%	0.0%	0.1%	0.1%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS11 Ironwood between Davis and Nita

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
0:15	0	11	2	0	0	0	0	0	0	0	0	0	0	13
0:30	0	6	0	0	0	1	0	0	0	0	0	0	0	7
0:45	0	8	0	0	0	0	0	0	0	0	0	0	0	8
1:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
1:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
1:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
1:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
2:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
2:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
2:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
3:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
3:15	0	10	3	0	0	0	0	0	0	0	0	0	0	13
3:30	2	7	1	0	1	0	0	0	0	0	0	0	0	11
3:45	0	15	6	0	1	0	0	0	0	0	0	0	0	22
4:00	1	11	5	0	3	0	0	0	0	0	0	0	0	20
4:15	0	22	1	0	1	0	0	0	0	0	0	0	0	24
4:30	0	24	7	0	3	1	0	0	0	0	0	0	0	35
4:45	0	25	7	0	1	0	0	0	0	0	0	0	0	33
5:00	0	38	4	0	2	0	0	0	0	0	0	0	0	44
5:15	0	33	5	0	3	0	0	0	0	0	0	0	0	41
5:30	0	38	19	0	5	1	0	0	0	0	0	0	0	63
5:45	0	32	5	0	2	1	0	0	0	0	0	0	0	40
6:00	0	36	8	0	3	1	0	0	0	0	0	0	0	48
6:15	0	47	9	0	2	0	0	0	0	0	0	0	0	58
6:30	0	63	13	1	3	0	0	0	0	0	0	0	0	80
6:45	0	78	16	0	8	1	0	0	0	0	0	0	0	103
7:00	0	104	16	0	5	3	0	0	0	0	0	0	0	128
7:15	4	148	17	0	8	0	0	0	0	0	0	0	0	177
7:30	3	174	23	3	5	2	0	0	0	0	0	0	1	211
7:45	6	190	21	1	6	6	0	0	0	0	0	1	0	231
8:00	5	133	17	0	10	5	0	0	0	0	0	0	0	170
8:15	4	80	9	0	8	0	0	0	0	0	0	0	0	101
8:30	2	65	13	1	3	1	0	0	0	0	0	0	0	85
8:45	1	69	9	0	3	0	0	0	0	0	0	0	0	82
9:00	0	58	15	0	5	0	0	0	0	0	1	0	0	79
9:15	0	73	5	0	4	1	0	0	0	0	0	0	0	83
9:30	0	52	6	0	4	0	0	0	0	0	0	0	0	62
9:45	0	42	15	1	1	0	0	0	0	0	0	0	0	59
10:00	0	67	7	0	1	0	0	0	0	0	0	0	0	75
10:15	0	55	9	0	1	1	0	1	0	0	0	0	0	67
10:30	0	56	12	0	2	1	0	0	0	0	0	0	0	71
10:45	0	62	9	2	3	0	0	0	0	0	0	0	0	76
11:00	0	48	10	0	3	1	0	0	0	0	0	0	0	62
11:15	0	53	3	0	3	0	0	0	0	0	0	0	0	59
11:30	0	111	17	1	5	2	0	0	0	0	0	0	0	136
11:45	0	90	16	0	1	4	0	0	0	0	0	0	0	111
TOTAL	28	2,302	369	10	119	33	0	1	0	0	1	1	1	2,865

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	789

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	67	16	1	3	1	0	0	0	0	0	0	0	88
12:15	0	89	15	0	3	1	0	0	0	0	0	0	0	108
12:30	0	87	14	0	8	1	0	0	0	0	0	0	0	110
12:45	0	78	18	0	4	0	0	0	1	0	0	0	0	101
13:00	0	94	9	1	7	1	0	0	0	0	0	0	0	112
13:15	0	73	8	0	4	2	0	0	0	0	0	0	0	87
13:30	0	78	11	0	6	1	0	0	0	0	0	1	0	97
13:45	0	93	10	0	4	2	0	0	0	0	0	0	1	110
14:00	0	90	20	0	3	3	0	0	0	0	1	0	0	117
14:15	0	111	10	1	3	3	0	0	0	0	0	0	0	128
14:30	1	88	8	0	6	2	0	0	0	0	0	1	0	106
14:45	0	72	14	0	11	0	0	1	0	0	0	0	0	98
15:00	2	90	14	0	1	0	0	0	0	0	0	0	0	107
15:15	1	78	6	0	1	1	0	0	0	0	0	0	0	87
15:30	4	77	13	1	1	2	1	0	0	0	0	0	0	99
15:45	2	72	16	0	3	2	0	1	0	0	0	0	0	96
16:00	1	79	13	0	2	1	0	0	0	0	0	0	0	96
16:15	0	100	13	0	4	1	0	0	0	0	0	0	0	118
16:30	0	63	13	1	4	2	0	0	0	0	0	0	0	83
16:45	0	93	14	0	8	4	0	0	0	0	0	0	0	119
17:00	2	90	15	0	4	0	0	0	0	0	0	0	0	111
17:15	0	82	13	0	3	0	0	0	0	0	0	0	0	98
17:30	2	96	11	0	8	0	1	0	0	0	0	0	0	118
17:45	2	91	12	1	3	1	0	0	0	0	0	0	0	110
18:00	0	87	7	0	4	2	0	0	0	0	0	0	0	100
18:15	0	77	8	0	1	1	0	0	0	0	0	0	0	87
18:30	2	93	10	0	1	3	0	0	0	0	0	0	0	109
18:45	0	74	13	1	4	2	0	0	0	0	0	0	0	94
19:00	2	85	8	0	2	0	0	0	0	0	0	0	0	97
19:15	0	63	13	0	8	1	0	0	0	0	0	0	0	85
19:30	0	69	12	0	1	1	0	0	0	0	1	0	0	84
19:45	0	72	10	1	1	0	0	0	0	0	0	0	0	84
20:00	2	67	9	0	1	2	0	0	0	0	0	0	0	81
20:15	0	81	13	0	4	0	0	0	1	0	0	0	0	99
20:30	2	109	7	0	2	2	0	0	0	0	0	0	0	122
20:45	3	85	8	1	3	0	0	0	0	0	0	0	0	100
21:00	3	84	8	0	1	1	0	0	1	1	0	0	0	99
21:15	0	86	6	0	2	0	0	0	1	0	0	1	0	96
21:30	0	72	8	0	3	2	0	0	2	0	0	0	0	87
21:45	5	70	5	1	3	3	0	0	0	0	0	0	0	87
22:00	2	49	4	0	1	0	0	0	1	0	0	0	0	57
22:15	0	51	8	0	1	0	0	0	0	0	0	0	0	60
22:30	0	40	4	0	2	1	0	0	0	0	0	0	0	47
22:45	0	25	1	0	0	0	0	0	0	0	0	0	0	26
23:00	0	16	2	0	2	0	0	0	0	0	0	0	0	20
23:15	0	33	0	0	0	0	0	0	1	0	0	0	0	34
23:30	0	23	1	0	3	0	0	0	1	0	0	0	0	28
23:45	0	24	0	0	0	0	0	0	1	0	0	0	0	25
TOTAL	38	3,566	471	10	154	52	2	2	10	1	2	3	1	4,312

PM PEAK HOUR	1:45 PM
PM PEAK VOLUME	461

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	66	5,868	840	20	273	85	2	3	10	1	3	4	2	7,177
% OF TOTAL	0.9%	81.8%	11.7%	0.3%	3.8%	1.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS12 Hemlock between East FMV and Nita

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	10	1	0	1	0	0	0	0	0	0	0	0	12
0:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
1:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
2:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
2:15	0	8	1	0	0	0	0	0	0	0	0	0	0	9
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
3:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:45	0	7	0	0	0	0	0	0	0	0	0	0	0	7
4:00	0	5	1	0	1	0	0	0	0	0	0	0	0	7
4:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
4:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
5:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
5:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
5:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
5:45	0	7	0	0	0	0	0	0	0	0	0	0	0	7
6:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
6:15	0	2	1	1	0	0	0	0	0	0	0	0	0	4
6:30	0	8	1	0	0	0	0	0	0	0	0	0	0	9
6:45	0	8	1	0	1	0	0	0	0	0	0	0	0	10
7:00	0	10	1	0	3	1	0	0	0	0	0	0	0	15
7:15	1	11	0	1	2	0	0	0	0	0	0	0	0	15
7:30	1	34	1	0	0	0	0	0	0	0	0	0	0	36
7:45	0	32	2	0	1	0	0	0	0	0	0	0	0	35
8:00	0	12	2	0	0	0	0	0	1	0	0	0	0	15
8:15	0	13	4	0	2	0	0	0	0	0	0	0	0	19
8:30	2	16	1	1	0	0	0	0	0	0	0	0	0	20
8:45	0	26	1	0	2	0	0	0	0	0	0	0	0	29
9:00	0	22	3	1	0	0	0	0	0	0	0	0	0	26
9:15	0	7	5	0	0	0	0	0	0	0	0	0	0	12
9:30	0	20	5	1	1	0	0	0	0	0	0	0	0	27
9:45	0	30	0	0	0	0	0	0	0	0	0	0	0	30
10:00	1	23	3	0	1	0	0	0	0	0	0	0	0	28
10:15	0	27	5	0	0	0	0	0	0	0	0	0	0	32
10:30	0	21	2	0	1	0	0	0	0	0	0	0	0	24
10:45	0	31	6	1	2	0	0	0	0	0	0	0	0	40
11:00	0	36	2	0	1	0	1	0	0	0	0	0	0	40
11:15	1	35	7	0	1	0	0	0	0	0	0	0	0	44
11:30	0	25	6	0	0	0	0	0	0	0	0	0	0	31
11:45	0	38	6	1	0	0	0	0	0	0	0	0	0	45
TOTAL	6	590	71	7	22	1	1	0	1	0	0	0	0	699

AM PEAK HOUR	11:00 AM
AM PEAK VOLUME	160

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	1	35	3	0	0	0	0	0	0	0	0	0	0	39
12:15	0	36	1	0	3	0	0	0	0	0	0	0	0	40
12:30	1	24	5	0	1	0	0	0	0	0	0	0	0	31
12:45	0	34	2	0	1	0	0	0	0	0	0	0	0	37
13:00	0	39	6	1	2	0	0	0	0	0	0	0	0	48
13:15	1	33	7	0	1	0	0	0	0	0	0	0	0	42
13:30	0	40	6	0	4	0	0	0	0	0	0	0	0	50
13:45	0	31	5	0	2	0	0	0	0	0	0	0	0	38
14:00	0	36	7	0	2	0	0	0	0	0	0	0	0	45
14:15	0	20	7	1	0	0	0	0	0	0	0	0	0	28
14:30	0	32	7	0	3	0	0	1	0	0	0	0	0	43
14:45	0	34	3	0	0	0	0	0	0	0	0	0	0	37
15:00	0	32	3	0	1	0	0	0	0	0	0	0	0	36
15:15	1	24	4	1	0	0	0	0	0	0	0	0	0	30
15:30	0	35	5	0	1	0	0	1	0	0	0	0	0	42
15:45	1	36	3	0	1	0	0	0	0	0	0	0	0	41
16:00	0	41	8	0	0	0	0	0	0	0	0	0	0	49
16:15	0	37	3	0	3	0	0	0	0	0	0	0	0	43
16:30	1	45	8	1	3	0	0	0	0	0	0	0	0	58
16:45	0	46	5	0	3	0	0	0	0	0	0	0	0	54
17:00	0	50	5	0	1	0	0	0	0	0	0	0	0	56
17:15	1	35	6	0	2	0	0	0	0	0	0	0	0	44
17:30	0	46	7	1	1	0	0	0	0	0	0	0	0	55
17:45	0	53	8	0	3	0	0	0	0	0	0	0	0	64
18:00	1	42	7	0	3	0	0	1	0	0	0	0	0	54
18:15	0	50	7	0	1	0	0	0	0	0	0	0	0	58
18:30	0	41	6	0	2	0	0	0	0	0	0	0	0	49
18:45	0	45	5	1	0	0	0	0	0	0	0	0	0	51
19:00	0	47	4	0	0	0	0	0	0	0	0	0	0	51
19:15	0	23	6	0	1	0	0	0	0	0	0	0	0	30
19:30	0	39	5	1	1	0	0	0	0	0	0	0	0	46
19:45	1	34	2	0	2	0	0	0	0	0	0	0	0	39
20:00	0	34	3	0	2	0	0	0	0	0	0	0	0	39
20:15	0	21	1	0	0	0	0	0	0	0	0	0	0	22
20:30	0	29	1	0	2	0	0	0	0	0	0	0	0	32
20:45	1	34	4	0	1	0	0	0	0	0	0	0	0	40
21:00	0	21	2	0	2	0	0	0	0	0	0	0	0	25
21:15	0	18	4	0	1	0	0	0	0	0	0	0	0	23
21:30	0	18	4	1	0	0	0	0	0	0	0	0	0	23
21:45	0	24	1	0	1	0	0	0	0	0	0	0	0	26
22:00	0	16	1	0	0	0	0	0	0	0	0	0	0	17
22:15	0	16	2	0	1	0	0	0	0	0	0	0	0	19
22:30	0	21	1	0	0	0	0	0	0	0	0	0	0	22
22:45	0	13	1	0	0	0	0	0	0	0	0	0	0	14
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
23:15	0	5	2	0	1	0	0	0	0	0	0	0	0	8
23:30	0	11	0	0	0	0	0	0	0	0	0	0	0	11
23:45	0	8	4	0	1	0	0	0	0	0	0	0	0	13
TOTAL	10	1,492	197	8	60	0	0	3	0	0	0	0	0	1,770

PM PEAK HOUR	5:30 PM
PM PEAK VOLUME	231

TOTAL: AM+PM	16	2,082	268	15	82	1	1	3	1	0	0	0	0	2,469
% OF TOTAL	0.6%	84.3%	10.9%	0.6%	3.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	16	3,284	379	30	106	4	1	4	1	0	0	0	0	3,825
% OF TOTAL	0.6%	133.0%	15.4%	1.2%	4.3%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wednesday, August 16, 2017
JOB #: SC1422

LOCATION#
CLASS12 Hemlock between East FMV and Nita

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
0:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
3:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
4:00	0	7	0	0	1	0	0	0	0	0	0	0	0	8
4:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
4:45	0	2	0	0	1	0	0	0	0	0	0	0	0	3
5:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
5:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
5:30	0	7	2	1	0	0	0	0	0	0	0	0	0	10
5:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
6:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
6:15	0	6	1	0	1	0	0	0	0	0	0	0	0	8
6:30	0	4	0	1	0	0	0	0	0	0	0	0	0	5
6:45	0	6	2	0	1	0	0	0	0	0	0	0	0	9
7:00	0	18	2	0	1	0	0	0	0	0	0	0	0	21
7:15	0	16	1	0	0	0	0	0	0	0	0	0	0	17
7:30	0	26	3	1	0	0	0	0	0	0	0	0	0	30
7:45	0	34	5	0	0	1	0	0	0	0	0	0	0	40
8:00	0	38	3	0	1	0	0	0	0	0	0	0	0	42
8:15	0	38	2	0	0	0	0	0	0	0	0	0	0	40
8:30	0	24	2	1	1	0	0	0	0	0	0	0	0	28
8:45	0	18	3	0	2	0	0	0	0	0	0	0	0	23
9:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
9:15	0	24	2	0	0	0	0	0	0	0	0	0	0	26
9:30	0	14	3	1	1	0	0	0	0	0	0	0	0	19
9:45	0	12	2	0	0	0	0	0	0	0	0	0	0	14
10:00	0	12	2	0	2	0	0	0	0	0	0	0	0	16
10:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
10:30	0	8	3	0	0	0	0	0	0	0	0	0	0	11
10:45	0	15	1	1	1	0	0	0	0	0	0	0	0	18
11:00	0	16	3	0	1	1	0	0	0	0	0	0	0	21
11:15	0	15	1	0	0	0	0	0	0	0	0	0	0	16
11:30	0	14	2	0	0	0	0	0	0	0	0	0	0	16
11:45	0	15	2	1	0	0	0	0	0	0	0	0	0	18
TOTAL	0	455	53	7	15	2	0	0	0	0	0	0	0	532

AM PEAK HOUR	7:30 AM
AM PEAK VOLUME	152

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	12	2	0	1	0	0	0	0	0	0	0	0	15
12:15	0	12	1	0	0	0	0	0	0	0	0	0	0	13
12:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
12:45	0	9	1	0	1	0	0	0	0	0	0	0	0	11
13:00	0	18	1	1	0	0	0	0	0	0	0	0	0	20
13:15	0	14	1	0	0	0	0	0	0	0	0	0	0	15
13:30	0	18	3	0	0	0	0	0	0	0	0	0	0	21
13:45	0	15	3	0	0	0	0	0	0	0	0	0	0	18
14:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
14:15	0	14	1	1	1	1	0	0	0	0	0	0	0	18
14:30	0	6	0	0	0	0	0	0	0	0	0	0	0	6
14:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
15:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
15:15	0	8	0	1	0	0	0	0	0	0	0	0	0	9
15:30	0	15	3	1	1	0	0	0	0	0	0	0	0	20
15:45	0	13	1	0	0	0	0	0	0	0	0	0	0	14
16:00	0	28	1	0	0	0	0	0	0	0	0	0	0	29
16:15	0	35	0	0	0	0	0	0	0	0	0	0	0	35
16:30	0	37	0	0	1	0	0	0	0	0	0	0	0	38
16:45	0	38	2	0	0	0	0	0	0	0	0	0	0	40
17:00	0	48	3	0	0	0	0	0	0	0	0	0	0	51
17:15	0	36	3	0	0	0	0	0	0	0	0	0	0	39
17:30	0	25	4	0	0	0	0	0	0	0	0	0	0	29
17:45	0	29	1	1	0	0	0	0	0	0	0	0	0	31
18:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
18:15	0	9	0	0	0	0	0	0	0	0	0	0	0	9
18:30	0	13	2	0	0	0	0	0	0	0	0	0	0	15
18:45	0	9	1	1	0	0	0	0	0	0	0	0	0	11
19:00	0	16	1	0	0	0	0	0	0	0	0	0	0	17
19:15	0	10	2	0	0	0	0	0	0	0	0	0	0	12
19:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
19:45	0	14	0	1	1	0	0	0	0	0	0	0	0	16
20:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
20:15	0	21	1	0	0	0	0	1	0	0	0	0	0	23
20:30	0	13	0	0	0	0	0	0	0	0	0	0	0	13
20:45	0	15	2	1	1	0	0	0	0	0	0	0	0	19
21:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
21:15	0	18	1	0	1	0	0	0	0	0	0	0	0	20
21:30	0	22	1	0	0	0	0	0	0	0	0	0	0	23
21:45	0	14	1	0	0	0	0	0	0	0	0	0	0	15
22:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
22:15	0	11	1	0	0	0	0	0	0	0	0	0	0	12
22:30	0	9	2	0	0	0	0	0	0	0	0	0	0	11
22:45	0	9	1	0	0	0	0	0	0	0	0	0	0	10
23:00	0	14	0	0	1	0	0	0	0	0	0	0	0	15
23:15	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
23:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
TOTAL	0	747	58	8	9	1	0	1	0	0	0	0	0	824

PM PEAK HOUR	4:30 PM
PM PEAK VOLUME	168

TOTAL: AM+PM	0	1,202	111	15	24	3	0	1	0	0	0	0	0	1,356
% OF TOTAL	0.0%	88.6%	8.2%	1.1%	1.8%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	1	2	3	4	5	6	7	8	9	10	11	12	13

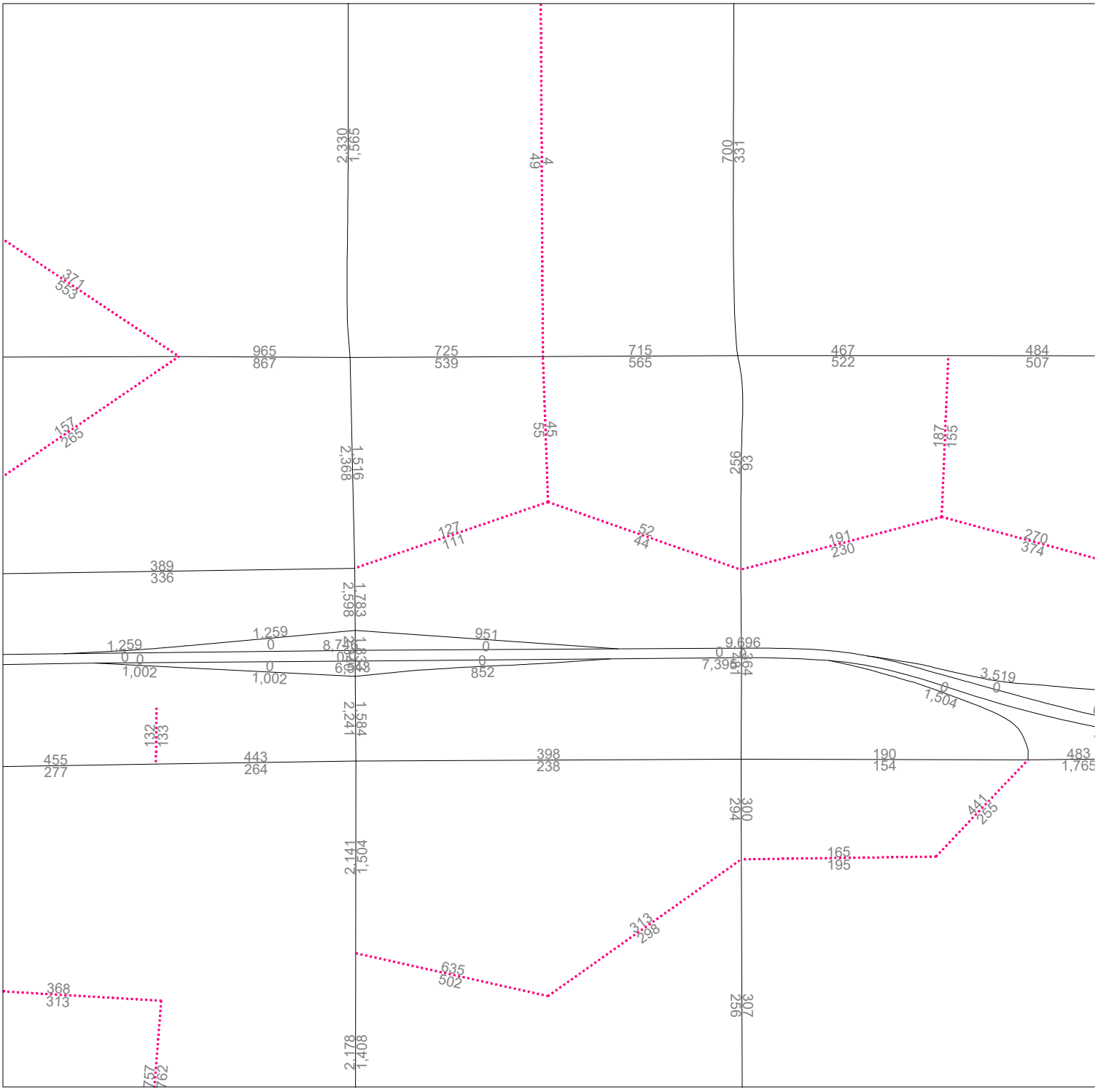
CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

Appendix C: LOS Worksheets

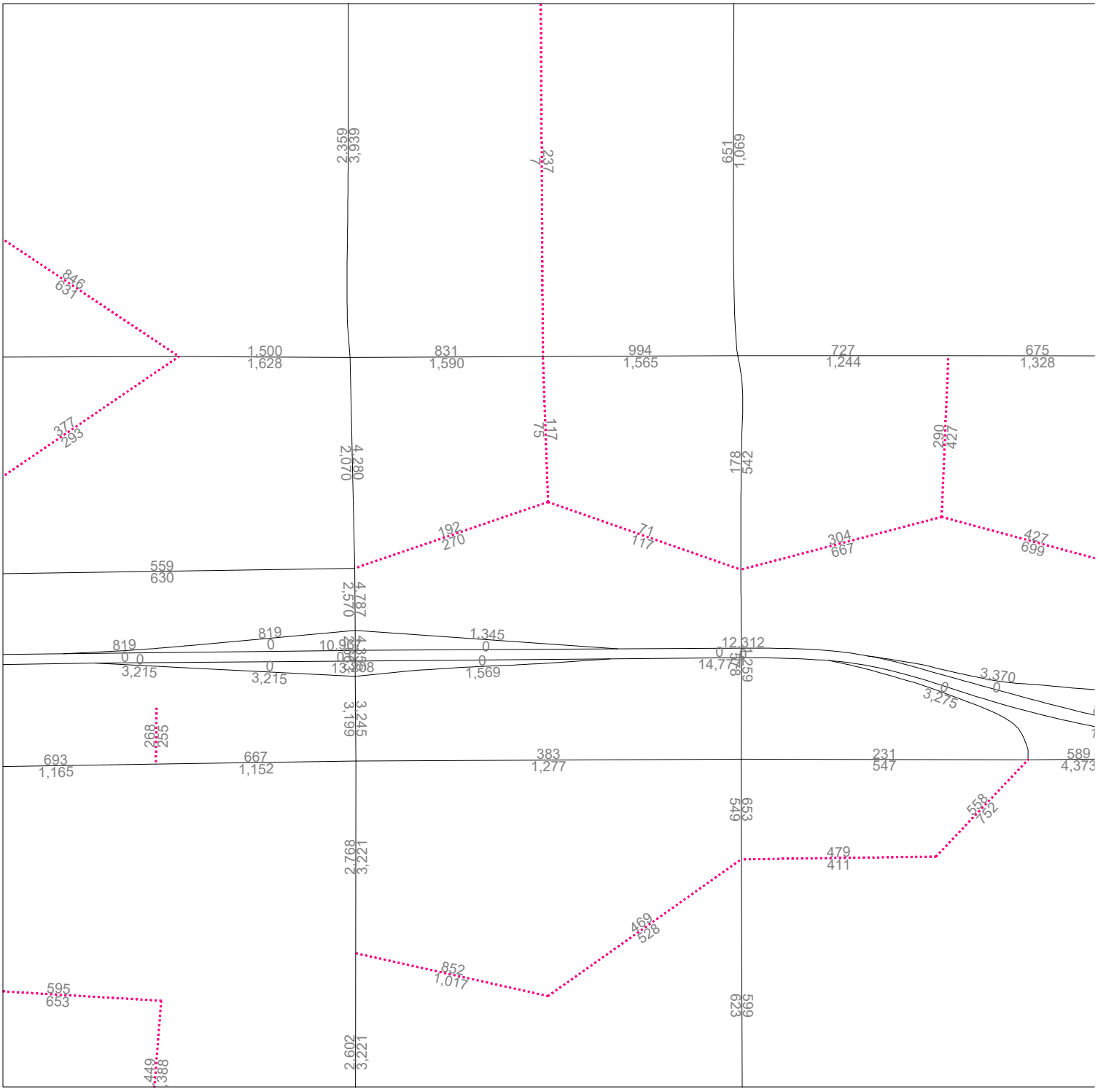
Appendix D: City Approved/Pending Projects List

Project	Address	APN
1. Moreno Valley Plaza (Shopping Center)	23607 Sunnymead Blvd 23935 Sunnymead Blvd	292100016
2. Olivewood Plaza (Office)	23288 Olivewood Plaza Dr.	
3. Riverside County Office Building (Office)	12625 Heacock St., 92553	
4. Sleep Inn & Suites (Hotel)	n/a	292241003
5. Econo Lodge (Hotel)	24412 Sunnymead, 92553	
6. Holiday Inn Express (Hotel)	24630 Sunnymead, 92553	
7. Best Western Hotel and Suites (Hotel)	24840 Elder Ave, 92557	
8. Tract 32710 (Single Family Residential)	n/a	475182043
9. Tract 32126 (Single Family Residential)	n/a	475060001
10. Tract 36761 (Single Family Residential)	n/a	475250067
11. Tract 31621 (Single Family Residential)	n/a	475220060
12. Tract 35956 (Single Family Residential)	TRACT NOT ON FILE	
13. PA14-0027 (Multi-Family Apartments)	23778 Hemlock Ave, 92557	292181001
14. Tract 31814 (Multi-Family Condos)	n/a	479050010
15. Tract 33771 (Multi-Family Condos)	n/a	481120020
16. PEN 16-0066 (Multi-Family Apartments)	24298 Webster Ave, 92553	
17. Tract 35663 (Multi-Family Condos)	n/a	481140024
18. Tract 35769 (Multi-Family Condos)	n/a	481270053
19. PA09-0006 (Multi-Family Apartments)	n/a	482020058

Appendix E:Transportation Analysis Model Outputs

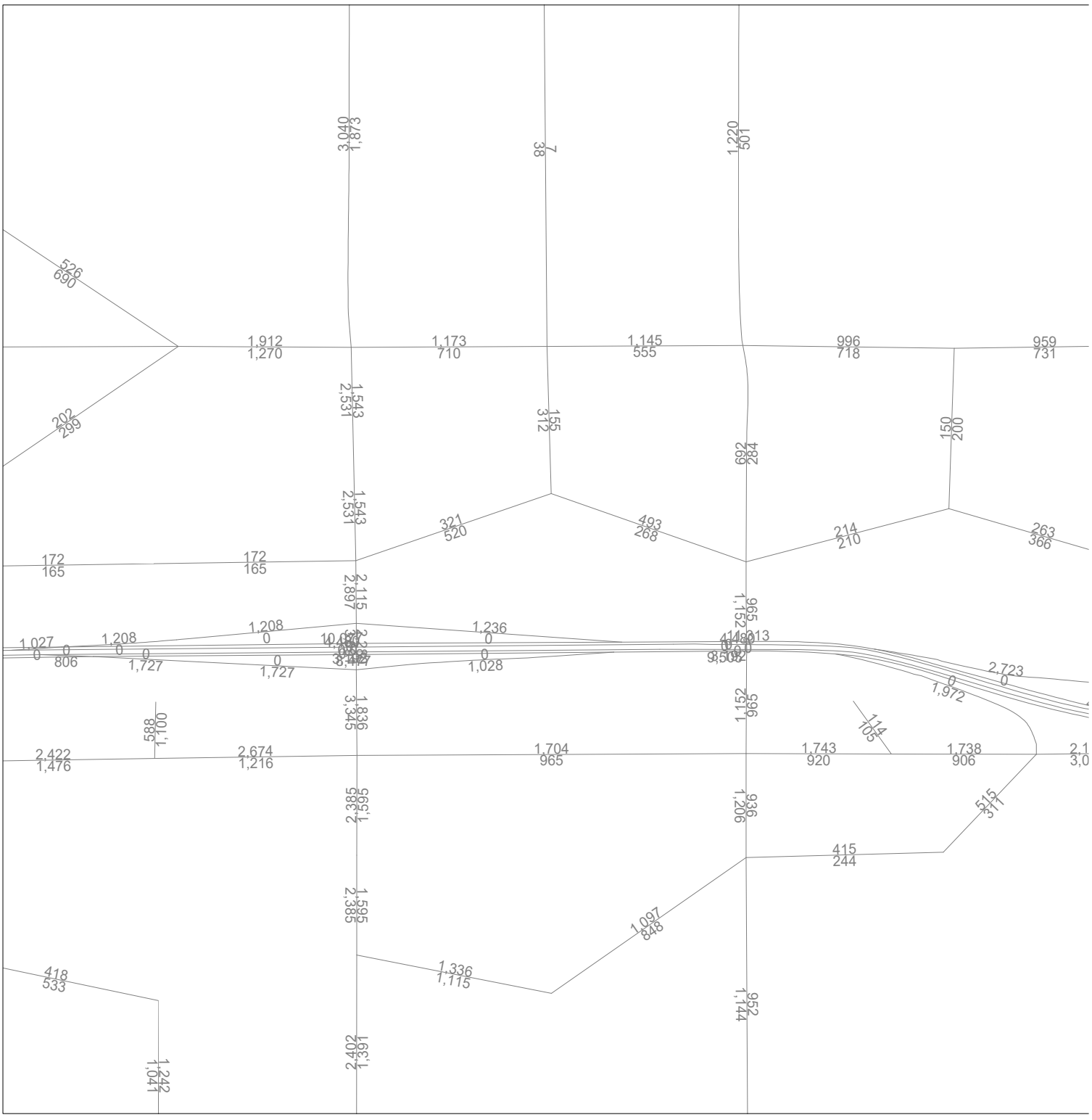


2007 AM

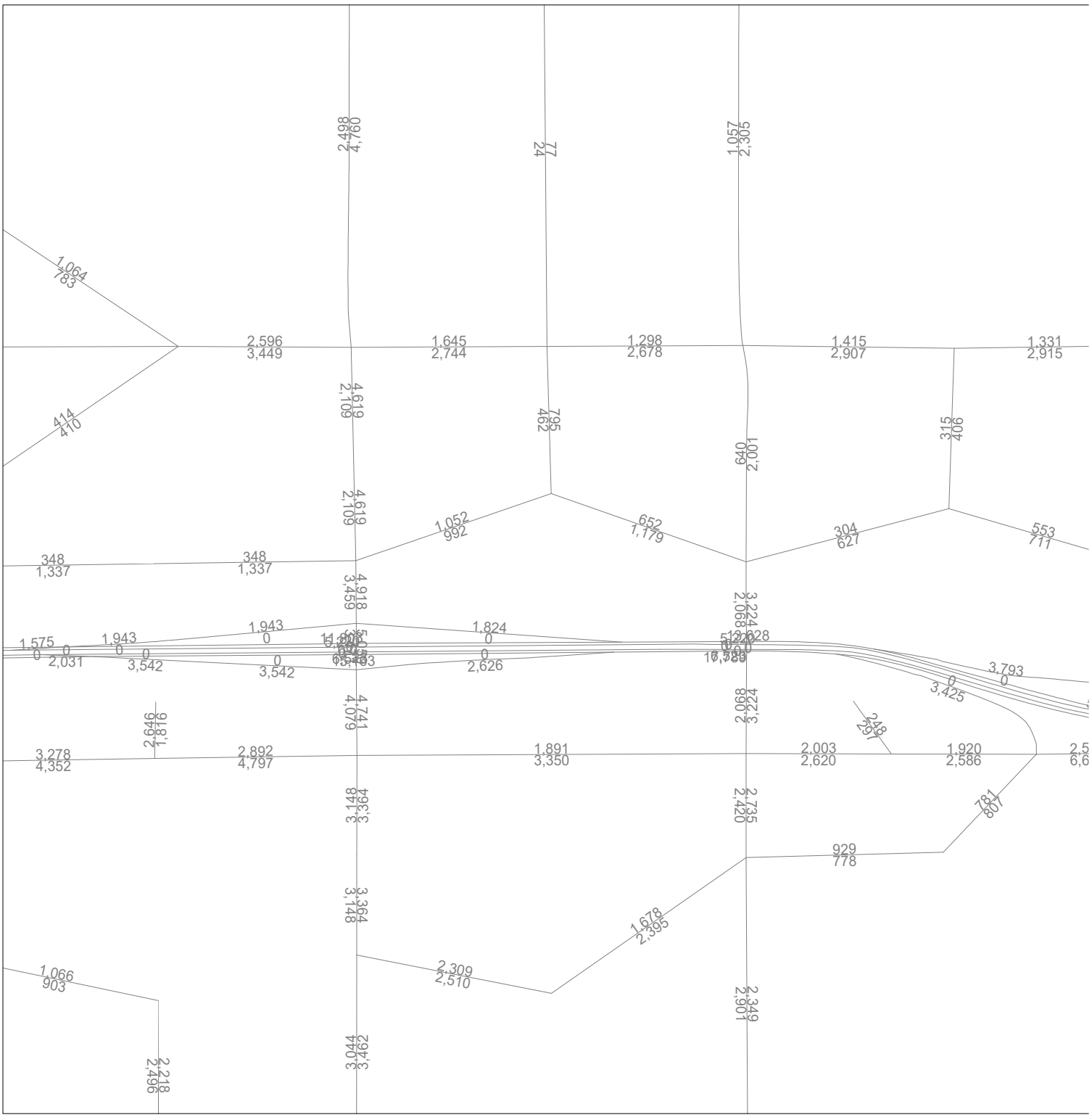


Attachment: Traffic Impact Analysis [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205 Amendment)

2007 PM



2035 AM



Attachment: Traffic Impact Analysis [Revision 1] (3014 : Moreno Valley Festival Specific Plan 205 Amendment)

2035 PM

Synchro LOS Reports

Existing

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	279	125	161	534	43	107	431	92	52	555	263
Future Volume (veh/h)	133	279	125	161	534	43	107	431	92	52	555	263
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	297	133	171	568	46	114	459	98	55	590	280
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	792	354	210	802	65	146	1323	779	109	1249	717
Arrive On Green	0.10	0.22	0.22	0.12	0.24	0.24	0.08	0.37	0.37	0.06	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3317	268	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	297	133	171	303	311	114	459	98	55	590	280
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1815	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.3	5.7	5.7	7.6	12.6	12.7	5.1	7.5	2.7	2.4	10.5	9.5
Cycle Q Clear(g_c), s	6.3	5.7	5.7	7.6	12.6	12.7	5.1	7.5	2.7	2.4	10.5	9.5
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	792	354	210	428	439	146	1323	779	109	1249	717
V/C Ratio(X)	0.80	0.38	0.38	0.82	0.71	0.71	0.78	0.35	0.13	0.50	0.47	0.39
Avail Cap(c_a), veh/h	297	1161	520	297	581	596	297	1323	779	297	1249	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	26.6	26.6	34.8	28.0	28.0	36.3	18.2	11.1	36.7	20.3	14.7
Incr Delay (d2), s/veh	7.9	0.3	0.7	11.3	2.5	2.5	8.7	0.7	0.3	3.6	1.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.8	2.6	4.4	6.4	6.6	2.9	3.8	1.2	1.3	5.3	4.5
LnGrp Delay(d),s/veh	43.4	26.9	27.2	46.0	30.5	30.5	45.0	18.9	11.4	40.3	21.6	16.3
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		571			785			671			925	
Approach Delay, s/veh		31.0			33.9			22.3			21.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	34.7	14.0	22.6	11.2	33.0	12.6	24.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.4	9.5	9.6	7.7	7.1	12.5	8.3	14.7
Green Ext Time (p_c), s	0.1	7.9	0.2	6.1	0.1	7.3	0.1	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

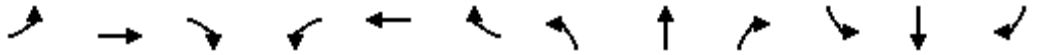
Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	620	0	0	841
Future Vol, veh/h	0	9	620	0	0	841
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	660	0	0	895

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1107	330	0	0	660	0
Stage 1	660	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	204	666	-	-	924	-
Stage 1	476	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	204	666	-	-	924	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	611	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	666	924	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	61	112	57	75	18	99	602	57	18	812	41
Future Volume (veh/h)	39	61	112	57	75	18	99	602	57	18	812	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	40	63	115	59	77	19	102	621	59	19	837	42
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	90	164	123	309	263	157	1701	761	55	1498	670
Arrive On Green	0.05	0.15	0.15	0.07	0.17	0.17	0.09	0.48	0.48	0.03	0.42	0.42
Sat Flow, veh/h	1774	592	1080	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	40	0	178	59	77	19	102	621	59	19	837	42
Grp Sat Flow(s),veh/h/ln	1774	0	1672	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.5	0.0	6.8	2.2	2.4	0.7	3.7	7.4	1.4	0.7	12.0	1.1
Cycle Q Clear(g_c), s	1.5	0.0	6.8	2.2	2.4	0.7	3.7	7.4	1.4	0.7	12.0	1.1
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	0	253	123	309	263	157	1701	761	55	1498	670
V/C Ratio(X)	0.41	0.00	0.70	0.48	0.25	0.07	0.65	0.36	0.08	0.34	0.56	0.06
Avail Cap(c_a), veh/h	356	0	658	356	733	623	356	1701	761	356	1498	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	0.0	27.1	30.2	24.4	23.7	29.7	11.0	9.4	31.9	14.7	11.5
Incr Delay (d2), s/veh	2.8	0.0	3.5	2.9	0.4	0.1	4.5	0.6	0.2	3.7	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.4	1.1	1.3	0.3	2.0	3.8	0.6	0.4	6.1	0.5
LnGrp Delay(d),s/veh	33.5	0.0	30.7	33.0	24.8	23.8	34.1	11.6	9.6	35.6	16.2	11.7
LnGrp LOS	C		C	C	C	C	C	B	A	D	B	B
Approach Vol, veh/h		218			155			782			898	
Approach Delay, s/veh		31.2			27.8			14.4			16.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	36.9	9.2	14.7	10.5	33.0	8.2	15.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	2.7	9.4	4.2	8.8	5.7	14.0	3.5	4.4
Green Ext Time (p_c), s	0.0	10.1	0.1	1.4	0.1	8.5	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	257	4	151	267	606	0	0	718	266
Future Volume (veh/h)	0	0	0	257	4	151	267	606	0	0	718	266
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				268	4	157	278	631	0	0	748	277
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				342	5	309	322	2460	0	0	1161	430
Arrive On Green				0.20	0.20	0.20	0.18	0.70	0.00	0.00	0.46	0.46
Sat Flow, veh/h				1749	26	1583	1774	3632	0	0	2623	937
Grp Volume(v), veh/h				272	0	157	278	631	0	0	523	502
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1697
Q Serve(g_s), s				12.0	0.0	7.3	12.5	5.4	0.0	0.0	18.7	18.7
Cycle Q Clear(g_c), s				12.0	0.0	7.3	12.5	5.4	0.0	0.0	18.7	18.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.55
Lane Grp Cap(c), veh/h				347	0	309	322	2460	0	0	812	779
V/C Ratio(X)				0.78	0.00	0.51	0.86	0.26	0.00	0.00	0.64	0.64
Avail Cap(c_a), veh/h				733	0	653	451	2460	0	0	812	779
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.4	0.0	29.5	32.6	4.6	0.0	0.0	17.1	17.1
Incr Delay (d2), s/veh				3.9	0.0	1.3	11.8	0.3	0.0	0.0	3.9	4.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.2	0.0	3.3	7.2	2.7	0.0	0.0	9.9	9.5
LnGrp Delay(d),s/veh				35.3	0.0	30.8	44.4	4.9	0.0	0.0	21.0	21.2
LnGrp LOS				D		C	D	A			C	C
Approach Vol, veh/h					429			909			1025	
Approach Delay, s/veh					33.7			17.0			21.1	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			19.4	42.2		20.6
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		7.4			14.5	20.7		14.0
Green Ext Time (p_c), s		16.4			0.4	7.4		2.1

Intersection Summary		
HCM 2010 Ctrl Delay		21.8
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	4	371	0	0	0	0	656	140	150	830	0
Future Volume (veh/h)	209	4	371	0	0	0	0	656	140	150	830	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	216	0	379				0	669	143	153	847	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	940	0	419				0	2039	430	193	2268	0
Arrive On Green	0.26	0.00	0.26				0.00	0.48	0.48	0.11	0.64	0.00
Sat Flow, veh/h	3548	0	1583				0	4376	888	1774	3632	0
Grp Volume(v), veh/h	216	0	379				0	537	275	153	847	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1706	1774	1770	0
Q Serve(g_s), s	4.5	0.0	22.1				0.0	9.3	9.4	8.0	10.8	0.0
Cycle Q Clear(g_c), s	4.5	0.0	22.1				0.0	9.3	9.4	8.0	10.8	0.0
Prop In Lane	1.00		1.00				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	940	0	419				0	1643	827	193	2268	0
V/C Ratio(X)	0.23	0.00	0.90				0.00	0.33	0.33	0.79	0.37	0.00
Avail Cap(c_a), veh/h	1112	0	496				0	1643	827	556	2268	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.4	0.0	33.9				0.0	15.1	15.1	41.4	8.1	0.0
Incr Delay (d2), s/veh	0.1	0.0	17.9				0.0	0.1	0.2	7.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	11.7				0.0	4.4	4.5	4.3	5.3	0.0
LnGrp Delay(d),s/veh	27.6	0.0	51.8				0.0	15.2	15.3	48.6	8.6	0.0
LnGrp LOS	C		D					B	B	D	A	
Approach Vol, veh/h		595						812			1000	
Approach Delay, s/veh		43.0						15.2			14.7	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.9	50.7		29.8		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	10.3	11.4		24.1		12.8		
Green Ext Time (p_c), s	0.4	9.4		1.2		16.6		

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	135	1	0	150	0	0	0	1	0	0	0
Future Vol, veh/h	0	135	1	0	150	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	148	1	0	165	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	165	0	0	149	0	0	231	314	75	239	314	82
Stage 1	-	-	-	-	-	-	149	149	-	165	165	-
Stage 2	-	-	-	-	-	-	82	165	-	74	149	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1411	-	-	1430	-	-	704	600	971	695	600	961
Stage 1	-	-	-	-	-	-	838	773	-	821	761	-
Stage 2	-	-	-	-	-	-	917	761	-	927	773	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1411	-	-	1430	-	-	704	600	971	694	600	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	704	600	-	694	600	-
Stage 1	-	-	-	-	-	-	838	773	-	821	761	-
Stage 2	-	-	-	-	-	-	917	761	-	926	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	971	1411	-	-	1430	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-
HCM Control Delay (s)	8.7	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	126	1	0	144	1	2	0	0	0	0	6
Future Vol, veh/h	11	126	1	0	144	1	2	0	0	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	147	1	0	167	1	2	0	0	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	169	0	0	148	0	0	341	342	74	267	341	168
Stage 1	-	-	-	-	-	-	173	173	-	168	168	-
Stage 2	-	-	-	-	-	-	168	169	-	99	173	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1407	-	-	1432	-	-	601	579	973	675	580	875
Stage 1	-	-	-	-	-	-	812	755	-	833	759	-
Stage 2	-	-	-	-	-	-	833	758	-	897	755	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1432	-	-	592	574	973	670	575	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	592	574	-	670	575	-
Stage 1	-	-	-	-	-	-	804	748	-	825	759	-
Stage 2	-	-	-	-	-	-	826	758	-	889	748	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	11.1	9.1
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	592	1407	-	-	1432	-	-	-	875
HCM Lane V/C Ratio	0.004	0.009	-	-	-	-	-	-	0.008
HCM Control Delay (s)	11.1	7.6	-	-	0	-	-	0	9.1
HCM Lane LOS	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	110	139	4	0	5
Future Vol, veh/h	16	110	139	4	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	131	165	5	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	170	0	-	0	337	168
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1407	-	-	-	658	876
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1407	-	-	-	648	876
Mov Cap-2 Maneuver	-	-	-	-	686	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1407	-	-	-	876
HCM Lane V/C Ratio	0.014	-	-	-	0.007
HCM Control Delay (s)	7.6	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	99	140	18	5	4
Future Vol, veh/h	12	99	140	18	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	110	156	20	6	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	176	0	-	0	303	166
Stage 1	-	-	-	-	166	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1400	-	-	-	689	878
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1400	-	-	-	682	878
Mov Cap-2 Maneuver	-	-	-	-	709	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	881	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1400	-	-	-	775
HCM Lane V/C Ratio	0.01	-	-	-	0.013
HCM Control Delay (s)	7.6	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	103	155	6	0	1
Future Vol, veh/h	0	103	155	6	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	120	180	7	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	184
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	858
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	858
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	858
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	9.2
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	104	157	4	0	6
Future Vol, veh/h	0	104	157	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	120	180	5	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	183
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	859
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	859
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	859
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	9.2
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	395	0	0	673	158	0	0	0	129	0	79
Future Volume (veh/h)	46	395	0	0	673	158	0	0	0	129	0	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	52	449	0	0	765	180	0	0	0	147	0	90
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	69	1568	0	0	1018	240	0	864	0	898	0	735
Arrive On Green	0.04	0.44	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.46	0.00	0.46
Sat Flow, veh/h	1774	3632	0	0	2938	669	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	52	449	0	0	476	469	0	0	0	147	0	90
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1745	0	1863	0	1774	0	1583
Q Serve(g_s), s	2.8	7.8	0.0	0.0	22.9	22.9	0.0	0.0	0.0	4.7	0.0	3.1
Cycle Q Clear(g_c), s	2.8	7.8	0.0	0.0	22.9	22.9	0.0	0.0	0.0	4.7	0.0	3.1
Prop In Lane	1.00		0.00	0.00		0.38	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1568	0	0	633	624	0	864	0	898	0	735
V/C Ratio(X)	0.75	0.29	0.00	0.00	0.75	0.75	0.00	0.00	0.00	0.16	0.00	0.12
Avail Cap(c_a), veh/h	91	1679	0	0	840	828	0	864	0	898	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.1	17.2	0.0	0.0	27.3	27.3	0.0	0.0	0.0	15.2	0.0	14.8
Incr Delay (d2), s/veh	21.7	0.1	0.0	0.0	2.7	2.7	0.0	0.0	0.0	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.8	0.0	0.0	11.6	11.4	0.0	0.0	0.0	2.4	0.0	1.4
LnGrp Delay(d),s/veh	67.8	17.3	0.0	0.0	30.0	30.1	0.0	0.0	0.0	15.6	0.0	15.1
LnGrp LOS	E	B			C	C				B		B
Approach Vol, veh/h		501			945			0			237	
Approach Delay, s/veh		22.6			30.1			0.0			15.4	
Approach LOS		C			C						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		47.5		49.5	8.3	39.2
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		0.0		9.8		6.7	4.8	24.9
Green Ext Time (p_c), s		0.0		12.2		1.0	0.0	9.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	368	124	90	619	84	120	126	56	93	144	80
Future Volume (veh/h)	32	368	124	90	619	84	120	126	56	93	144	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	38	438	148	107	737	100	143	150	67	111	171	95
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	688	230	137	916	124	179	675	574	142	637	541
Arrive On Green	0.05	0.26	0.26	0.08	0.29	0.29	0.10	0.36	0.36	0.08	0.34	0.34
Sat Flow, veh/h	1774	2606	873	1774	3133	425	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	38	296	290	107	416	421	143	150	67	111	171	95
Grp Sat Flow(s),veh/h/ln	1774	1770	1709	1774	1770	1788	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.7	12.3	12.5	4.9	18.1	18.2	6.6	4.7	2.3	5.1	5.5	3.5
Cycle Q Clear(g_c), s	1.7	12.3	12.5	4.9	18.1	18.2	6.6	4.7	2.3	5.1	5.5	3.5
Prop In Lane	1.00		0.51	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	87	467	451	137	517	523	179	675	574	142	637	541
V/C Ratio(X)	0.44	0.63	0.64	0.78	0.80	0.80	0.80	0.22	0.12	0.78	0.27	0.18
Avail Cap(c_a), veh/h	287	562	543	287	562	568	287	675	574	287	637	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	27.1	27.2	37.8	27.3	27.3	36.7	18.4	17.7	37.6	19.9	19.2
Incr Delay (d2), s/veh	3.4	1.7	1.9	9.1	7.8	7.7	8.0	0.8	0.4	8.9	1.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.2	6.1	2.8	9.9	10.0	3.6	2.5	1.1	2.8	3.0	1.6
LnGrp Delay(d),s/veh	41.9	28.8	29.1	46.8	35.1	35.0	44.7	19.2	18.1	46.5	20.9	19.9
LnGrp LOS	D	C	C	D	D	D	D	B	B	D	C	B
Approach Vol, veh/h		624			944			360			377	
Approach Delay, s/veh		29.7			36.4			29.1			28.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	34.7	11.0	26.5	12.9	33.0	8.6	28.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	7.1	6.7	6.9	14.5	8.6	7.5	3.7	20.2
Green Ext Time (p_c), s	0.1	2.3	0.1	6.8	0.1	2.3	0.0	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	73	26	51	77	59	36	210	49	43	299	22
Future Volume (veh/h)	9	73	26	51	77	59	36	210	49	43	299	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	91	32	64	96	74	45	262	61	54	374	28
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	233	78	234	129	99	102	638	149	170	813	61
Arrive On Green	0.09	0.09	0.09	0.13	0.13	0.13	0.06	0.44	0.44	0.10	0.47	0.47
Sat Flow, veh/h	1774	2602	876	1774	977	753	1774	1462	340	1774	1712	128
Grp Volume(v), veh/h	11	61	62	64	0	170	45	0	323	54	0	402
Grp Sat Flow(s),veh/h/ln	1774	1770	1708	1774	0	1730	1774	0	1803	1774	0	1840
Q Serve(g_s), s	0.4	2.4	2.5	2.4	0.0	6.9	1.8	0.0	9.0	2.1	0.0	10.7
Cycle Q Clear(g_c), s	0.4	2.4	2.5	2.4	0.0	6.9	1.8	0.0	9.0	2.1	0.0	10.7
Prop In Lane	1.00		0.51	1.00		0.44	1.00		0.19	1.00		0.07
Lane Grp Cap(c), veh/h	159	158	153	234	0	228	102	0	787	170	0	874
V/C Ratio(X)	0.07	0.38	0.41	0.27	0.00	0.74	0.44	0.00	0.41	0.32	0.00	0.46
Avail Cap(c_a), veh/h	488	487	470	488	0	476	172	0	787	488	0	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	31.4	31.4	28.6	0.0	30.5	33.3	0.0	14.1	30.8	0.0	12.9
Incr Delay (d2), s/veh	0.2	1.5	1.7	0.6	0.0	4.8	3.0	0.0	1.6	1.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.2	1.3	1.2	0.0	3.6	1.0	0.0	4.7	1.1	0.0	5.8
LnGrp Delay(d),s/veh	30.7	32.9	33.2	29.2	0.0	35.3	36.3	0.0	15.7	31.9	0.0	14.6
LnGrp LOS	C	C	C	C		D	D		B	C		B
Approach Vol, veh/h		134			234			368			456	
Approach Delay, s/veh		32.8			33.6			18.2			16.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	36.4		11.0	8.7	39.2		14.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	14.1	11.0		4.5	3.8	12.7		8.9
Green Ext Time (p_c), s	0.1	3.4		0.5	0.0	4.7		0.8

Intersection Summary		
HCM 2010 Ctrl Delay	22.3	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	164	67	20	222	34	82	199	59	57	225	87
Future Volume (veh/h)	50	164	67	20	222	34	82	199	59	57	225	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	56	184	75	22	249	38	92	224	66	64	253	98
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	459	180	62	469	71	152	817	750	129	793	781
Arrive On Green	0.07	0.18	0.18	0.04	0.15	0.15	0.09	0.44	0.44	0.07	0.43	0.43
Sat Flow, veh/h	1774	2484	976	1774	3085	465	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	56	129	130	22	141	146	92	224	66	64	253	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1690	1774	1770	1781	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.0	4.3	4.5	0.8	4.9	5.1	3.3	5.1	1.5	2.3	6.0	2.2
Cycle Q Clear(g_c), s	2.0	4.3	4.5	0.8	4.9	5.1	3.3	5.1	1.5	2.3	6.0	2.2
Prop In Lane	1.00		0.58	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	327	312	62	269	271	152	817	750	129	793	781
V/C Ratio(X)	0.47	0.40	0.42	0.35	0.53	0.54	0.61	0.27	0.09	0.50	0.32	0.13
Avail Cap(c_a), veh/h	358	700	669	358	700	705	358	817	750	358	793	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	24.0	24.1	31.6	26.2	26.2	29.5	12.0	9.7	29.9	12.8	9.2
Incr Delay (d2), s/veh	2.8	0.8	0.9	3.4	1.6	1.7	3.8	0.8	0.2	2.9	1.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.2	2.2	0.5	2.5	2.6	1.8	2.8	0.7	1.2	3.3	1.0
LnGrp Delay(d),s/veh	32.8	24.8	25.0	34.9	27.7	27.9	33.4	12.8	9.9	32.8	13.8	9.5
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		315			309			382			415	
Approach Delay, s/veh		26.3			28.3			17.3			15.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	33.9	6.9	16.9	10.2	33.0	9.0	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.3	7.1	2.8	6.5	5.3	8.0	4.0	7.1
Green Ext Time (p_c), s	0.1	3.4	0.0	3.2	0.1	3.3	0.1	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	441	120	97	312	40	157	659	185	74	517	206
Future Volume (veh/h)	227	441	120	97	312	40	157	659	185	74	517	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	232	450	122	99	318	41	160	672	189	76	528	210
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	269	905	405	134	567	72	197	1357	727	123	1210	781
Arrive On Green	0.15	0.26	0.26	0.08	0.18	0.18	0.11	0.38	0.38	0.07	0.34	0.34
Sat Flow, veh/h	1774	3539	1583	1774	3157	404	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	232	450	122	99	177	182	160	672	189	76	528	210
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1792	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	10.6	9.0	5.2	4.6	7.6	7.7	7.3	12.0	6.1	3.5	9.6	6.5
Cycle Q Clear(g_c), s	10.6	9.0	5.2	4.6	7.6	7.7	7.3	12.0	6.1	3.5	9.6	6.5
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	905	405	134	318	321	197	1357	727	123	1210	781
V/C Ratio(X)	0.86	0.50	0.30	0.74	0.56	0.57	0.81	0.50	0.26	0.62	0.44	0.27
Avail Cap(c_a), veh/h	287	1125	503	287	563	570	287	1357	727	287	1210	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	26.5	25.0	37.7	31.2	31.2	36.2	19.6	13.9	37.7	21.2	12.3
Incr Delay (d2), s/veh	21.7	0.4	0.4	7.7	1.5	1.6	10.7	1.3	0.9	4.9	1.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.5	2.3	2.5	3.8	4.0	4.2	6.1	2.8	1.9	4.9	3.0
LnGrp Delay(d),s/veh	56.2	26.9	25.4	45.5	32.7	32.8	46.9	20.9	14.7	42.6	22.4	13.2
LnGrp LOS	E	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		804			458			1021			814	
Approach Delay, s/veh		35.1			35.5			23.8			21.9	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	36.5	10.8	25.8	13.8	33.0	17.1	19.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	5.5	14.0	6.6	11.0	9.3	11.6	12.6	9.7
Green Ext Time (p_c), s	0.1	7.8	0.1	5.0	0.1	8.5	0.1	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1001	0	0	733
Future Vol, veh/h	0	0	1001	0	0	733
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1021	0	0	748

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1320	511	0	0	1021	0
Stage 1	1021	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	178	508	-	-	675	-
Stage 1	301	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	178	508	-	-	675	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	301	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	675	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	89	159	82	75	30	132	966	109	24	696	44
Future Volume (veh/h)	56	89	159	82	75	30	132	966	109	24	696	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	90	161	83	76	30	133	976	110	24	703	44
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	116	208	138	383	326	170	1582	708	65	1373	614
Arrive On Green	0.07	0.19	0.19	0.08	0.21	0.21	0.10	0.45	0.45	0.04	0.39	0.39
Sat Flow, veh/h	1774	600	1073	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	0	251	83	76	30	133	976	110	24	703	44
Grp Sat Flow(s),veh/h/ln	1774	0	1673	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	0.0	10.5	3.3	2.5	1.1	5.4	15.5	3.0	1.0	11.1	1.3
Cycle Q Clear(g_c), s	2.3	0.0	10.5	3.3	2.5	1.1	5.4	15.5	3.0	1.0	11.1	1.3
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	0	324	138	383	326	170	1582	708	65	1373	614
V/C Ratio(X)	0.49	0.00	0.78	0.60	0.20	0.09	0.78	0.62	0.16	0.37	0.51	0.07
Avail Cap(c_a), veh/h	326	0	604	326	672	571	326	1582	708	326	1373	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	28.1	32.8	24.2	23.6	32.5	15.5	12.1	34.5	17.2	14.1
Incr Delay (d2), s/veh	3.2	0.0	4.0	4.2	0.3	0.1	7.7	1.8	0.5	3.4	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	5.2	1.8	1.3	0.5	3.0	7.9	1.4	0.5	5.6	0.6
LnGrp Delay(d),s/veh	36.3	0.0	32.1	36.9	24.4	23.7	40.1	17.3	12.5	37.9	18.5	14.4
LnGrp LOS	D		C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		308			189			1219			771	
Approach Delay, s/veh		32.9			29.8			19.4			18.9	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	37.3	10.2	18.7	11.5	33.0	9.3	19.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	3.0	17.5	5.3	12.5	7.4	13.1	4.3	4.5
Green Ext Time (p_c), s	0.0	7.9	0.1	1.7	0.1	10.1	0.1	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	197	4	154	342	1061	0	0	709	232
Future Volume (veh/h)	0	0	0	197	4	154	342	1061	0	0	709	232
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				205	4	160	356	1105	0	0	739	242
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				278	5	253	399	2569	0	0	1163	381
Arrive On Green				0.16	0.16	0.16	0.23	0.73	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1742	34	1583	1774	3632	0	0	2715	859
Grp Volume(v), veh/h				209	0	160	356	1105	0	0	499	482
Grp Sat Flow(s),veh/h/ln				1776	0	1583	1774	1770	0	0	1770	1711
Q Serve(g_s), s				8.8	0.0	7.4	15.3	9.8	0.0	0.0	17.2	17.2
Cycle Q Clear(g_c), s				8.8	0.0	7.4	15.3	9.8	0.0	0.0	17.2	17.2
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.50
Lane Grp Cap(c), veh/h				284	0	253	399	2569	0	0	785	759
V/C Ratio(X)				0.74	0.00	0.63	0.89	0.43	0.00	0.00	0.64	0.64
Avail Cap(c_a), veh/h				765	0	682	471	2569	0	0	785	759
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.5	0.0	30.9	29.6	4.3	0.0	0.0	17.0	17.0
Incr Delay (d2), s/veh				3.7	0.0	2.6	17.0	0.5	0.0	0.0	3.9	4.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.6	0.0	3.4	9.4	4.8	0.0	0.0	9.2	8.9
LnGrp Delay(d),s/veh				35.2	0.0	33.5	46.5	4.8	0.0	0.0	20.9	21.0
LnGrp LOS				D		C	D	A			C	C
Approach Vol, veh/h					369			1461			981	
Approach Delay, s/veh					34.5			15.0			20.9	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			22.2	39.4		17.1
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		11.8			17.3	19.2		10.8
Green Ext Time (p_c), s		23.0			0.4	9.7		1.8

Intersection Summary		
HCM 2010 Ctrl Delay		19.6
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	472	3	334	0	0	0	0	941	252	161	751	0
Future Volume (veh/h)	472	3	334	0	0	0	0	941	252	161	751	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	494	0	348				0	980	262	168	782	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	903	0	403				0	1936	516	209	2300	0
Arrive On Green	0.25	0.00	0.25				0.00	0.48	0.48	0.12	0.65	0.00
Sat Flow, veh/h	3548	0	1583				0	4166	1067	1774	3632	0
Grp Volume(v), veh/h	494	0	348				0	831	411	168	782	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1674	1774	1770	0
Q Serve(g_s), s	11.3	0.0	19.7				0.0	15.7	15.8	8.7	9.3	0.0
Cycle Q Clear(g_c), s	11.3	0.0	19.7				0.0	15.7	15.8	8.7	9.3	0.0
Prop In Lane	1.00		1.00				0.00		0.64	1.00		0.00
Lane Grp Cap(c), veh/h	903	0	403				0	1641	811	209	2300	0
V/C Ratio(X)	0.55	0.00	0.86				0.00	0.51	0.51	0.80	0.34	0.00
Avail Cap(c_a), veh/h	1128	0	504				0	1641	811	564	2300	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.4	0.0	33.5				0.0	16.6	16.6	40.4	7.4	0.0
Incr Delay (d2), s/veh	0.5	0.0	12.2				0.0	0.3	0.5	7.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	10.0				0.0	7.4	7.4	4.7	4.7	0.0
LnGrp Delay(d),s/veh	30.9	0.0	45.7				0.0	16.8	17.1	47.4	7.8	0.0
LnGrp LOS	C		D					B	B	D	A	
Approach Vol, veh/h		842						1242			950	
Approach Delay, s/veh		37.0						16.9			14.8	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.6	50.0		28.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.9	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	10.7	17.8		21.7		11.3		
Green Ext Time (p_c), s	0.4	7.1		2.2		22.8		

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑			⇳			⇳	
Traffic Vol, veh/h	0	231	17	0	193	0	0	0	22	0	0	0
Future Vol, veh/h	0	231	17	0	193	0	0	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	246	18	0	205	0	0	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	460	460	132	303	469	205
Stage 1	-	-	-	-	-	-	255	255	-	205	205	-
Stage 2	-	-	-	-	-	-	205	205	-	98	264	-
Critical Hdwy	-	-	-	-	-	-	6.78	6.53	7.13	6.78	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	7.33	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.73	5.53	-
Follow-up Hdwy	-	-	-	-	-	-	3.669	4.019	3.919	3.669	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	517	497	759	645	491	835
Stage 1	0	-	-	0	-	0	663	696	-	767	731	-
Stage 2	0	-	-	0	-	0	767	731	-	858	689	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	517	497	759	625	491	835
Mov Cap-2 Maneuver	-	-	-	-	-	-	517	497	-	625	491	-
Stage 1	-	-	-	-	-	-	663	696	-	767	731	-
Stage 2	-	-	-	-	-	-	767	731	-	832	689	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	759	-	-	-	-
HCM Lane V/C Ratio	0.031	-	-	-	-
HCM Control Delay (s)	9.9	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	208	4	4	147	5	2	2	0	7	0	35
Future Vol, veh/h	45	208	4	4	147	5	2	2	0	7	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	236	5	5	167	6	2	2	0	8	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	173	0	0	241	0	0	520	523	120	401	522	170
Stage 1	-	-	-	-	-	-	341	341	-	179	179	-
Stage 2	-	-	-	-	-	-	179	182	-	222	343	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1402	-	-	1324	-	-	453	458	909	547	459	873
Stage 1	-	-	-	-	-	-	648	638	-	822	751	-
Stage 2	-	-	-	-	-	-	822	748	-	761	637	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1402	-	-	1324	-	-	419	440	909	528	441	873
Mov Cap-2 Maneuver	-	-	-	-	-	-	419	440	-	528	441	-
Stage 1	-	-	-	-	-	-	624	615	-	792	748	-
Stage 2	-	-	-	-	-	-	782	745	-	731	614	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	13.5	9.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	429	1402	-	-	1324	-	-	528	873
HCM Lane V/C Ratio	0.011	0.036	-	-	0.003	-	-	0.015	0.046
HCM Control Delay (s)	13.5	7.7	-	-	7.7	-	-	11.9	9.3
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	206	147	7	10	10
Future Vol, veh/h	11	206	147	7	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	226	162	8	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	169	0	-	0	416	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1409	-	-	-	593	879
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1409	-	-	-	587	879
Mov Cap-2 Maneuver	-	-	-	-	641	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	783	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1409	-	-	-	741
HCM Lane V/C Ratio	0.009	-	-	-	0.03
HCM Control Delay (s)	7.6	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	199	140	9	25	16
Future Vol, veh/h	14	199	140	9	25	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	219	154	10	27	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	164	0	-	0	408	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1414	-	-	-	599	886
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1414	-	-	-	592	886
Mov Cap-2 Maneuver	-	-	-	-	643	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	782	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1414	-	-	-	720
HCM Lane V/C Ratio	0.011	-	-	-	0.063
HCM Control Delay (s)	7.6	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	224	142	20	0	7
Future Vol, veh/h	1	224	142	20	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	241	153	22	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	174	0	-	0	-	163
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1403	-	-	-	0	882
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1403	-	-	-	-	882
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1403	-	-	-	882
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s)	7.6	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	224	153	8	0	9
Future Vol, veh/h	0	224	153	8	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	238	163	9	0	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	167
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	877
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	877
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	877
HCM Lane V/C Ratio	-	-	-	0.011
HCM Control Delay (s)	-	-	-	9.2
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	611	0	0	388	48	0	0	0	65	0	47
Future Volume (veh/h)	85	611	0	0	388	48	0	0	0	65	0	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	98	702	0	0	446	55	0	0	0	75	0	54
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	82	1778	0	0	1316	162	0	773	0	802	0	657
Arrive On Green	0.05	0.50	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1774	3632	0	0	3267	390	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	98	702	0	0	248	253	0	0	0	75	0	54
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1794	0	1863	0	1774	0	1583
Q Serve(g_s), s	5.0	13.4	0.0	0.0	10.3	10.4	0.0	0.0	0.0	2.8	0.0	2.2
Cycle Q Clear(g_c), s	5.0	13.4	0.0	0.0	10.3	10.4	0.0	0.0	0.0	2.8	0.0	2.2
Prop In Lane	1.00		0.00	0.00		0.22	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	1778	0	0	734	744	0	773	0	802	0	657
V/C Ratio(X)	1.20	0.39	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.09	0.00	0.08
Avail Cap(c_a), veh/h	82	1778	0	0	734	744	0	773	0	802	0	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	16.8	0.0	0.0	21.6	21.6	0.0	0.0	0.0	19.4	0.0	19.2
Incr Delay (d2), s/veh	162.5	0.7	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	6.7	0.0	0.0	5.3	5.4	0.0	0.0	0.0	1.4	0.0	1.0
LnGrp Delay(d),s/veh	214.3	17.4	0.0	0.0	22.9	22.9	0.0	0.0	0.0	19.6	0.0	19.5
LnGrp LOS	F	B			C	C				B		B
Approach Vol, veh/h		800			501			0			129	
Approach Delay, s/veh		41.5			22.9			0.0			19.6	
Approach LOS		D			C						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		59.0		49.5	9.5	49.5		49.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		45.0		45.0	5.0	45.0		45.0
Max Q Clear Time (g_c+I1), s		15.4		4.8	7.0	12.4		0.0
Green Ext Time (p_c), s		9.5		0.5	0.0	9.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	471	85	46	320	53	61	120	122	58	79	65
Future Volume (veh/h)	87	471	85	46	320	53	61	120	122	58	79	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	95	512	92	50	348	58	66	130	133	63	86	71
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	750	134	107	699	115	124	711	604	121	708	602
Arrive On Green	0.08	0.25	0.25	0.06	0.23	0.23	0.07	0.38	0.38	0.07	0.38	0.38
Sat Flow, veh/h	1774	3001	537	1774	3042	502	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	95	301	303	50	201	205	66	130	133	63	86	71
Grp Sat Flow(s),veh/h/ln	1774	1770	1768	1774	1770	1774	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.9	11.5	11.6	2.0	7.4	7.5	2.7	3.5	4.3	2.6	2.3	2.2
Cycle Q Clear(g_c), s	3.9	11.5	11.6	2.0	7.4	7.5	2.7	3.5	4.3	2.6	2.3	2.2
Prop In Lane	1.00		0.30	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	442	442	107	407	408	124	711	604	121	708	602
V/C Ratio(X)	0.67	0.68	0.69	0.47	0.49	0.50	0.53	0.18	0.22	0.52	0.12	0.12
Avail Cap(c_a), veh/h	319	625	625	319	625	627	319	711	604	319	708	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	25.4	25.5	34.1	25.1	25.2	33.7	15.4	15.7	33.8	15.1	15.1
Incr Delay (d2), s/veh	5.2	1.9	1.9	3.1	0.9	1.0	3.5	0.6	0.8	3.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.8	5.9	1.1	3.7	3.8	1.4	1.9	2.0	1.4	1.2	1.0
LnGrp Delay(d),s/veh	38.7	27.3	27.4	37.2	26.0	26.1	37.2	16.0	16.5	37.2	15.5	15.5
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		699			456			329			220	
Approach Delay, s/veh		28.9			27.3			20.5			21.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	33.1	9.0	23.2	9.7	33.0	10.5	21.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.6	6.3	4.0	13.6	4.7	4.3	5.9	9.5
Green Ext Time (p_c), s	0.1	1.9	0.0	5.1	0.1	1.9	0.1	5.9

Intersection Summary		
HCM 2010 Ctrl Delay		25.9
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	137	52	41	70	22	50	260	86	16	189	14
Future Volume (veh/h)	37	137	52	41	70	22	50	260	86	16	189	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	39	144	55	43	74	23	53	274	91	17	199	15
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	249	91	164	126	39	114	611	203	175	840	63
Arrive On Green	0.10	0.10	0.10	0.09	0.09	0.09	0.06	0.46	0.46	0.10	0.49	0.49
Sat Flow, veh/h	1774	2537	931	1774	1364	424	1774	1339	445	1774	1711	129
Grp Volume(v), veh/h	39	99	100	43	0	97	53	0	365	17	0	214
Grp Sat Flow(s),veh/h/ln	1774	1770	1698	1774	0	1788	1774	0	1784	1774	0	1840
Q Serve(g_s), s	1.4	3.8	4.0	1.6	0.0	3.7	2.0	0.0	9.9	0.6	0.0	4.7
Cycle Q Clear(g_c), s	1.4	3.8	4.0	1.6	0.0	3.7	2.0	0.0	9.9	0.6	0.0	4.7
Prop In Lane	1.00		0.55	1.00		0.24	1.00		0.25	1.00		0.07
Lane Grp Cap(c), veh/h	174	174	167	164	0	166	114	0	814	175	0	903
V/C Ratio(X)	0.22	0.57	0.60	0.26	0.00	0.59	0.47	0.00	0.45	0.10	0.00	0.24
Avail Cap(c_a), veh/h	504	503	483	504	0	508	178	0	814	504	0	903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	30.5	30.6	29.8	0.0	30.8	31.9	0.0	13.1	29.0	0.0	10.4
Incr Delay (d2), s/veh	0.6	2.9	3.5	0.8	0.0	3.3	3.0	0.0	1.8	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.0	2.0	0.8	0.0	2.0	1.1	0.0	5.3	0.3	0.0	2.5
LnGrp Delay(d),s/veh	30.1	33.4	34.0	30.7	0.0	34.0	34.9	0.0	14.9	29.2	0.0	11.0
LnGrp LOS	C	C	C	C		C	C		B	C		B
Approach Vol, veh/h		238			140			418			231	
Approach Delay, s/veh		33.1			33.0			17.5			12.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	36.8		11.4	9.0	39.2		11.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	12.6	11.9		6.0	4.0	6.7		5.7
Green Ext Time (p_c), s	0.0	2.5		1.0	0.0	3.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	520	113	44	257	45	91	208	74	61	132	64
Future Volume (veh/h)	154	520	113	44	257	45	91	208	74	61	132	64
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	160	542	118	46	268	47	95	217	77	64	138	67
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	746	162	101	611	106	140	713	696	120	692	766
Arrive On Green	0.11	0.26	0.26	0.06	0.20	0.20	0.08	0.38	0.38	0.07	0.37	0.37
Sat Flow, veh/h	1774	2894	628	1774	3018	522	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	160	331	329	46	156	159	95	217	77	64	138	67
Grp Sat Flow(s),veh/h/ln	1774	1770	1752	1774	1770	1771	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	6.8	13.1	13.2	1.9	5.9	6.1	4.0	6.2	2.2	2.7	3.9	1.8
Cycle Q Clear(g_c), s	6.8	13.1	13.2	1.9	5.9	6.1	4.0	6.2	2.2	2.7	3.9	1.8
Prop In Lane	1.00		0.36	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	456	452	101	358	359	140	713	696	120	692	766
V/C Ratio(X)	0.80	0.72	0.73	0.45	0.43	0.44	0.68	0.30	0.11	0.53	0.20	0.09
Avail Cap(c_a), veh/h	312	611	605	312	611	611	312	713	696	312	692	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	26.0	26.0	35.0	26.8	26.8	34.4	16.5	12.7	34.6	16.4	10.7
Incr Delay (d2), s/veh	8.0	2.8	3.0	3.2	0.8	0.9	5.6	1.1	0.3	3.6	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.7	6.7	1.0	3.0	3.1	2.2	3.4	1.0	1.4	2.1	0.8
LnGrp Delay(d),s/veh	41.2	28.8	29.0	38.2	27.6	27.7	39.9	17.7	13.0	38.2	17.0	10.9
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		820			361			389			269	
Approach Delay, s/veh		31.3			29.0			22.2			20.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	33.9	8.9	24.3	10.6	33.0	13.1	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.7	8.2	3.9	15.2	6.0	5.9	8.8	8.1
Green Ext Time (p_c), s	0.1	2.5	0.0	4.6	0.1	2.5	0.2	5.9

Intersection Summary		
HCM 2010 Ctrl Delay		27.3
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	279	125	161	534	43	107	431	92	52	555	263
Future Volume (veh/h)	133	279	125	161	534	43	107	431	92	52	555	263
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	297	133	171	568	46	114	459	98	55	590	280
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	792	354	210	802	65	146	1323	779	109	1249	717
Arrive On Green	0.10	0.22	0.22	0.12	0.24	0.24	0.08	0.37	0.37	0.06	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3317	268	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	297	133	171	303	311	114	459	98	55	590	280
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1815	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.3	5.7	5.7	7.6	12.6	12.7	5.1	7.5	2.7	2.4	10.5	9.5
Cycle Q Clear(g_c), s	6.3	5.7	5.7	7.6	12.6	12.7	5.1	7.5	2.7	2.4	10.5	9.5
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	792	354	210	428	439	146	1323	779	109	1249	717
V/C Ratio(X)	0.80	0.38	0.38	0.82	0.71	0.71	0.78	0.35	0.13	0.50	0.47	0.39
Avail Cap(c_a), veh/h	297	1161	520	297	581	596	297	1323	779	297	1249	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	26.6	26.6	34.8	28.0	28.0	36.3	18.2	11.1	36.7	20.3	14.7
Incr Delay (d2), s/veh	7.9	0.3	0.7	11.3	2.5	2.5	8.7	0.7	0.3	3.6	1.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.8	2.6	4.4	6.4	6.6	2.9	3.8	1.2	1.3	5.3	4.5
LnGrp Delay(d),s/veh	43.4	26.9	27.2	46.0	30.5	30.5	45.0	18.9	11.4	40.3	21.6	16.3
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		571			785			671			925	
Approach Delay, s/veh		31.0			33.9			22.3			21.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	34.7	14.0	22.6	11.2	33.0	12.6	24.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.4	9.5	9.6	7.7	7.1	12.5	8.3	14.7
Green Ext Time (p_c), s	0.1	7.9	0.2	6.1	0.1	7.3	0.1	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	620	0	0	841
Future Vol, veh/h	0	9	620	0	0	841
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	660	0	0	895

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1107	330	0	0	660	0
Stage 1	660	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	204	666	-	-	924	-
Stage 1	476	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	204	666	-	-	924	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	611	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	666	924	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

HCM 2010 Signalized Intersection Summary
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	50	112	50	64	4	99	602	78	16	812	41
Future Volume (veh/h)	39	50	112	50	64	4	99	602	78	16	812	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	40	52	115	52	66	4	102	621	80	16	837	42
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	74	164	115	287	244	159	1743	780	48	1522	681
Arrive On Green	0.06	0.14	0.14	0.07	0.15	0.15	0.09	0.49	0.49	0.03	0.43	0.43
Sat Flow, veh/h	1774	517	1144	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	40	0	167	52	66	4	102	621	80	16	837	42
Grp Sat Flow(s),veh/h/ln	1774	0	1661	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.4	0.0	6.3	1.9	2.1	0.1	3.7	7.2	1.8	0.6	11.7	1.0
Cycle Q Clear(g_c), s	1.4	0.0	6.3	1.9	2.1	0.1	3.7	7.2	1.8	0.6	11.7	1.0
Prop In Lane	1.00		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	0	239	115	287	244	159	1743	780	48	1522	681
V/C Ratio(X)	0.41	0.00	0.70	0.45	0.23	0.02	0.64	0.36	0.10	0.33	0.55	0.06
Avail Cap(c_a), veh/h	361	0	664	361	745	633	361	1743	780	361	1522	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	27.0	29.8	24.6	23.8	29.1	10.3	9.0	31.7	14.1	11.1
Incr Delay (d2), s/veh	2.7	0.0	3.7	2.7	0.4	0.0	4.3	0.6	0.3	4.0	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.2	1.0	1.1	0.1	2.0	3.6	0.8	0.3	6.0	0.5
LnGrp Delay(d),s/veh	33.0	0.0	30.7	32.6	25.0	23.8	33.4	10.9	9.2	35.7	15.5	11.2
LnGrp LOS	C		C	C	C	C	C	B	A	D	B	B
Approach Vol, veh/h		207			122			803			895	
Approach Delay, s/veh		31.1			28.2			13.6			15.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	37.1	8.8	14.0	10.4	33.0	8.1	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	2.6	9.2	3.9	8.3	5.7	13.7	3.4	4.1
Green Ext Time (p_c), s	0.0	10.2	0.1	1.2	0.1	8.7	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
4: Heacock St & SR 60 WB Ramp

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	257	4	160	267	618	0	0	711	266
Future Volume (veh/h)	0	0	0	257	4	160	267	618	0	0	711	266
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				268	4	167	278	644	0	0	741	277
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				342	5	310	322	2459	0	0	1157	432
Arrive On Green				0.20	0.20	0.20	0.18	0.69	0.00	0.00	0.46	0.46
Sat Flow, veh/h				1749	26	1583	1774	3632	0	0	2616	943
Grp Volume(v), veh/h				272	0	167	278	644	0	0	520	498
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1696
Q Serve(g_s), s				12.0	0.0	7.8	12.5	5.6	0.0	0.0	18.5	18.5
Cycle Q Clear(g_c), s				12.0	0.0	7.8	12.5	5.6	0.0	0.0	18.5	18.5
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.56
Lane Grp Cap(c), veh/h				348	0	310	322	2459	0	0	811	778
V/C Ratio(X)				0.78	0.00	0.54	0.86	0.26	0.00	0.00	0.64	0.64
Avail Cap(c_a), veh/h				732	0	653	451	2459	0	0	811	778
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.4	0.0	29.7	32.7	4.7	0.0	0.0	17.1	17.1
Incr Delay (d2), s/veh				3.9	0.0	1.5	11.8	0.3	0.0	0.0	3.9	4.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.2	0.0	3.5	7.2	2.8	0.0	0.0	9.8	9.5
LnGrp Delay(d),s/veh				35.3	0.0	31.2	44.5	4.9	0.0	0.0	20.9	21.1
LnGrp LOS				D		C	D	A			C	C
Approach Vol, veh/h					439			922			1018	
Approach Delay, s/veh					33.7			16.9			21.0	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			19.4	42.2		20.6
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		7.6			14.5	20.5		14.0
Green Ext Time (p_c), s		16.5			0.4	7.5		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	4	371	0	0	0	0	655	140	147	826	0
Future Volume (veh/h)	222	4	371	0	0	0	0	655	140	147	826	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	230	0	379				0	668	143	150	843	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	941	0	420				0	2045	432	190	2267	0
Arrive On Green	0.27	0.00	0.27				0.00	0.49	0.49	0.11	0.64	0.00
Sat Flow, veh/h	3548	0	1583				0	4375	889	1774	3632	0
Grp Volume(v), veh/h	230	0	379				0	536	275	150	843	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1706	1774	1770	0
Q Serve(g_s), s	4.9	0.0	22.1				0.0	9.2	9.4	7.9	10.7	0.0
Cycle Q Clear(g_c), s	4.9	0.0	22.1				0.0	9.2	9.4	7.9	10.7	0.0
Prop In Lane	1.00		1.00				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	941	0	420				0	1648	829	190	2267	0
V/C Ratio(X)	0.24	0.00	0.90				0.00	0.33	0.33	0.79	0.37	0.00
Avail Cap(c_a), veh/h	1112	0	496				0	1648	829	556	2267	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.5	0.0	33.9				0.0	15.0	15.0	41.5	8.1	0.0
Incr Delay (d2), s/veh	0.1	0.0	17.8				0.0	0.1	0.2	7.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	11.7				0.0	4.3	4.5	4.2	5.3	0.0
LnGrp Delay(d),s/veh	27.7	0.0	51.7				0.0	15.1	15.2	48.6	8.6	0.0
LnGrp LOS	C		D					B	B	D	A	
Approach Vol, veh/h		609						811			993	
Approach Delay, s/veh		42.6						15.1			14.6	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.7	50.9		29.8		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	10.9	11.4		24.1		12.7		
Green Ext Time (p_c), s	0.4	9.4		1.2		16.5		

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	143	1	0	265	0	0	0	1	0	0	0
Future Vol, veh/h	0	143	1	0	265	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	157	1	0	291	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	291	0	0	158	0	0	304	449	79	370	449	146
Stage 1	-	-	-	-	-	-	158	158	-	291	291	-
Stage 2	-	-	-	-	-	-	146	291	-	79	158	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1268	-	-	1419	-	-	625	504	965	562	504	875
Stage 1	-	-	-	-	-	-	828	766	-	693	670	-
Stage 2	-	-	-	-	-	-	842	670	-	921	766	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1268	-	-	1419	-	-	625	504	965	561	504	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	625	504	-	561	504	-
Stage 1	-	-	-	-	-	-	828	766	-	693	670	-
Stage 2	-	-	-	-	-	-	842	670	-	920	766	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	965	1268	-	-	1419	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-
HCM Control Delay (s)	8.7	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	192	42	3	183	5	28	0	3	4	0	57
Future Vol, veh/h	105	192	42	3	183	5	28	0	3	4	0	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	122	223	49	3	213	6	33	0	3	5	0	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	219	0	0	272	0	0	715	718	136	579	739	216
Stage 1	-	-	-	-	-	-	492	492	-	223	223	-
Stage 2	-	-	-	-	-	-	223	226	-	356	516	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1349	-	-	1290	-	-	332	354	888	412	344	823
Stage 1	-	-	-	-	-	-	528	547	-	779	718	-
Stage 2	-	-	-	-	-	-	779	716	-	635	533	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	1290	-	-	284	321	888	381	312	823
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	321	-	381	312	-
Stage 1	-	-	-	-	-	-	480	498	-	709	716	-
Stage 2	-	-	-	-	-	-	715	714	-	575	485	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.1	18.4	10.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	304	1349	-	-	1290	-	-	381	823
HCM Lane V/C Ratio	0.119	0.091	-	-	0.003	-	-	0.012	0.081
HCM Control Delay (s)	18.4	7.9	-	-	7.8	-	-	14.6	9.8
HCM Lane LOS	C	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.4	0.3	-	-	0	-	-	0	0.3

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	182	184	4	0	5
Future Vol, veh/h	16	182	184	4	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	217	219	5	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	224	0	-	0	476	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1345	-	-	-	548	819
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1345	-	-	-	539	819
Mov Cap-2 Maneuver	-	-	-	-	608	-
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1345	-	-	-	819
HCM Lane V/C Ratio	0.014	-	-	-	0.007
HCM Control Delay (s)	7.7	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	95	136	36	18	53
Future Vol, veh/h	88	95	136	36	18	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	106	151	40	20	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	191	0	-	0	472	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1383	-	-	-	551	873
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	751	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1383	-	-	-	510	873
Mov Cap-2 Maneuver	-	-	-	-	576	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1383	-	-	-	772
HCM Lane V/C Ratio	0.071	-	-	-	0.102
HCM Control Delay (s)	7.8	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	108	3	22	165	32	3	0	15	16	0	3
Future Vol, veh/h	2	108	3	22	165	32	3	0	15	16	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	126	3	26	192	37	3	0	17	19	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	229	0	0	129	0	0	395	412	127	403	396	210
Stage 1	-	-	-	-	-	-	132	132	-	262	262	-
Stage 2	-	-	-	-	-	-	263	280	-	141	134	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1339	-	-	1457	-	-	565	530	923	558	541	830
Stage 1	-	-	-	-	-	-	871	787	-	743	691	-
Stage 2	-	-	-	-	-	-	742	679	-	862	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1457	-	-	553	518	923	538	529	830
Mov Cap-2 Maneuver	-	-	-	-	-	-	553	518	-	538	529	-
Stage 1	-	-	-	-	-	-	869	785	-	742	676	-
Stage 2	-	-	-	-	-	-	723	665	-	844	783	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	9.5	11.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	830	1339	-	-	1457	-	-	570
HCM Lane V/C Ratio	0.025	0.002	-	-	0.018	-	-	0.039
HCM Control Delay (s)	9.5	7.7	0	-	7.5	0	-	11.6
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	139	140	4	0	6
Future Vol, veh/h	0	139	140	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	160	161	5	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	163
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	882
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	882
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	882
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	9.1
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	394	11	11	672	158	7	0	7	129	0	79
Future Volume (veh/h)	46	394	11	11	672	158	7	0	7	129	0	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	52	448	12	12	764	180	8	0	8	147	0	90
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1576	42	44	1004	234	361	18	323	731	0	729
Arrive On Green	0.04	0.45	0.45	0.36	0.36	0.36	0.46	0.00	0.46	0.46	0.00	0.46
Sat Flow, veh/h	1774	3522	94	16	2766	646	664	38	702	1402	0	1583
Grp Volume(v), veh/h	52	225	235	515	0	441	16	0	0	147	0	90
Grp Sat Flow(s),veh/h/ln	1774	1770	1846	1846	0	1581	1404	0	0	1402	0	1583
Q Serve(g_s), s	2.8	7.9	7.9	2.0	0.0	24.1	0.0	0.0	0.0	2.0	0.0	3.2
Cycle Q Clear(g_c), s	2.8	7.9	7.9	23.9	0.0	24.1	3.2	0.0	0.0	5.2	0.0	3.2
Prop In Lane	1.00		0.05	0.02		0.41	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	69	792	826	708	0	574	701	0	0	731	0	729
V/C Ratio(X)	0.76	0.28	0.28	0.73	0.00	0.77	0.02	0.00	0.00	0.20	0.00	0.12
Avail Cap(c_a), veh/h	91	833	869	904	0	744	701	0	0	731	0	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.5	17.1	17.1	27.4	0.0	27.5	14.4	0.0	0.0	15.6	0.0	15.1
Incr Delay (d2), s/veh	22.5	0.2	0.2	2.2	0.0	3.6	0.1	0.0	0.0	0.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.9	4.0	12.6	0.0	11.0	0.2	0.0	0.0	2.5	0.0	1.4
LnGrp Delay(d),s/veh	69.0	17.3	17.3	29.6	0.0	31.1	14.4	0.0	0.0	16.2	0.0	15.4
LnGrp LOS	E	B	B	C		C	B			B		B
Approach Vol, veh/h		512			956			16			237	
Approach Delay, s/veh		22.5			30.3			14.4			15.9	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		48.3		49.5	8.3	40.0
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		5.2		9.9		7.2	4.8	26.1
Green Ext Time (p_c), s		1.1		12.0		1.1	0.0	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	374	124	85	614	84	120	122	51	93	143	80
Future Volume (veh/h)	32	374	124	85	614	84	120	122	51	93	143	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	38	445	148	101	731	100	143	145	61	111	170	95
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	694	229	135	913	125	179	676	574	142	637	542
Arrive On Green	0.05	0.27	0.27	0.08	0.29	0.29	0.10	0.36	0.36	0.08	0.34	0.34
Sat Flow, veh/h	1774	2617	863	1774	3129	428	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	38	300	293	101	413	418	143	145	61	111	170	95
Grp Sat Flow(s),veh/h/ln	1774	1770	1710	1774	1770	1787	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.7	12.5	12.7	4.6	18.0	18.0	6.6	4.5	2.1	5.1	5.5	3.5
Cycle Q Clear(g_c), s	1.7	12.5	12.7	4.6	18.0	18.0	6.6	4.5	2.1	5.1	5.5	3.5
Prop In Lane	1.00		0.50	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	87	469	453	135	516	522	179	676	574	142	637	542
V/C Ratio(X)	0.44	0.64	0.65	0.75	0.80	0.80	0.80	0.21	0.11	0.78	0.27	0.18
Avail Cap(c_a), veh/h	288	563	544	288	563	569	288	676	574	288	637	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	27.1	27.2	37.7	27.3	27.3	36.6	18.3	17.6	37.6	19.8	19.2
Incr Delay (d2), s/veh	3.4	1.8	2.0	8.1	7.5	7.5	8.0	0.7	0.4	8.9	1.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.3	6.2	2.6	9.8	9.9	3.6	2.4	1.0	2.8	3.0	1.6
LnGrp Delay(d),s/veh	41.9	28.9	29.1	45.8	34.8	34.7	44.6	19.1	18.0	46.5	20.9	19.9
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		631			932			349			376	
Approach Delay, s/veh		29.8			35.9			29.3			28.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	34.7	10.8	26.6	12.9	33.0	8.6	28.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	7.1	6.5	6.6	14.7	8.6	7.5	3.7	20.0
Green Ext Time (p_c), s	0.1	2.3	0.1	6.8	0.1	2.3	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	32.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	62	24	51	66	59	36	210	49	43	299	16
Future Volume (veh/h)	0	62	24	51	66	59	36	210	49	43	299	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	78	30	64	82	74	45	262	61	54	374	20
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	218	80	221	112	101	102	647	151	172	845	45
Arrive On Green	0.00	0.09	0.09	0.12	0.12	0.12	0.06	0.44	0.44	0.10	0.48	0.48
Sat Flow, veh/h	1774	2539	929	1774	904	815	1774	1462	340	1774	1752	94
Grp Volume(v), veh/h	0	53	55	64	0	156	45	0	323	54	0	394
Grp Sat Flow(s),veh/h/ln	1774	1770	1699	1774	0	1719	1774	0	1803	1774	0	1846
Q Serve(g_s), s	0.0	2.0	2.2	2.4	0.0	6.3	1.8	0.0	8.8	2.0	0.0	10.1
Cycle Q Clear(g_c), s	0.0	2.0	2.2	2.4	0.0	6.3	1.8	0.0	8.8	2.0	0.0	10.1
Prop In Lane	1.00		0.55	1.00		0.47	1.00		0.19	1.00		0.05
Lane Grp Cap(c), veh/h	153	152	146	221	0	214	102	0	797	172	0	890
V/C Ratio(X)	0.00	0.35	0.38	0.29	0.00	0.73	0.44	0.00	0.41	0.31	0.00	0.44
Avail Cap(c_a), veh/h	495	494	474	495	0	480	175	0	797	495	0	890
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	31.0	31.1	28.6	0.0	30.4	32.8	0.0	13.6	30.3	0.0	12.3
Incr Delay (d2), s/veh	0.0	1.4	1.6	0.7	0.0	4.7	2.9	0.0	1.5	1.0	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	1.1	1.2	0.0	3.3	0.9	0.0	4.6	1.1	0.0	5.5
LnGrp Delay(d),s/veh	0.0	32.4	32.7	29.4	0.0	35.1	35.7	0.0	15.2	31.3	0.0	13.9
LnGrp LOS		C	C	C		D	D		B	C		B
Approach Vol, veh/h		108			220			368			448	
Approach Delay, s/veh		32.5			33.4			17.7			16.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	36.4		10.7	8.7	39.2		13.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	14.3	10.8		4.2	3.8	12.1		8.3
Green Ext Time (p_c), s	0.1	3.4		0.4	0.0	4.7		0.8

Intersection Summary		
HCM 2010 Ctrl Delay	21.4	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	164	67	20	222	34	82	199	59	57	223	87
Future Volume (veh/h)	50	164	67	20	222	34	82	199	59	57	223	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	56	184	75	22	249	38	92	224	66	64	251	98
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	459	180	62	469	71	152	817	750	129	793	781
Arrive On Green	0.07	0.18	0.18	0.04	0.15	0.15	0.09	0.44	0.44	0.07	0.43	0.43
Sat Flow, veh/h	1774	2484	976	1774	3085	465	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	56	129	130	22	141	146	92	224	66	64	251	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1690	1774	1770	1781	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.0	4.3	4.5	0.8	4.9	5.1	3.3	5.1	1.5	2.3	6.0	2.2
Cycle Q Clear(g_c), s	2.0	4.3	4.5	0.8	4.9	5.1	3.3	5.1	1.5	2.3	6.0	2.2
Prop In Lane	1.00		0.58	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	327	312	62	269	271	152	817	750	129	793	781
V/C Ratio(X)	0.47	0.40	0.42	0.35	0.53	0.54	0.61	0.27	0.09	0.50	0.32	0.13
Avail Cap(c_a), veh/h	358	700	669	358	700	705	358	817	750	358	793	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	24.0	24.1	31.6	26.2	26.2	29.5	12.0	9.7	29.9	12.8	9.2
Incr Delay (d2), s/veh	2.8	0.8	0.9	3.4	1.6	1.7	3.8	0.8	0.2	2.9	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.2	2.2	0.5	2.5	2.6	1.8	2.8	0.7	1.2	3.3	1.0
LnGrp Delay(d),s/veh	32.8	24.8	25.0	34.9	27.7	27.9	33.4	12.8	9.9	32.8	13.8	9.5
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		315			309			382			413	
Approach Delay, s/veh		26.3			28.3			17.3			15.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	33.9	6.9	16.9	10.2	33.0	9.0	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.3	7.1	2.8	6.5	5.3	8.0	4.0	7.1
Green Ext Time (p_c), s	0.1	3.4	0.0	3.2	0.1	3.3	0.1	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	450	131	97	323	40	172	673	185	74	529	206
Future Volume (veh/h)	227	450	131	97	323	40	172	673	185	74	529	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	232	459	134	99	330	41	176	687	189	76	540	210
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	916	410	132	578	71	213	1368	730	122	1186	770
Arrive On Green	0.15	0.26	0.26	0.07	0.18	0.18	0.12	0.39	0.39	0.07	0.34	0.34
Sat Flow, veh/h	1774	3539	1583	1774	3172	391	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	232	459	134	99	183	188	176	687	189	76	540	210
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1794	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	10.9	9.4	5.8	4.7	8.0	8.1	8.2	12.6	6.2	3.5	10.2	6.7
Cycle Q Clear(g_c), s	10.9	9.4	5.8	4.7	8.0	8.1	8.2	12.6	6.2	3.5	10.2	6.7
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	916	410	132	322	327	213	1368	730	122	1186	770
V/C Ratio(X)	0.87	0.50	0.33	0.75	0.57	0.58	0.83	0.50	0.26	0.62	0.46	0.27
Avail Cap(c_a), veh/h	282	1103	493	282	551	559	282	1368	730	282	1186	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	26.8	25.5	38.6	31.7	31.8	36.6	19.9	14.0	38.5	22.2	12.9
Incr Delay (d2), s/veh	22.7	0.4	0.5	8.3	1.6	1.6	14.0	1.3	0.9	5.1	1.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	4.6	2.6	2.6	4.1	4.2	4.9	6.4	2.9	1.9	5.2	3.1
LnGrp Delay(d),s/veh	58.0	27.3	26.0	46.9	33.3	33.4	50.6	21.2	14.9	43.7	23.5	13.8
LnGrp LOS	E	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		825			470			1052			826	
Approach Delay, s/veh		35.7			36.2			25.0			22.9	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	37.4	10.8	26.5	14.7	33.0	17.4	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	5.5	14.6	6.7	11.4	10.2	12.2	12.9	10.1
Green Ext Time (p_c), s	0.1	7.7	0.1	5.1	0.1	8.5	0.0	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	38	992	0	0	756
Future Vol, veh/h	0	38	992	0	0	756
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	1012	0	0	771

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1398	506	0	0	1012	0
Stage 1	1012	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	132	512	-	-	681	-
Stage 1	312	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	132	512	-	-	681	-
Mov Cap-2 Maneuver	243	-	-	-	-	-
Stage 1	312	-	-	-	-	-
Stage 2	656	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	512	681	-
HCM Lane V/C Ratio	-	-	0.076	-	-
HCM Control Delay (s)	-	-	12.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

HCM 2010 Signalized Intersection Summary
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	105	159	243	97	21	132	966	236	47	696	44
Future Volume (veh/h)	56	105	159	243	97	21	132	966	236	47	696	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	106	161	245	98	21	133	976	238	47	703	44
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	131	199	281	546	464	167	1334	597	98	1196	535
Arrive On Green	0.06	0.20	0.20	0.16	0.29	0.29	0.09	0.38	0.38	0.06	0.34	0.34
Sat Flow, veh/h	1774	668	1015	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	0	267	245	98	21	133	976	238	47	703	44
Grp Sat Flow(s),veh/h/ln	1774	0	1684	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.6	0.0	12.8	11.4	3.3	0.8	6.2	20.0	9.3	2.2	13.8	1.6
Cycle Q Clear(g_c), s	2.6	0.0	12.8	11.4	3.3	0.8	6.2	20.0	9.3	2.2	13.8	1.6
Prop In Lane	1.00		0.60	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	0	330	281	546	464	167	1334	597	98	1196	535
V/C Ratio(X)	0.53	0.00	0.81	0.87	0.18	0.05	0.79	0.73	0.40	0.48	0.59	0.08
Avail Cap(c_a), veh/h	284	0	529	284	585	497	284	1334	597	284	1196	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	0.0	32.4	34.7	22.2	21.4	37.4	22.6	19.3	38.7	23.1	19.0
Incr Delay (d2), s/veh	3.9	0.0	4.9	24.3	0.2	0.0	8.3	3.6	2.0	3.6	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	6.4	7.5	1.7	0.4	3.4	10.4	4.4	1.2	7.1	0.7
LnGrp Delay(d),s/veh	42.3	0.0	37.3	58.9	22.4	21.4	45.7	26.2	21.3	42.2	25.2	19.3
LnGrp LOS	D		D	E	C	C	D	C	C	D	C	B
Approach Vol, veh/h		324			364			1347			794	
Approach Delay, s/veh		38.1			46.9			27.2			25.9	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	36.3	17.8	21.0	12.5	33.0	9.7	29.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.2	22.0	13.4	14.8	8.2	15.8	4.6	5.3
Green Ext Time (p_c), s	0.0	5.2	0.0	1.8	0.1	9.0	0.1	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Heacock St & SR 60 WB Ramp

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	197	4	210	342	1132	0	0	795	307
Future Volume (veh/h)	0	0	0	197	4	210	342	1132	0	0	795	307
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				205	4	219	356	1179	0	0	828	320
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				314	6	286	397	2506	0	0	1070	413
Arrive On Green				0.18	0.18	0.18	0.22	0.71	0.00	0.00	0.43	0.43
Sat Flow, veh/h				1742	34	1583	1774	3632	0	0	2592	964
Grp Volume(v), veh/h				209	0	219	356	1179	0	0	586	562
Grp Sat Flow(s),veh/h/ln				1776	0	1583	1774	1770	0	0	1770	1693
Q Serve(g_s), s				8.8	0.0	10.6	15.7	11.8	0.0	0.0	22.8	22.9
Cycle Q Clear(g_c), s				8.8	0.0	10.6	15.7	11.8	0.0	0.0	22.8	22.9
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				320	0	286	397	2506	0	0	758	725
V/C Ratio(X)				0.65	0.00	0.77	0.90	0.47	0.00	0.00	0.77	0.78
Avail Cap(c_a), veh/h				746	0	666	460	2506	0	0	758	725
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.7	0.0	31.4	30.4	5.2	0.0	0.0	19.7	19.7
Incr Delay (d2), s/veh				2.2	0.0	4.3	18.1	0.6	0.0	0.0	7.5	8.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	5.0	9.7	5.8	0.0	0.0	12.7	12.2
LnGrp Delay(d),s/veh				32.9	0.0	35.7	48.5	5.8	0.0	0.0	27.3	27.7
LnGrp LOS				C		D	D	A			C	C
Approach Vol, veh/h					428			1535			1148	
Approach Delay, s/veh					34.4			15.7			27.5	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			22.6	39.0		19.1
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		13.8			17.7	24.9		12.6
Green Ext Time (p_c), s		26.3			0.4	6.0		1.9

Intersection Summary		
HCM 2010 Ctrl Delay		22.6
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	532	3	334	0	0	0	0	952	252	232	766	0
Future Volume (veh/h)	532	3	334	0	0	0	0	952	252	232	766	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	556	0	348				0	992	262	242	798	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	908	0	405				0	1767	466	284	2296	0
Arrive On Green	0.26	0.00	0.26				0.00	0.44	0.44	0.16	0.65	0.00
Sat Flow, veh/h	3548	0	1583				0	4177	1057	1774	3632	0
Grp Volume(v), veh/h	556	0	348				0	839	415	242	798	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1676	1774	1770	0
Q Serve(g_s), s	13.0	0.0	19.7				0.0	17.3	17.4	12.5	9.6	0.0
Cycle Q Clear(g_c), s	13.0	0.0	19.7				0.0	17.3	17.4	12.5	9.6	0.0
Prop In Lane	1.00		1.00				0.00		0.63	1.00		0.00
Lane Grp Cap(c), veh/h	908	0	405				0	1494	739	284	2296	0
V/C Ratio(X)	0.61	0.00	0.86				0.00	0.56	0.56	0.85	0.35	0.00
Avail Cap(c_a), veh/h	1126	0	503				0	1494	739	563	2296	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.9	0.0	33.4				0.0	19.6	19.6	38.5	7.5	0.0
Incr Delay (d2), s/veh	0.7	0.0	11.8				0.0	0.5	1.0	7.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	9.9				0.0	8.1	8.2	6.7	4.8	0.0
LnGrp Delay(d),s/veh	31.6	0.0	45.3				0.0	20.1	20.6	45.6	7.9	0.0
LnGrp LOS	C		D					C	C	D	A	
Approach Vol, veh/h		904						1254			1040	
Approach Delay, s/veh		36.9						20.2			16.7	
Approach LOS		D						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	19.6	46.0		28.6		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	11.5	19.4		21.7		11.6		
Green Ext Time (p_c), s	0.6	6.0		2.3		23.3		

Intersection Summary	
HCM 2010 Ctrl Delay	23.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	397	17	0	675	0	0	0	22	0	0	0
Future Vol, veh/h	0	397	17	0	675	0	0	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	422	18	0	718	0	0	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	718	0	0	440	0	0	790	1149	220	929	1158	359
Stage 1	-	-	-	-	-	-	431	431	-	718	718	-
Stage 2	-	-	-	-	-	-	359	718	-	211	440	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	879	-	-	1116	-	-	281	197	784	222	195	638
Stage 1	-	-	-	-	-	-	573	581	-	386	431	-
Stage 2	-	-	-	-	-	-	632	431	-	771	576	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	879	-	-	1116	-	-	281	197	784	215	195	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	281	197	-	215	195	-
Stage 1	-	-	-	-	-	-	573	581	-	386	431	-
Stage 2	-	-	-	-	-	-	632	431	-	748	576	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	784	879	-	-	1116	-	-	-
HCM Lane V/C Ratio	0.03	-	-	-	-	-	-	-
HCM Control Delay (s)	9.7	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	175.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	268	310	156	28	264	35	164	2	24	37	0	239
Future Vol, veh/h	268	310	156	28	264	35	164	2	24	37	0	239
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	305	352	177	32	300	40	186	2	27	42	0	272

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	340	0	0	530	0	0	1434	1453	265	1170	1523	320
Stage 1	-	-	-	-	-	-	1050	1050	-	384	384	-
Stage 2	-	-	-	-	-	-	384	403	-	786	1139	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1217	-	-	1035	-	-	~ 103	130	734	159	118	720
Stage 1	-	-	-	-	-	-	244	303	-	638	611	-
Stage 2	-	-	-	-	-	-	638	599	-	352	275	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1217	-	-	1035	-	-	~ 51	94	734	119	86	720
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 51	94	-	119	86	-
Stage 1	-	-	-	-	-	-	~ 183	227	-	478	592	-
Stage 2	-	-	-	-	-	-	385	580	-	251	206	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0.7	$ 1371.9	18.1
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	58	1217	-	-	1035	-	-	119	720
HCM Lane V/C Ratio	3.723	0.25	-	-	0.031	-	-	0.353	0.377
HCM Control Delay (s)	$ 1371.9	8.9	-	-	8.6	-	-	50.9	13
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	23.2	1	-	-	0.1	-	-	1.4	1.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	361	317	7	10	10
Future Vol, veh/h	11	361	317	7	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	397	348	8	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	356	0	-	0	773	352
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1203	-	-	-	367	692
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1203	-	-	-	362	692
Mov Cap-2 Maneuver	-	-	-	-	475	-
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	653	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1203	-	-	-	563
HCM Lane V/C Ratio	0.01	-	-	-	0.039
HCM Control Delay (s)	8	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	204	164	105	79	99	221
Future Vol, veh/h	204	164	105	79	99	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	180	115	87	109	243

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	202	0	-	0	788	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	629	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1370	-	-	-	360	886
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1370	-	-	-	294	886
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	434	-

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	18.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1370	-	-	-	620
HCM Lane V/C Ratio	0.164	-	-	-	0.567
HCM Control Delay (s)	8.1	-	-	-	18.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	3.6

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	227	24	88	141	100	24	0	93	84	0	19
Future Vol, veh/h	13	227	24	88	141	100	24	0	93	84	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	244	26	95	152	108	26	0	100	90	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	270	0	0	690	733	257	730	693	205
Stage 1	-	-	-	-	-	-	285	285	-	395	395	-
Stage 2	-	-	-	-	-	-	405	448	-	335	298	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1306	-	-	1293	-	-	359	348	782	338	367	836
Stage 1	-	-	-	-	-	-	722	676	-	630	605	-
Stage 2	-	-	-	-	-	-	622	573	-	679	667	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1306	-	-	1293	-	-	324	314	782	272	331	836
Mov Cap-2 Maneuver	-	-	-	-	-	-	324	314	-	272	331	-
Stage 1	-	-	-	-	-	-	713	667	-	622	552	-
Stage 2	-	-	-	-	-	-	554	523	-	584	658	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	2.1	12.5	22.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	606	1306	-	-	1293	-	-	311
HCM Lane V/C Ratio	0.208	0.011	-	-	0.073	-	-	0.356
HCM Control Delay (s)	12.5	7.8	0	-	8	0	-	22.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.2	-	-	1.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	404	200	8	0	9
Future Vol, veh/h	0	404	200	8	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	430	213	9	0	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	217
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	823
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	823
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	823
HCM Lane V/C Ratio	-	-	-	0.012
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 2010 Signalized Intersection Summary
12: Driveway/Davis St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	599	44	43	376	48	47	0	47	65	0	47
Future Volume (veh/h)	85	599	44	43	376	48	47	0	47	65	0	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	98	689	51	49	432	55	54	0	54	75	0	54
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	1292	96	101	745	93	416	19	375	784	0	809
Arrive On Green	0.06	0.39	0.39	0.28	0.28	0.28	0.51	0.00	0.51	0.51	0.00	0.51
Sat Flow, veh/h	1774	3342	247	189	2673	335	695	38	733	1345	0	1583
Grp Volume(v), veh/h	98	365	375	268	0	268	108	0	0	75	0	54
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1561	0	1636	1466	0	0	1345	0	1583
Q Serve(g_s), s	4.9	14.0	14.0	5.0	0.0	12.5	1.1	0.0	0.0	0.0	0.0	1.5
Cycle Q Clear(g_c), s	4.9	14.0	14.0	12.0	0.0	12.5	3.1	0.0	0.0	1.9	0.0	1.5
Prop In Lane	1.00		0.14	0.18		0.20	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	101	684	704	484	0	456	810	0	0	784	0	809
V/C Ratio(X)	0.97	0.53	0.53	0.55	0.00	0.59	0.13	0.00	0.00	0.10	0.00	0.07
Avail Cap(c_a), veh/h	101	924	950	834	0	855	810	0	0	784	0	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.5	20.9	20.9	26.9	0.0	27.4	11.2	0.0	0.0	11.0	0.0	10.9
Incr Delay (d2), s/veh	80.6	0.6	0.6	1.0	0.0	1.2	0.3	0.0	0.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	6.9	7.1	5.7	0.0	5.7	1.5	0.0	0.0	1.0	0.0	0.7
LnGrp Delay(d),s/veh	122.1	21.5	21.5	27.9	0.0	28.6	11.6	0.0	0.0	11.2	0.0	11.1
LnGrp LOS	F	C	C	C		C	B			B		B
Approach Vol, veh/h		838			536			108			129	
Approach Delay, s/veh		33.3			28.2			11.6			11.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		38.6		49.5	9.5	29.1
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		5.1		16.0		3.9	6.9	14.5
Green Ext Time (p_c), s		1.3		9.9		1.3	0.0	10.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	506	85	54	328	53	61	134	132	58	90	65
Future Volume (veh/h)	87	506	85	54	328	53	61	134	132	58	90	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	95	550	92	59	357	58	66	146	143	63	98	71
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	783	130	116	744	120	122	697	592	120	694	590
Arrive On Green	0.08	0.26	0.26	0.07	0.24	0.24	0.07	0.37	0.37	0.07	0.37	0.37
Sat Flow, veh/h	1774	3037	506	1774	3054	492	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	95	320	322	59	206	209	66	146	143	63	98	71
Grp Sat Flow(s),veh/h/ln	1774	1770	1773	1774	1770	1776	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.0	12.5	12.6	2.5	7.6	7.7	2.8	4.1	4.8	2.6	2.7	2.3
Cycle Q Clear(g_c), s	4.0	12.5	12.6	2.5	7.6	7.7	2.8	4.1	4.8	2.6	2.7	2.3
Prop In Lane	1.00		0.29	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	456	457	116	431	433	122	697	592	120	694	590
V/C Ratio(X)	0.67	0.70	0.71	0.51	0.48	0.48	0.54	0.21	0.24	0.53	0.14	0.12
Avail Cap(c_a), veh/h	313	613	614	313	613	615	313	697	592	313	694	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	25.7	25.8	34.6	24.7	24.8	34.4	16.3	16.5	34.5	15.9	15.8
Incr Delay (d2), s/veh	5.5	2.3	2.4	3.4	0.8	0.8	3.7	0.7	1.0	3.5	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.4	6.5	1.3	3.8	3.9	1.5	2.2	2.2	1.4	1.4	1.1
LnGrp Delay(d),s/veh	39.8	28.0	28.1	38.0	25.6	25.6	38.1	16.9	17.4	38.0	16.3	16.2
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		737			474			355			232	
Approach Delay, s/veh		29.6			27.1			21.1			22.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	33.1	9.5	24.2	9.8	33.0	10.6	23.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	14.6	6.8	4.5	14.6	4.8	4.7	6.0	9.7
Green Ext Time (p_c), s	0.1	2.1	0.1	5.1	0.1	2.1	0.1	6.1

Intersection Summary		
HCM 2010 Ctrl Delay		26.3
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	159	66	41	86	22	62	260	86	16	189	33
Future Volume (veh/h)	61	159	66	41	86	22	62	260	86	16	189	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	64	167	69	43	91	23	65	274	91	17	199	35
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	275	109	164	133	34	125	606	201	171	738	130
Arrive On Green	0.11	0.11	0.11	0.09	0.09	0.09	0.07	0.45	0.45	0.10	0.48	0.48
Sat Flow, veh/h	1774	2475	984	1774	1436	363	1774	1339	445	1774	1543	271
Grp Volume(v), veh/h	64	118	118	43	0	114	65	0	365	17	0	234
Grp Sat Flow(s),veh/h/ln	1774	1770	1689	1774	0	1799	1774	0	1784	1774	0	1815
Q Serve(g_s), s	2.4	4.6	4.9	1.6	0.0	4.5	2.6	0.0	10.2	0.6	0.0	5.6
Cycle Q Clear(g_c), s	2.4	4.6	4.9	1.6	0.0	4.5	2.6	0.0	10.2	0.6	0.0	5.6
Prop In Lane	1.00		0.58	1.00		0.20	1.00		0.25	1.00		0.15
Lane Grp Cap(c), veh/h	197	197	188	164	0	166	125	0	807	171	0	868
V/C Ratio(X)	0.32	0.60	0.63	0.26	0.00	0.69	0.52	0.00	0.45	0.10	0.00	0.27
Avail Cap(c_a), veh/h	491	490	468	491	0	498	174	0	807	491	0	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	30.7	30.8	30.6	0.0	31.9	32.6	0.0	13.7	29.9	0.0	11.4
Incr Delay (d2), s/veh	0.9	2.9	3.5	0.8	0.0	4.9	3.3	0.0	1.8	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.4	2.5	0.8	0.0	2.4	1.4	0.0	5.4	0.3	0.0	3.0
LnGrp Delay(d),s/veh	30.7	33.6	34.3	31.5	0.0	36.9	35.9	0.0	15.5	30.2	0.0	12.1
LnGrp LOS	C	C	C	C		D	D		B	C		B
Approach Vol, veh/h		300			157			430			251	
Approach Delay, s/veh		33.3			35.4			18.6			13.3	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.3		12.6	9.6	39.2		11.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	12.6	12.2		6.9	4.6	7.6		6.5
Green Ext Time (p_c), s	0.0	2.6		1.2	0.0	4.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	520	113	44	257	45	91	220	74	61	146	64
Future Volume (veh/h)	154	520	113	44	257	45	91	220	74	61	146	64
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	160	542	118	46	268	47	95	229	77	64	152	67
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	746	162	101	611	106	140	713	696	120	692	766
Arrive On Green	0.11	0.26	0.26	0.06	0.20	0.20	0.08	0.38	0.38	0.07	0.37	0.37
Sat Flow, veh/h	1774	2894	628	1774	3018	522	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	160	331	329	46	156	159	95	229	77	64	152	67
Grp Sat Flow(s),veh/h/ln	1774	1770	1752	1774	1770	1771	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	6.8	13.1	13.2	1.9	5.9	6.1	4.0	6.6	2.2	2.7	4.3	1.8
Cycle Q Clear(g_c), s	6.8	13.1	13.2	1.9	5.9	6.1	4.0	6.6	2.2	2.7	4.3	1.8
Prop In Lane	1.00		0.36	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	456	452	101	358	359	140	713	696	120	692	766
V/C Ratio(X)	0.80	0.72	0.73	0.45	0.43	0.44	0.68	0.32	0.11	0.53	0.22	0.09
Avail Cap(c_a), veh/h	312	611	605	312	611	611	312	713	696	312	692	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	26.0	26.0	35.0	26.8	26.8	34.4	16.7	12.7	34.6	16.5	10.7
Incr Delay (d2), s/veh	8.0	2.8	3.0	3.2	0.8	0.9	5.6	1.2	0.3	3.6	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.7	6.7	1.0	3.0	3.1	2.2	3.6	1.0	1.4	2.3	0.8
LnGrp Delay(d),s/veh	41.2	28.8	29.0	38.2	27.6	27.7	39.9	17.9	13.0	38.2	17.2	10.9
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		820			361			401			283	
Approach Delay, s/veh		31.3			29.0			22.2			20.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	33.9	8.9	24.3	10.6	33.0	13.1	20.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.7	8.6	3.9	15.2	6.0	6.3	8.8	8.1
Green Ext Time (p_c), s	0.1	2.6	0.0	4.6	0.1	2.7	0.2	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Near Term Year (2022)

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	315	162	181	598	47	135	489	103	57	632	290
Future Volume (veh/h)	147	315	162	181	598	47	135	489	103	57	632	290
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	156	335	172	193	636	50	144	520	110	61	672	309
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	823	368	230	844	66	179	1302	787	110	1165	692
Arrive On Green	0.11	0.23	0.23	0.13	0.25	0.25	0.10	0.37	0.37	0.06	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3325	261	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	156	335	172	193	338	348	144	520	110	61	672	309
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1817	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.4	6.9	8.1	9.2	15.3	15.3	6.9	9.4	3.2	2.9	13.6	11.8
Cycle Q Clear(g_c), s	7.4	6.9	8.1	9.2	15.3	15.3	6.9	9.4	3.2	2.9	13.6	11.8
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	823	368	230	449	461	179	1302	787	110	1165	692
V/C Ratio(X)	0.81	0.41	0.47	0.84	0.75	0.75	0.80	0.40	0.14	0.55	0.58	0.45
Avail Cap(c_a), veh/h	277	1084	485	277	542	556	277	1302	787	277	1165	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	28.2	28.6	36.8	29.8	29.8	38.1	20.3	11.8	39.4	24.0	17.0
Incr Delay (d2), s/veh	11.4	0.3	0.9	17.4	4.8	4.7	9.3	0.9	0.4	4.3	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.4	3.6	5.6	8.0	8.2	3.8	4.8	1.5	1.6	7.0	5.5
LnGrp Delay(d),s/veh	49.1	28.5	29.5	54.3	34.6	34.5	47.4	21.2	12.1	43.7	26.1	19.1
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		663			879			774			1042	
Approach Delay, s/veh		33.6			38.9			24.8			25.1	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	36.3	15.7	24.6	13.2	33.0	13.9	26.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.9	11.4	11.2	10.1	8.9	15.6	9.4	17.3
Green Ext Time (p_c), s	0.1	8.6	0.1	6.6	0.1	7.2	0.1	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.3
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	726	0	0	975
Future Vol, veh/h	0	0	726	0	0	975
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	772	0	0	1037

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1291	386	0	0	772	0
Stage 1	772	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	155	612	-	-	839	-
Stage 1	416	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	155	612	-	-	839	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	562	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	839	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	67	156	63	83	20	124	689	63	20	940	46
Future Volume (veh/h)	45	67	156	63	83	20	124	689	63	20	940	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	46	69	161	65	86	21	128	710	65	21	969	47
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	91	213	126	365	310	164	1626	727	59	1416	633
Arrive On Green	0.06	0.18	0.18	0.07	0.20	0.20	0.09	0.46	0.46	0.03	0.40	0.40
Sat Flow, veh/h	1774	497	1161	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	46	0	230	65	86	21	128	710	65	21	969	47
Grp Sat Flow(s),veh/h/ln	1774	0	1658	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.8	0.0	9.4	2.5	2.8	0.8	5.0	9.7	1.6	0.8	16.1	1.3
Cycle Q Clear(g_c), s	1.8	0.0	9.4	2.5	2.8	0.8	5.0	9.7	1.6	0.8	16.1	1.3
Prop In Lane	1.00		0.70	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	0	304	126	365	310	164	1626	727	59	1416	633
V/C Ratio(X)	0.44	0.00	0.76	0.52	0.24	0.07	0.78	0.44	0.09	0.35	0.68	0.07
Avail Cap(c_a), veh/h	336	0	617	336	693	589	336	1626	727	336	1416	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	0.0	27.6	31.9	24.1	23.3	31.6	13.0	10.9	33.7	17.7	13.2
Incr Delay (d2), s/veh	2.9	0.0	3.8	3.2	0.3	0.1	7.7	0.9	0.2	3.6	2.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.6	1.3	1.5	0.3	2.8	4.9	0.8	0.5	8.3	0.6
LnGrp Delay(d),s/veh	35.3	0.0	31.4	35.1	24.5	23.4	39.3	13.9	11.1	37.2	20.4	13.4
LnGrp LOS	D		C	D	C	C	D	B	B	D	C	B
Approach Vol, veh/h		276			172			903			1037	
Approach Delay, s/veh		32.1			28.4			17.3			20.4	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	37.2	9.6	17.6	11.1	33.0	8.7	18.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	2.8	11.7	4.5	11.4	7.0	18.1	3.8	4.8
Green Ext Time (p_c), s	0.0	10.7	0.1	1.7	0.1	7.4	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	342	4	168	332	707	0	0	859	327
Future Volume (veh/h)	0	0	0	342	4	168	332	707	0	0	859	327
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				356	4	175	346	736	0	0	895	341
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				428	5	387	383	2311	0	0	969	367
Arrive On Green				0.24	0.24	0.24	0.22	0.65	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1755	20	1583	1774	3632	0	0	2605	953
Grp Volume(v), veh/h				360	0	175	346	736	0	0	629	607
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1695
Q Serve(g_s), s				16.8	0.0	8.2	16.6	8.0	0.0	0.0	29.7	30.0
Cycle Q Clear(g_c), s				16.8	0.0	8.2	16.6	8.0	0.0	0.0	29.7	30.0
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.56
Lane Grp Cap(c), veh/h				433	0	387	383	2311	0	0	682	654
V/C Ratio(X)				0.83	0.00	0.45	0.90	0.32	0.00	0.00	0.92	0.93
Avail Cap(c_a), veh/h				688	0	614	424	2311	0	0	682	654
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	28.1	33.4	6.6	0.0	0.0	25.6	25.7
Incr Delay (d2), s/veh				4.8	0.0	0.8	21.1	0.4	0.0	0.0	19.9	21.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.8	0.0	3.7	10.3	4.0	0.0	0.0	18.1	17.9
LnGrp Delay(d),s/veh				36.2	0.0	28.9	54.5	7.0	0.0	0.0	45.5	47.1
LnGrp LOS				D		C	D	A			D	D
Approach Vol, veh/h					535			1082			1236	
Approach Delay, s/veh					33.8			22.2			46.3	
Approach LOS					C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			23.4	38.2		25.8
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		10.0			18.6	32.0		18.8
Green Ext Time (p_c), s		21.7			0.3	0.0		2.5

Intersection Summary		
HCM 2010 Ctrl Delay		34.8
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	4	510	0	0	0	0	796	182	171	995	0
Future Volume (veh/h)	234	4	510	0	0	0	0	796	182	171	995	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	242	0	520				0	812	186	174	1015	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1849	420	213	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.45	0.45	0.12	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	4312	942	1774	3632	0
Grp Volume(v), veh/h	242	0	520				0	663	335	174	1015	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1696	1774	1770	0
Q Serve(g_s), s	5.1	0.0	29.9				0.0	13.5	13.6	9.6	15.6	0.0
Cycle Q Clear(g_c), s	5.1	0.0	29.9				0.0	13.5	13.6	9.6	15.6	0.0
Prop In Lane	1.00		1.00				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1512	757	213	2162	0
V/C Ratio(X)	0.23	0.00	1.10				0.00	0.44	0.44	0.82	0.47	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1512	757	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	0.0	35.0				0.0	19.1	19.1	42.9	10.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	70.8				0.0	0.2	0.4	7.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	22.3				0.0	6.3	6.4	5.1	7.8	0.0
LnGrp Delay(d),s/veh	26.5	0.0	105.9				0.0	19.3	19.5	50.5	11.3	0.0
LnGrp LOS	C		F					B	B	D	B	
Approach Vol, veh/h		762						998			1189	
Approach Delay, s/veh		80.7						19.4			17.1	
Approach LOS		F						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.5	49.1		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	11.6	15.6		31.9		17.6		
Green Ext Time (p_c), s	0.4	8.5		0.0		21.5		

Intersection Summary	
HCM 2010 Ctrl Delay	34.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	149	1	0	166	0	0	0	1	0	0	0
Future Vol, veh/h	0	149	1	0	166	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	164	1	0	182	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	165	0	0	255	346	82	264	347	91
Stage 1	-	-	-	-	-	-	164	164	-	182	182	-
Stage 2	-	-	-	-	-	-	91	182	-	82	165	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1391	-	-	1411	-	-	677	576	961	668	575	949
Stage 1	-	-	-	-	-	-	822	761	-	802	748	-
Stage 2	-	-	-	-	-	-	906	748	-	917	761	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1391	-	-	1411	-	-	677	576	961	667	575	949
Mov Cap-2 Maneuver	-	-	-	-	-	-	677	576	-	667	575	-
Stage 1	-	-	-	-	-	-	822	761	-	802	748	-
Stage 2	-	-	-	-	-	-	906	748	-	916	761	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	961	1391	-	-	1411	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	139	1	0	159	1	2	0	0	0	0	7
Future Vol, veh/h	12	139	1	0	159	1	2	0	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	162	1	0	185	1	2	0	0	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	186	0	0	163	0	0	375	376	81	294	376	185
Stage 1	-	-	-	-	-	-	190	190	-	185	185	-
Stage 2	-	-	-	-	-	-	185	186	-	109	191	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1387	-	-	1414	-	-	569	555	963	647	555	857
Stage 1	-	-	-	-	-	-	794	742	-	816	746	-
Stage 2	-	-	-	-	-	-	816	745	-	885	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1387	-	-	1414	-	-	559	549	963	642	549	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	559	549	-	642	549	-
Stage 1	-	-	-	-	-	-	786	735	-	808	746	-
Stage 2	-	-	-	-	-	-	808	745	-	876	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	11.5	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	559	1387	-	-	1414	-	-	-	857
HCM Lane V/C Ratio	0.004	0.01	-	-	-	-	-	-	0.009
HCM Control Delay (s)	11.5	7.6	-	-	0	-	-	0	9.2
HCM Lane LOS	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	121	153	4	0	6
Future Vol, veh/h	18	121	153	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	144	182	5	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	372	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1387	-	-	-	629	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	845	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	619	857
Mov Cap-2 Maneuver	-	-	-	-	665	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	857
HCM Lane V/C Ratio	0.015	-	-	-	0.008
HCM Control Delay (s)	7.6	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	109	155	20	6	4
Future Vol, veh/h	13	109	155	20	6	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	121	172	22	7	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	194	0	-	0	333	183
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	150	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1379	-	-	-	662	859
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	878	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1379	-	-	-	655	859
Mov Cap-2 Maneuver	-	-	-	-	690	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	868	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1379	-	-	-	749
HCM Lane V/C Ratio	0.01	-	-	-	0.015
HCM Control Delay (s)	7.6	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	114	171	7	0	1
Future Vol, veh/h	0	114	171	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	133	199	8	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	203
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	838
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	838
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	838
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	9.3
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	115	173	4	0	7
Future Vol, veh/h	0	115	173	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	132	199	5	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	201
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	840
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	840
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	840
HCM Lane V/C Ratio	-	-	-	0.01
HCM Control Delay (s)	-	-	-	9.3
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 2010 Signalized Intersection Summary
12: Driveway/Davis St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	437	0	0	748	174	0	0	0	142	0	87
Future Volume (veh/h)	51	437	0	0	748	174	0	0	0	142	0	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	497	0	0	850	198	0	0	0	161	0	99
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	74	1644	0	0	1077	251	0	831	0	863	0	707
Arrive On Green	0.04	0.46	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.45	0.00	0.45
Sat Flow, veh/h	1774	3632	0	0	2944	664	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	58	497	0	0	527	521	0	0	0	161	0	99
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1746	0	1863	0	1774	0	1583
Q Serve(g_s), s	3.3	8.8	0.0	0.0	26.6	26.7	0.0	0.0	0.0	5.6	0.0	3.7
Cycle Q Clear(g_c), s	3.3	8.8	0.0	0.0	26.6	26.7	0.0	0.0	0.0	5.6	0.0	3.7
Prop In Lane	1.00		0.00	0.00		0.38	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	1644	0	0	669	659	0	831	0	863	0	707
V/C Ratio(X)	0.78	0.30	0.00	0.00	0.79	0.79	0.00	0.00	0.00	0.19	0.00	0.14
Avail Cap(c_a), veh/h	88	1644	0	0	807	796	0	831	0	863	0	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.8	16.8	0.0	0.0	27.8	27.8	0.0	0.0	0.0	17.0	0.0	16.5
Incr Delay (d2), s/veh	30.5	0.1	0.0	0.0	4.4	4.5	0.0	0.0	0.0	0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.3	0.0	0.0	13.9	13.7	0.0	0.0	0.0	2.8	0.0	1.7
LnGrp Delay(d),s/veh	78.3	16.9	0.0	0.0	32.2	32.3	0.0	0.0	0.0	17.5	0.0	16.9
LnGrp LOS	E	B			C	C				B		B
Approach Vol, veh/h		555			1048			0			260	
Approach Delay, s/veh		23.3			32.2			0.0			17.3	
Approach LOS		C			C						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		51.3		49.5	8.7	42.6
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		0.0		10.8		7.6	5.3	28.7
Green Ext Time (p_c), s		0.0		14.0		1.1	0.0	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	406	137	119	685	94	132	150	74	105	174	91
Future Volume (veh/h)	36	406	137	119	685	94	132	150	74	105	174	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	483	163	142	815	112	157	179	88	125	207	108
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	677	227	177	961	132	193	644	548	158	608	516
Arrive On Green	0.05	0.26	0.26	0.10	0.31	0.31	0.11	0.35	0.35	0.09	0.33	0.33
Sat Flow, veh/h	1774	2605	873	1774	3127	430	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	43	327	319	142	461	466	157	179	88	125	207	108
Grp Sat Flow(s),veh/h/ln	1774	1770	1709	1774	1770	1787	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.1	14.7	14.8	6.8	21.3	21.3	7.6	6.1	3.4	6.0	7.4	4.3
Cycle Q Clear(g_c), s	2.1	14.7	14.8	6.8	21.3	21.3	7.6	6.1	3.4	6.0	7.4	4.3
Prop In Lane	1.00		0.51	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	460	444	177	544	549	193	644	548	158	608	516
V/C Ratio(X)	0.47	0.71	0.72	0.80	0.85	0.85	0.82	0.28	0.16	0.79	0.34	0.21
Avail Cap(c_a), veh/h	274	537	518	274	544	549	274	644	548	274	608	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	29.4	29.4	38.5	28.3	28.3	38.1	20.7	19.8	39.0	22.3	21.3
Incr Delay (d2), s/veh	3.6	3.6	4.0	9.3	12.0	11.9	11.9	1.1	0.6	8.6	1.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.6	7.5	3.8	12.2	12.3	4.3	3.3	1.6	3.3	4.1	2.0
LnGrp Delay(d),s/veh	43.9	33.0	33.4	47.8	40.3	40.2	50.0	21.8	20.4	47.6	23.8	22.2
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		689			1069			424			440	
Approach Delay, s/veh		33.9			41.3			31.9			30.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	34.7	13.2	27.2	14.0	33.0	9.0	31.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	9.0	8.1	8.8	16.8	9.6	9.4	4.1	23.3
Green Ext Time (p_c), s	0.1	2.8	0.1	5.9	0.1	2.8	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	81	29	76	85	65	40	255	66	47	365	24
Future Volume (veh/h)	10	81	29	76	85	65	40	255	66	47	365	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	101	36	95	106	81	50	319	82	59	456	30
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	232	79	254	140	107	107	618	159	167	805	53
Arrive On Green	0.09	0.09	0.09	0.14	0.14	0.14	0.06	0.43	0.43	0.09	0.47	0.47
Sat Flow, veh/h	1774	2592	885	1774	981	750	1774	1430	368	1774	1729	114
Grp Volume(v), veh/h	12	68	69	95	0	187	50	0	401	59	0	486
Grp Sat Flow(s),veh/h/ln	1774	1770	1707	1774	0	1730	1774	0	1798	1774	0	1843
Q Serve(g_s), s	0.5	2.7	2.9	3.6	0.0	7.7	2.0	0.0	12.2	2.3	0.0	14.3
Cycle Q Clear(g_c), s	0.5	2.7	2.9	3.6	0.0	7.7	2.0	0.0	12.2	2.3	0.0	14.3
Prop In Lane	1.00		0.52	1.00		0.43	1.00		0.20	1.00		0.06
Lane Grp Cap(c), veh/h	159	159	153	254	0	247	107	0	777	167	0	858
V/C Ratio(X)	0.08	0.43	0.45	0.37	0.00	0.76	0.47	0.00	0.52	0.35	0.00	0.57
Avail Cap(c_a), veh/h	478	477	460	478	0	467	169	0	777	478	0	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	32.1	32.2	28.9	0.0	30.7	33.9	0.0	15.5	31.7	0.0	14.5
Incr Delay (d2), s/veh	0.2	1.8	2.1	0.9	0.0	4.7	3.1	0.0	2.4	1.3	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	1.4	1.8	0.0	4.0	1.1	0.0	6.5	1.2	0.0	7.8
LnGrp Delay(d),s/veh	31.3	33.9	34.3	29.8	0.0	35.4	37.0	0.0	17.9	32.9	0.0	17.2
LnGrp LOS	C	C	C	C		D	D		B	C		B
Approach Vol, veh/h		149			282			451			545	
Approach Delay, s/veh		33.9			33.5			20.0			18.9	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	36.7		11.2	9.0	39.2		15.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	14.3	14.2		4.9	4.0	16.3		9.7
Green Ext Time (p_c), s	0.1	3.3		0.6	0.0	5.6		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	189	81	22	247	38	101	224	65	63	252	171
Future Volume (veh/h)	123	189	81	22	247	38	101	224	65	63	252	171
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	138	212	91	25	278	43	113	252	73	71	283	192
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	545	226	68	500	76	155	768	714	131	743	789
Arrive On Green	0.10	0.22	0.22	0.04	0.16	0.16	0.09	0.41	0.41	0.07	0.40	0.40
Sat Flow, veh/h	1774	2441	1013	1774	3079	471	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	138	152	151	25	158	163	113	252	73	71	283	192
Grp Sat Flow(s),veh/h/ln	1774	1770	1684	1774	1770	1780	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.4	5.2	5.5	1.0	5.9	6.0	4.4	6.6	1.9	2.8	7.7	4.9
Cycle Q Clear(g_c), s	5.4	5.2	5.5	1.0	5.9	6.0	4.4	6.6	1.9	2.8	7.7	4.9
Prop In Lane	1.00		0.60	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	395	376	68	287	289	155	768	714	131	743	789
V/C Ratio(X)	0.78	0.38	0.40	0.37	0.55	0.56	0.73	0.33	0.10	0.54	0.38	0.24
Avail Cap(c_a), veh/h	335	656	625	335	656	660	335	768	714	335	743	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	23.6	23.7	33.5	27.5	27.6	31.8	14.3	11.3	31.9	15.2	10.2
Incr Delay (d2), s/veh	7.4	0.6	0.7	3.3	1.7	1.7	6.4	1.1	0.3	3.4	1.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.6	2.6	0.5	3.0	3.1	2.4	3.6	0.9	1.5	4.2	2.3
LnGrp Delay(d),s/veh	38.8	24.2	24.4	36.8	29.2	29.3	38.1	15.4	11.6	35.3	16.7	11.0
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		441			346			438			546	
Approach Delay, s/veh		28.8			29.8			20.6			17.1	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	34.0	7.2	20.5	10.8	33.0	11.6	16.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.8	8.6	3.0	7.5	6.4	9.7	7.4	8.0
Green Ext Time (p_c), s	0.1	4.1	0.0	3.6	0.1	4.0	0.2	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.4
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) Without-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	490	197	109	346	44	245	770	207	82	608	227
Future Volume (veh/h)	251	490	197	109	346	44	245	770	207	82	608	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	256	500	201	111	353	45	250	786	211	84	620	232
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	914	409	141	597	76	264	1400	752	120	1113	734
Arrive On Green	0.15	0.26	0.26	0.08	0.19	0.19	0.15	0.40	0.40	0.07	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3162	400	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	256	500	201	111	196	202	250	786	211	84	620	232
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1792	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.0	11.1	9.8	5.6	9.2	9.3	12.7	15.6	7.3	4.2	13.2	8.3
Cycle Q Clear(g_c), s	13.0	11.1	9.8	5.6	9.2	9.3	12.7	15.6	7.3	4.2	13.2	8.3
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	914	409	141	334	339	264	1400	752	120	1113	734
V/C Ratio(X)	0.97	0.55	0.49	0.79	0.59	0.60	0.95	0.56	0.28	0.70	0.56	0.32
Avail Cap(c_a), veh/h	264	1035	463	264	517	524	264	1400	752	264	1113	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	29.0	28.5	40.9	33.5	33.6	38.2	21.3	14.4	41.3	25.8	15.3
Incr Delay (d2), s/veh	46.5	0.5	0.9	9.2	1.6	1.7	40.8	1.6	0.9	7.1	2.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	5.5	4.4	3.1	4.6	4.7	9.2	8.0	3.4	2.3	6.8	3.9
LnGrp Delay(d),s/veh	84.9	29.5	29.5	50.2	35.2	35.3	79.0	22.9	15.3	48.4	27.8	16.4
LnGrp LOS	F	C	C	D	D	D	E	C	B	D	C	B
Approach Vol, veh/h		957			509			1247			936	
Approach Delay, s/veh		44.3			38.5			32.9			26.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	40.3	11.7	27.9	18.0	33.0	18.0	21.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.2	17.6	7.6	13.1	14.7	15.2	15.0	11.3
Green Ext Time (p_c), s	0.1	7.3	0.1	5.4	0.0	8.4	0.0	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.1
HCM 2010 LOS	D

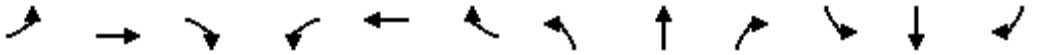
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1222	0	0	913
Future Vol, veh/h	0	0	1222	0	0	913
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1247	0	0	932

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1620	623	0	0	1247	0
Stage 1	1247	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	118	429	-	-	554	-
Stage 1	229	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	429	-	-	554	-
Mov Cap-2 Maneuver	118	-	-	-	-	-
Stage 1	229	-	-	-	-	-
Stage 2	631	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	554	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	98	245	91	83	33	226	1183	120	26	869	52
Future Volume (veh/h)	63	98	245	91	83	33	226	1183	120	26	869	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	99	247	92	84	33	228	1195	121	26	878	53
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	115	286	128	467	397	264	1558	697	67	1165	521
Arrive On Green	0.06	0.24	0.24	0.07	0.25	0.25	0.15	0.44	0.44	0.04	0.33	0.33
Sat Flow, veh/h	1774	473	1181	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	0	346	92	84	33	228	1195	121	26	878	53
Grp Sat Flow(s),veh/h/ln	1774	0	1654	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.0	0.0	17.3	4.4	3.1	1.4	10.9	24.7	4.0	1.2	19.2	2.0
Cycle Q Clear(g_c), s	3.0	0.0	17.3	4.4	3.1	1.4	10.9	24.7	4.0	1.2	19.2	2.0
Prop In Lane	1.00		0.71	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	0	401	128	467	397	264	1558	697	67	1165	521
V/C Ratio(X)	0.57	0.00	0.86	0.72	0.18	0.08	0.87	0.77	0.17	0.39	0.75	0.10
Avail Cap(c_a), veh/h	277	0	506	277	570	485	277	1558	697	277	1165	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	31.4	39.3	25.4	24.8	36.0	20.5	14.7	40.7	25.9	20.2
Incr Delay (d2), s/veh	4.4	0.0	11.9	7.4	0.2	0.1	23.0	3.7	0.5	3.7	4.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	9.2	2.4	1.6	0.6	7.0	12.7	1.8	0.7	10.0	0.9
LnGrp Delay(d),s/veh	43.8	0.0	43.4	46.7	25.6	24.9	59.0	24.2	15.2	44.4	30.4	20.5
LnGrp LOS	D		D	D	C	C	E	C	B	D	C	C
Approach Vol, veh/h		410			209			1544			957	
Approach Delay, s/veh		43.4			34.8			28.6			30.3	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	42.6	10.7	25.5	17.4	33.0	10.0	26.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	3.2	26.7	6.4	19.3	12.9	21.2	5.0	5.1
Green Ext Time (p_c), s	0.0	1.6	0.1	1.6	0.0	6.3	0.1	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	347	4	175	442	1362	0	0	948	396
Future Volume (veh/h)	0	0	0	347	4	175	442	1362	0	0	948	396
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				361	4	182	460	1419	0	0	988	412
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				434	5	391	422	2302	0	0	884	364
Arrive On Green				0.25	0.25	0.25	0.24	0.65	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1756	19	1583	1774	3632	0	0	2541	1007
Grp Volume(v), veh/h				365	0	182	460	1419	0	0	711	689
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1685
Q Serve(g_s), s				17.1	0.0	8.6	20.9	20.5	0.0	0.0	31.7	31.7
Cycle Q Clear(g_c), s				17.1	0.0	8.6	20.9	20.5	0.0	0.0	31.7	31.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.60
Lane Grp Cap(c), veh/h				438	0	391	422	2302	0	0	639	609
V/C Ratio(X)				0.83	0.00	0.47	1.09	0.62	0.00	0.00	1.11	1.13
Avail Cap(c_a), veh/h				685	0	611	422	2302	0	0	639	609
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	28.1	33.4	8.9	0.0	0.0	28.0	28.0
Incr Delay (d2), s/veh				5.1	0.0	0.9	69.9	1.2	0.0	0.0	70.4	78.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	0.0	3.8	18.3	10.3	0.0	0.0	27.8	27.9
LnGrp Delay(d),s/veh				36.4	0.0	29.0	103.4	10.2	0.0	0.0	98.5	106.9
LnGrp LOS				D		C	F	B			F	F
Approach Vol, veh/h					547			1879			1400	
Approach Delay, s/veh					34.0			33.0			102.6	
Approach LOS					C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			25.4	36.2		26.2
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		22.5			22.9	33.7		19.1
Green Ext Time (p_c), s		27.8			0.0	0.0		2.6

Intersection Summary		
HCM 2010 Ctrl Delay		58.6
HCM 2010 LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	3	548	0	0	0	0	1285	431	181	995	0
Future Volume (veh/h)	530	3	548	0	0	0	0	1285	431	181	995	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	554	0	571				0	1339	449	189	1036	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1651	551	228	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.44	0.44	0.13	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	3940	1258	1774	3632	0
Grp Volume(v), veh/h	554	0	571				0	1203	585	189	1036	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1641	1774	1770	0
Q Serve(g_s), s	13.0	0.0	29.9				0.0	30.9	31.2	10.4	16.1	0.0
Cycle Q Clear(g_c), s	13.0	0.0	29.9				0.0	30.9	31.2	10.4	16.1	0.0
Prop In Lane	1.00		1.00				0.00		0.77	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1483	718	228	2162	0
V/C Ratio(X)	0.52	0.00	1.21				0.00	0.81	0.82	0.83	0.48	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1483	718	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.1	0.0	35.0				0.0	24.5	24.6	42.5	10.7	0.0
Incr Delay (d2), s/veh	0.5	0.0	111.3				0.0	3.5	7.3	7.5	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	27.7				0.0	15.1	15.4	5.6	8.0	0.0
LnGrp Delay(d),s/veh	29.6	0.0	146.3				0.0	28.0	31.8	50.1	11.5	0.0
LnGrp LOS	C		F					C	C	D	B	
Approach Vol, veh/h		1125						1788			1225	
Approach Delay, s/veh		88.8						29.3			17.4	
Approach LOS		F						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.3	48.3		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.8	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	12.4	33.2		31.9		18.1		
Green Ext Time (p_c), s	0.5	0.0		0.0		32.7		

Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑			⇳			⇳	
Traffic Vol, veh/h	0	255	19	0	213	0	0	0	24	0	0	0
Future Vol, veh/h	0	255	19	0	213	0	0	0	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	271	20	0	227	0	0	0	26	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	508	508	146	336	518	227
Stage 1	-	-	-	-	-	-	281	281	-	227	227	-
Stage 2	-	-	-	-	-	-	227	227	-	109	291	-
Critical Hdwy	-	-	-	-	-	-	6.78	6.53	7.13	6.78	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	7.33	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.73	5.53	-
Follow-up Hdwy	-	-	-	-	-	-	3.669	4.019	3.919	3.669	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	483	467	744	615	461	812
Stage 1	0	-	-	0	-	0	637	678	-	747	716	-
Stage 2	0	-	-	0	-	0	747	716	-	846	671	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	483	467	744	594	461	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	483	467	-	594	461	-
Stage 1	-	-	-	-	-	-	637	678	-	747	716	-
Stage 2	-	-	-	-	-	-	747	716	-	817	671	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	744	-	-	-	-
HCM Lane V/C Ratio	0.034	-	-	-	-
HCM Control Delay (s)	10	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	230	4	4	162	6	2	2	0	8	0	39
Future Vol, veh/h	50	230	4	4	162	6	2	2	0	8	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	261	5	5	184	7	2	2	0	9	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	191	0	0	266	0	0	574	577	133	442	577	188
Stage 1	-	-	-	-	-	-	377	377	-	197	197	-
Stage 2	-	-	-	-	-	-	197	200	-	245	380	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1381	-	-	1296	-	-	415	427	892	512	427	853
Stage 1	-	-	-	-	-	-	617	615	-	804	737	-
Stage 2	-	-	-	-	-	-	804	735	-	738	613	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1381	-	-	1296	-	-	380	408	892	492	408	853
Mov Cap-2 Maneuver	-	-	-	-	-	-	380	408	-	492	408	-
Stage 1	-	-	-	-	-	-	592	590	-	771	734	-
Stage 2	-	-	-	-	-	-	759	732	-	705	588	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.2	14.2	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	394	1381	-	-	1296	-	-	492	853
HCM Lane V/C Ratio	0.012	0.041	-	-	0.004	-	-	0.018	0.052
HCM Control Delay (s)	14.2	7.7	-	-	7.8	-	-	12.5	9.5
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.1	0.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	227	162	8	11	11
Future Vol, veh/h	12	227	162	8	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	249	178	9	12	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	458	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	276	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1387	-	-	-	561	861
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1387	-	-	-	555	861
Mov Cap-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	763	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	720
HCM Lane V/C Ratio	0.01	-	-	-	0.034
HCM Control Delay (s)	7.6	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	220	155	10	28	18
Future Vol, veh/h	15	220	155	10	28	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	242	170	11	31	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	181	0	-	0	451	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	275	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1394	-	-	-	566	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1394	-	-	-	559	867
Mov Cap-2 Maneuver	-	-	-	-	620	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	761	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1394	-	-	-	698
HCM Lane V/C Ratio	0.012	-	-	-	0.072
HCM Control Delay (s)	7.6	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	247	157	22	0	8
Future Vol, veh/h	1	247	157	22	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	266	169	24	0	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	192	0	-	0	-	181
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1381	-	-	-	0	862
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1381	-	-	-	-	862
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1381	-	-	-	862
HCM Lane V/C Ratio	0.001	-	-	-	0.01
HCM Control Delay (s)	7.6	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	247	169	9	0	10
Future Vol, veh/h	0	247	169	9	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	263	180	10	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	185
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	857
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	857
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	857
HCM Lane V/C Ratio	-	-	-	0.012
HCM Control Delay (s)	-	-	-	9.3
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	682	0	0	432	53	0	0	0	72	0	52
Future Volume (veh/h)	94	682	0	0	432	53	0	0	0	72	0	52
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	108	784	0	0	497	61	0	0	0	83	0	60
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	82	1778	0	0	1317	161	0	773	0	802	0	657
Arrive On Green	0.05	0.50	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1774	3632	0	0	3269	388	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	108	784	0	0	276	282	0	0	0	83	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1794	0	1863	0	1774	0	1583
Q Serve(g_s), s	5.0	15.4	0.0	0.0	11.7	11.8	0.0	0.0	0.0	3.1	0.0	2.5
Cycle Q Clear(g_c), s	5.0	15.4	0.0	0.0	11.7	11.8	0.0	0.0	0.0	3.1	0.0	2.5
Prop In Lane	1.00		0.00	0.00		0.22	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	1778	0	0	734	744	0	773	0	802	0	657
V/C Ratio(X)	1.32	0.44	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.10	0.00	0.09
Avail Cap(c_a), veh/h	82	1778	0	0	734	744	0	773	0	802	0	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	17.3	0.0	0.0	22.0	22.0	0.0	0.0	0.0	19.5	0.0	19.3
Incr Delay (d2), s/veh	207.5	0.8	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	7.7	0.0	0.0	6.1	6.2	0.0	0.0	0.0	1.6	0.0	1.1
LnGrp Delay(d),s/veh	259.3	18.1	0.0	0.0	23.5	23.5	0.0	0.0	0.0	19.8	0.0	19.6
LnGrp LOS	F	B			C	C				B		B
Approach Vol, veh/h		892			558			0			143	
Approach Delay, s/veh		47.3			23.5			0.0			19.7	
Approach LOS		D			C						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		59.0		49.5	9.5	49.5		49.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		45.0		45.0	5.0	45.0		45.0
Max Q Clear Time (g_c+I1), s		17.4		5.1	7.0	13.8		0.0
Green Ext Time (p_c), s		10.6		0.6	0.0	11.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	523	94	113	355	62	67	171	203	66	125	74
Future Volume (veh/h)	100	523	94	113	355	62	67	171	203	66	125	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	109	568	102	123	386	67	73	186	221	72	136	80
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	783	140	157	815	140	124	663	564	124	662	563
Arrive On Green	0.08	0.26	0.26	0.09	0.27	0.27	0.07	0.36	0.36	0.07	0.36	0.36
Sat Flow, veh/h	1774	3000	537	1774	3021	520	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	109	334	336	123	225	228	73	186	221	72	136	80
Grp Sat Flow(s),veh/h/ln	1774	1770	1768	1774	1770	1771	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.8	13.8	13.9	5.4	8.5	8.7	3.2	5.7	8.4	3.2	4.1	2.7
Cycle Q Clear(g_c), s	4.8	13.8	13.9	5.4	8.5	8.7	3.2	5.7	8.4	3.2	4.1	2.7
Prop In Lane	1.00		0.30	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	462	462	157	478	478	124	663	564	124	662	563
V/C Ratio(X)	0.77	0.72	0.73	0.78	0.47	0.48	0.59	0.28	0.39	0.58	0.21	0.14
Avail Cap(c_a), veh/h	299	585	585	299	585	586	299	663	564	299	662	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	27.0	27.0	35.8	24.5	24.5	36.1	18.5	19.3	36.1	17.9	17.5
Incr Delay (d2), s/veh	8.6	3.3	3.4	8.3	0.7	0.7	4.3	1.1	2.0	4.3	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	7.1	7.1	3.0	4.2	4.3	1.7	3.1	4.0	1.7	2.2	1.3
LnGrp Delay(d),s/veh	44.7	30.2	30.4	44.1	25.2	25.3	40.5	19.5	21.4	40.4	18.6	18.0
LnGrp LOS	D	C	C	D	C	C	D	B	C	D	B	B
Approach Vol, veh/h		779			576			480			288	
Approach Delay, s/veh		32.3			29.2			23.5			23.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	33.0	11.6	25.4	10.1	33.0	10.9	26.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	5.2	10.4	7.4	15.9	5.2	6.1	6.8	10.7
Green Ext Time (p_c), s	0.1	2.7	0.1	5.0	0.1	2.9	0.1	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	151	57	107	77	24	55	394	163	18	309	15
Future Volume (veh/h)	41	151	57	107	77	24	55	394	163	18	309	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	159	60	113	81	25	58	415	172	19	325	16
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	266	97	173	133	41	118	565	234	172	848	42
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.07	0.45	0.45	0.10	0.48	0.48
Sat Flow, veh/h	1774	2544	925	1774	1367	422	1774	1252	519	1774	1761	87
Grp Volume(v), veh/h	43	109	110	113	0	106	58	0	587	19	0	341
Grp Sat Flow(s),veh/h/ln	1774	1770	1700	1774	0	1788	1774	0	1771	1774	0	1847
Q Serve(g_s), s	1.6	4.2	4.5	4.4	0.0	4.1	2.3	0.0	19.6	0.7	0.0	8.5
Cycle Q Clear(g_c), s	1.6	4.2	4.5	4.4	0.0	4.1	2.3	0.0	19.6	0.7	0.0	8.5
Prop In Lane	1.00		0.54	1.00		0.24	1.00		0.29	1.00		0.05
Lane Grp Cap(c), veh/h	185	185	177	173	0	175	118	0	799	172	0	889
V/C Ratio(X)	0.23	0.59	0.62	0.65	0.00	0.61	0.49	0.00	0.73	0.11	0.00	0.38
Avail Cap(c_a), veh/h	495	494	474	495	0	499	175	0	799	495	0	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.6	30.8	30.9	31.3	0.0	31.2	32.4	0.0	16.2	29.7	0.0	11.9
Incr Delay (d2), s/veh	0.6	3.0	3.5	4.1	0.0	3.4	3.1	0.0	5.9	0.3	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.2	2.3	2.4	0.0	2.2	1.2	0.0	10.8	0.4	0.0	4.6
LnGrp Delay(d),s/veh	30.3	33.8	34.4	35.4	0.0	34.6	35.6	0.0	22.2	30.0	0.0	13.1
LnGrp LOS	C	C	C	D		C	D		C	C		B
Approach Vol, veh/h		262			219			645			360	
Approach Delay, s/veh		33.5			35.0			23.4			14.0	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.0		12.0	9.3	39.2		11.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	12.7	21.6		6.5	4.3	10.5		6.4
Green Ext Time (p_c), s	0.0	0.1		1.1	0.0	6.8		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	578	160	49	292	50	132	235	82	67	151	267
Future Volume (veh/h)	381	578	160	49	292	50	132	235	82	67	151	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	397	602	167	51	304	52	138	245	85	70	157	278
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	809	224	102	587	99	173	684	673	118	627	786
Arrive On Green	0.16	0.30	0.30	0.06	0.19	0.19	0.10	0.37	0.37	0.07	0.34	0.34
Sat Flow, veh/h	1774	2740	759	1774	3030	512	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	397	388	381	51	176	180	138	245	85	70	157	278
Grp Sat Flow(s),veh/h/ln	1774	1770	1729	1774	1770	1772	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	13.5	16.8	16.8	2.4	7.5	7.7	6.4	8.1	2.8	3.2	5.2	9.1
Cycle Q Clear(g_c), s	13.5	16.8	16.8	2.4	7.5	7.7	6.4	8.1	2.8	3.2	5.2	9.1
Prop In Lane	1.00		0.44	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	523	511	102	343	343	173	684	673	118	627	786
V/C Ratio(X)	1.40	0.74	0.75	0.50	0.51	0.52	0.80	0.36	0.13	0.59	0.25	0.35
Avail Cap(c_a), veh/h	283	554	541	283	554	555	283	684	673	283	627	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	26.9	26.9	38.7	30.6	30.6	37.4	19.5	14.8	38.4	20.3	13.0
Incr Delay (d2), s/veh	201.3	5.1	5.3	3.7	1.2	1.2	8.2	1.5	0.4	4.6	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	8.9	8.8	1.3	3.8	3.9	3.5	4.4	1.3	1.7	2.8	4.2
LnGrp Delay(d),s/veh	236.8	32.0	32.2	42.4	31.8	31.9	45.5	21.0	15.2	43.0	21.3	14.3
LnGrp LOS	F	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		1166			407			468			505	
Approach Delay, s/veh		101.8			33.1			27.2			20.4	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	35.6	9.4	29.5	12.7	33.0	18.0	20.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	15.2	10.1	4.4	18.8	8.4	11.1	15.5	9.7
Green Ext Time (p_c), s	0.1	3.5	0.0	4.1	0.1	3.4	0.0	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	61.0
HCM 2010 LOS	E

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	309	161	181	592	47	132	487	103	57	631	290
Future Volume (veh/h)	147	309	161	181	592	47	132	487	103	57	631	290
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	156	329	171	193	630	50	140	518	110	61	671	309
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	820	367	230	841	67	175	1300	787	111	1172	696
Arrive On Green	0.11	0.23	0.23	0.13	0.25	0.25	0.10	0.37	0.37	0.06	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3323	263	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	156	329	171	193	335	345	140	518	110	61	671	309
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1816	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	7.4	6.8	8.0	9.1	15.0	15.1	6.6	9.3	3.2	2.9	13.5	11.7
Cycle Q Clear(g_c), s	7.4	6.8	8.0	9.1	15.0	15.1	6.6	9.3	3.2	2.9	13.5	11.7
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	820	367	230	448	460	175	1300	787	111	1172	696
V/C Ratio(X)	0.81	0.40	0.47	0.84	0.75	0.75	0.80	0.40	0.14	0.55	0.57	0.44
Avail Cap(c_a), veh/h	278	1090	488	278	545	559	278	1300	787	278	1172	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	28.0	28.5	36.6	29.6	29.6	38.0	20.2	11.7	39.2	23.8	16.8
Incr Delay (d2), s/veh	11.2	0.3	0.9	17.2	4.6	4.5	8.4	0.9	0.4	4.2	2.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.3	3.6	5.6	7.9	8.1	3.7	4.7	1.5	1.5	6.9	5.5
LnGrp Delay(d),s/veh	48.7	28.3	29.4	53.8	34.2	34.1	46.4	21.1	12.1	43.4	25.8	18.9
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		656			873			768			1041	
Approach Delay, s/veh		33.5			38.5			24.4			24.8	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	36.1	15.7	24.4	13.0	33.0	13.8	26.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.9	11.3	11.1	10.0	8.6	15.5	9.4	17.1
Green Ext Time (p_c), s	0.1	8.6	0.1	6.6	0.1	7.2	0.1	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	712	0	0	973
Future Vol, veh/h	0	9	712	0	0	973
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	757	0	0	1035

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1275	379	0	0	757	0
Stage 1	757	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	159	619	-	-	850	-
Stage 1	424	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	159	619	-	-	850	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	850	-
HCM Lane V/C Ratio	-	-	0.015	-	-
HCM Control Delay (s)	-	-	10.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

HCM 2010 Signalized Intersection Summary
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2022) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	56	156	56	72	6	124	689	84	18	940	46
Future Volume (veh/h)	45	56	156	56	72	6	124	689	84	18	940	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	46	58	161	58	74	6	128	710	87	19	969	47
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	77	214	120	345	293	165	1658	742	55	1438	643
Arrive On Green	0.06	0.18	0.18	0.07	0.19	0.19	0.09	0.47	0.47	0.03	0.41	0.41
Sat Flow, veh/h	1774	437	1212	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	46	0	219	58	74	6	128	710	87	19	969	47
Grp Sat Flow(s),veh/h/ln	1774	0	1649	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.8	0.0	8.8	2.2	2.4	0.2	4.9	9.4	2.2	0.7	15.7	1.3
Cycle Q Clear(g_c), s	1.8	0.0	8.8	2.2	2.4	0.2	4.9	9.4	2.2	0.7	15.7	1.3
Prop In Lane	1.00		0.74	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	0	291	120	345	293	165	1658	742	55	1438	643
V/C Ratio(X)	0.44	0.00	0.75	0.48	0.21	0.02	0.78	0.43	0.12	0.35	0.67	0.07
Avail Cap(c_a), veh/h	342	0	623	342	704	598	342	1658	742	342	1438	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	27.4	31.5	24.3	23.4	31.1	12.4	10.5	33.3	17.0	12.7
Incr Delay (d2), s/veh	2.9	0.0	3.9	3.0	0.3	0.0	7.7	0.8	0.3	3.7	2.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.3	1.2	1.2	0.1	2.8	4.7	1.0	0.4	8.2	0.6
LnGrp Delay(d),s/veh	34.7	0.0	31.3	34.5	24.6	23.4	38.8	13.2	10.8	37.0	19.6	13.0
LnGrp LOS	C		C	C	C	C	D	B	B	D	B	B
Approach Vol, veh/h		265			138			925			1035	
Approach Delay, s/veh		31.9			28.7			16.5			19.6	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	37.3	9.2	16.9	11.0	33.0	8.6	17.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	2.7	11.4	4.2	10.8	6.9	17.7	3.8	4.4
Green Ext Time (p_c), s	0.0	10.9	0.1	1.6	0.1	7.7	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
4: Heacock St & SR 60 WB Ramp

Festival at Moreno Valley Mixed Use
Future (2022) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	342	4	177	332	719	0	0	852	327
Future Volume (veh/h)	0	0	0	342	4	177	332	719	0	0	852	327
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				356	4	184	346	749	0	0	888	341
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				429	5	387	383	2310	0	0	966	369
Arrive On Green				0.24	0.24	0.24	0.22	0.65	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1755	20	1583	1774	3632	0	0	2599	958
Grp Volume(v), veh/h				360	0	184	346	749	0	0	626	603
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1694
Q Serve(g_s), s				16.8	0.0	8.7	16.6	8.2	0.0	0.0	29.4	29.7
Cycle Q Clear(g_c), s				16.8	0.0	8.7	16.6	8.2	0.0	0.0	29.4	29.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				434	0	387	383	2310	0	0	682	653
V/C Ratio(X)				0.83	0.00	0.48	0.90	0.32	0.00	0.00	0.92	0.92
Avail Cap(c_a), veh/h				688	0	614	424	2310	0	0	682	653
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	28.3	33.4	6.7	0.0	0.0	25.6	25.7
Incr Delay (d2), s/veh				4.8	0.0	0.9	21.1	0.4	0.0	0.0	19.4	20.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.8	0.0	3.9	10.3	4.1	0.0	0.0	17.9	17.5
LnGrp Delay(d),s/veh				36.1	0.0	29.2	54.5	7.1	0.0	0.0	44.9	46.4
LnGrp LOS				D		C	D	A			D	D
Approach Vol, veh/h					544			1095			1229	
Approach Delay, s/veh					33.8			22.1			45.7	
Approach LOS					C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			23.4	38.2		25.9
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		10.2			18.6	31.7		18.8
Green Ext Time (p_c), s		21.7			0.3	0.0		2.6

Intersection Summary		
HCM 2010 Ctrl Delay		34.4
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	4	510	0	0	0	0	795	182	168	991	0
Future Volume (veh/h)	247	4	510	0	0	0	0	795	182	168	991	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	255	0	520				0	811	186	171	1011	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1855	422	210	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.45	0.45	0.12	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	4311	943	1774	3632	0
Grp Volume(v), veh/h	255	0	520				0	663	334	171	1011	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1696	1774	1770	0
Q Serve(g_s), s	5.4	0.0	29.9				0.0	13.4	13.6	9.4	15.6	0.0
Cycle Q Clear(g_c), s	5.4	0.0	29.9				0.0	13.4	13.6	9.4	15.6	0.0
Prop In Lane	1.00		1.00				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1518	760	210	2162	0
V/C Ratio(X)	0.24	0.00	1.10				0.00	0.44	0.44	0.82	0.47	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1518	760	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.5	0.0	35.0				0.0	18.9	19.0	43.0	10.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	70.8				0.0	0.2	0.4	7.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	22.3				0.0	6.3	6.4	5.0	7.8	0.0
LnGrp Delay(d),s/veh	26.6	0.0	105.9				0.0	19.1	19.4	50.6	11.3	0.0
LnGrp LOS	C		F					B	B	D	B	
Approach Vol, veh/h		775						997			1182	
Approach Delay, s/veh		79.8						19.2			17.0	
Approach LOS		E						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.3	49.3		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.9	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	11.4	15.6		31.9		17.6		
Green Ext Time (p_c), s	0.4	8.6		0.0		21.4		

Intersection Summary	
HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	157	1	0	281	0	0	0	1	0	0	0
Future Vol, veh/h	0	157	1	0	281	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	173	1	0	309	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	309	0	0	174	0	0	327	482	87	395	483	154
Stage 1	-	-	-	-	-	-	173	173	-	309	309	-
Stage 2	-	-	-	-	-	-	154	309	-	86	174	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1248	-	-	1400	-	-	602	482	954	539	482	864
Stage 1	-	-	-	-	-	-	812	755	-	676	658	-
Stage 2	-	-	-	-	-	-	833	658	-	912	754	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1248	-	-	1400	-	-	602	482	954	538	482	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	602	482	-	538	482	-
Stage 1	-	-	-	-	-	-	812	755	-	676	658	-
Stage 2	-	-	-	-	-	-	833	658	-	911	754	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	954	1248	-	-	1400	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	205	42	3	198	5	28	0	3	4	0	58
Future Vol, veh/h	106	205	42	3	198	5	28	0	3	4	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	238	49	3	230	6	33	0	3	5	0	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	236	0	0	287	0	0	749	752	144	606	774	233
Stage 1	-	-	-	-	-	-	509	509	-	240	240	-
Stage 2	-	-	-	-	-	-	240	243	-	366	534	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1330	-	-	1274	-	-	314	338	878	395	329	805
Stage 1	-	-	-	-	-	-	516	537	-	763	706	-
Stage 2	-	-	-	-	-	-	763	704	-	627	524	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1274	-	-	267	306	878	365	298	805
Mov Cap-2 Maneuver	-	-	-	-	-	-	267	306	-	365	298	-
Stage 1	-	-	-	-	-	-	468	487	-	692	704	-
Stage 2	-	-	-	-	-	-	697	702	-	567	476	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.1	19.4	10.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	286	1330	-	-	1274	-	-	365	805
HCM Lane V/C Ratio	0.126	0.093	-	-	0.003	-	-	0.013	0.084
HCM Control Delay (s)	19.4	8	-	-	7.8	-	-	15	9.9
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.4	0.3	-	-	0	-	-	0	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	193	198	4	0	6
Future Vol, veh/h	18	193	198	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	230	236	5	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	240	0	-	0	511	238
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1327	-	-	-	523	801
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	773	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1327	-	-	-	514	801
Mov Cap-2 Maneuver	-	-	-	-	590	-
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	759	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1327	-	-	-	801
HCM Lane V/C Ratio	0.016	-	-	-	0.009
HCM Control Delay (s)	7.8	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	105	151	38	19	53
Future Vol, veh/h	89	105	151	38	19	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	117	168	42	21	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	210	0	-	0	503	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	314	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1361	-	-	-	528	853
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1361	-	-	-	487	853
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1361	-	-	-	750
HCM Lane V/C Ratio	0.073	-	-	-	0.107
HCM Control Delay (s)	7.9	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	119	3	22	181	33	3	0	15	16	0	3
Future Vol, veh/h	2	119	3	22	181	33	3	0	15	16	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	138	3	26	210	38	3	0	17	19	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	249	0	0	142	0	0	428	445	140	434	428	230
Stage 1	-	-	-	-	-	-	145	145	-	281	281	-
Stage 2	-	-	-	-	-	-	283	300	-	153	147	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1317	-	-	1441	-	-	537	508	908	532	519	809
Stage 1	-	-	-	-	-	-	858	777	-	726	678	-
Stage 2	-	-	-	-	-	-	724	666	-	849	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1317	-	-	1441	-	-	525	496	908	513	507	809
Mov Cap-2 Maneuver	-	-	-	-	-	-	525	496	-	513	507	-
Stage 1	-	-	-	-	-	-	856	775	-	725	664	-
Stage 2	-	-	-	-	-	-	706	652	-	831	773	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	9.6	11.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	810	1317	-	-	1441	-	-	544
HCM Lane V/C Ratio	0.026	0.002	-	-	0.018	-	-	0.041
HCM Control Delay (s)	9.6	7.7	0	-	7.5	0	-	11.9
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	150	156	4	0	7
Future Vol, veh/h	0	150	156	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	172	179	5	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	182
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	861
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	861
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	861
HCM Lane V/C Ratio	-	-	-	0.009
HCM Control Delay (s)	-	-	-	9.2
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	436	11	11	747	174	7	0	7	142	0	87
Future Volume (veh/h)	51	436	11	11	747	174	7	0	7	142	0	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	495	12	12	849	198	8	0	8	161	0	99
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	1650	40	42	1056	244	343	17	306	707	0	703
Arrive On Green	0.04	0.47	0.47	0.38	0.38	0.38	0.44	0.00	0.44	0.44	0.00	0.44
Sat Flow, veh/h	1774	3532	86	15	2773	641	652	38	690	1402	0	1583
Grp Volume(v), veh/h	58	248	259	571	0	488	16	0	0	161	0	99
Grp Sat Flow(s),veh/h/ln	1774	1770	1848	1847	0	1582	1379	0	0	1402	0	1583
Q Serve(g_s), s	3.3	8.8	8.8	4.1	0.0	28.0	0.0	0.0	0.0	2.4	0.0	3.8
Cycle Q Clear(g_c), s	3.3	8.8	8.8	27.8	0.0	28.0	3.8	0.0	0.0	6.2	0.0	3.8
Prop In Lane	1.00		0.05	0.02		0.41	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	74	827	863	740	0	603	666	0	0	707	0	703
V/C Ratio(X)	0.78	0.30	0.30	0.77	0.00	0.81	0.02	0.00	0.00	0.23	0.00	0.14
Avail Cap(c_a), veh/h	88	827	863	872	0	718	666	0	0	707	0	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.1	16.7	16.7	28.0	0.0	28.1	15.8	0.0	0.0	17.3	0.0	16.7
Incr Delay (d2), s/veh	30.8	0.2	0.2	3.6	0.0	6.0	0.1	0.0	0.0	0.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.3	4.5	15.0	0.0	13.2	0.3	0.0	0.0	2.9	0.0	1.7
LnGrp Delay(d),s/veh	78.9	16.9	16.9	31.6	0.0	34.1	15.9	0.0	0.0	18.0	0.0	17.1
LnGrp LOS	E	B	B	C		C	B			B		B
Approach Vol, veh/h		565			1059			16			260	
Approach Delay, s/veh		23.3			32.7			15.9			17.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		51.9		49.5	8.8	43.1
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		5.8		10.8		8.2	5.3	30.0
Green Ext Time (p_c), s		1.2		13.8		1.2	0.0	8.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	412	137	114	680	94	132	146	69	105	173	91
Future Volume (veh/h)	36	412	137	114	680	94	132	146	69	105	173	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	490	163	136	810	112	157	174	82	125	206	108
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	687	227	170	958	132	193	645	548	158	608	517
Arrive On Green	0.05	0.26	0.26	0.10	0.31	0.31	0.11	0.35	0.35	0.09	0.33	0.33
Sat Flow, veh/h	1774	2615	865	1774	3124	432	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	43	331	322	136	459	463	157	174	82	125	206	108
Grp Sat Flow(s),veh/h/ln	1774	1770	1710	1774	1770	1787	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.1	14.8	14.9	6.5	21.2	21.2	7.6	5.9	3.1	6.0	7.3	4.3
Cycle Q Clear(g_c), s	2.1	14.8	14.9	6.5	21.2	21.2	7.6	5.9	3.1	6.0	7.3	4.3
Prop In Lane	1.00		0.51	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	465	449	170	542	548	193	645	548	158	608	517
V/C Ratio(X)	0.47	0.71	0.72	0.80	0.85	0.85	0.82	0.27	0.15	0.79	0.34	0.21
Avail Cap(c_a), veh/h	274	537	519	274	542	548	274	645	548	274	608	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	29.2	29.2	38.6	28.3	28.3	38.0	20.6	19.7	39.0	22.2	21.2
Incr Delay (d2), s/veh	3.6	3.7	4.0	8.4	11.8	11.7	11.9	1.0	0.6	8.6	1.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.6	7.6	3.6	12.1	12.2	4.3	3.2	1.5	3.3	4.0	2.0
LnGrp Delay(d),s/veh	43.8	32.9	33.2	47.0	40.1	40.0	49.9	21.6	20.2	47.6	23.7	22.1
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		696			1058			413			439	
Approach Delay, s/veh		33.7			41.0			32.1			30.1	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	34.7	12.9	27.4	14.0	33.0	9.0	31.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	9.0	7.9	8.5	16.9	9.6	9.3	4.1	23.2
Green Ext Time (p_c), s	0.1	2.8	0.1	6.0	0.1	2.7	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	70	27	76	74	65	40	255	66	47	365	18
Future Volume (veh/h)	1	70	27	76	74	65	40	255	66	47	365	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	88	34	95	92	81	50	319	82	59	456	22
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	222	82	241	124	109	108	625	161	169	831	40
Arrive On Green	0.09	0.09	0.09	0.14	0.14	0.14	0.06	0.44	0.44	0.10	0.47	0.47
Sat Flow, veh/h	1774	2535	933	1774	915	806	1774	1430	368	1774	1763	85
Grp Volume(v), veh/h	1	60	62	95	0	173	50	0	401	59	0	478
Grp Sat Flow(s),veh/h/ln	1774	1770	1698	1774	0	1721	1774	0	1798	1774	0	1848
Q Serve(g_s), s	0.0	2.4	2.5	3.6	0.0	7.1	2.0	0.0	11.9	2.3	0.0	13.6
Cycle Q Clear(g_c), s	0.0	2.4	2.5	3.6	0.0	7.1	2.0	0.0	11.9	2.3	0.0	13.6
Prop In Lane	1.00		0.55	1.00		0.47	1.00		0.20	1.00		0.05
Lane Grp Cap(c), veh/h	155	155	148	241	0	233	108	0	786	169	0	871
V/C Ratio(X)	0.01	0.39	0.42	0.39	0.00	0.74	0.46	0.00	0.51	0.35	0.00	0.55
Avail Cap(c_a), veh/h	484	483	464	484	0	470	171	0	786	484	0	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	31.7	31.8	29.0	0.0	30.6	33.4	0.0	15.0	31.2	0.0	13.9
Incr Delay (d2), s/veh	0.0	1.6	1.9	1.0	0.0	4.6	3.1	0.0	2.4	1.2	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.3	1.8	0.0	3.7	1.1	0.0	6.4	1.2	0.0	7.5
LnGrp Delay(d),s/veh	30.7	33.3	33.7	30.1	0.0	35.2	36.5	0.0	17.4	32.4	0.0	16.4
LnGrp LOS	C	C	C	C		D	D		B	C		B
Approach Vol, veh/h		123			268			451			537	
Approach Delay, s/veh		33.5			33.4			19.5			18.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	36.7		10.9	9.0	39.2		14.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	14.3	13.9		4.5	4.0	15.6		9.1
Green Ext Time (p_c), s	0.1	3.4		0.5	0.0	5.6		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	22.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	189	81	22	247	38	101	224	65	63	250	171
Future Volume (veh/h)	123	189	81	22	247	38	101	224	65	63	250	171
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	138	212	91	25	278	43	113	252	73	71	281	192
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	545	226	68	500	76	155	768	714	131	743	789
Arrive On Green	0.10	0.22	0.22	0.04	0.16	0.16	0.09	0.41	0.41	0.07	0.40	0.40
Sat Flow, veh/h	1774	2441	1013	1774	3079	471	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	138	152	151	25	158	163	113	252	73	71	281	192
Grp Sat Flow(s),veh/h/ln	1774	1770	1684	1774	1770	1780	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.4	5.2	5.5	1.0	5.9	6.0	4.4	6.6	1.9	2.8	7.6	4.9
Cycle Q Clear(g_c), s	5.4	5.2	5.5	1.0	5.9	6.0	4.4	6.6	1.9	2.8	7.6	4.9
Prop In Lane	1.00		0.60	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	395	376	68	287	289	155	768	714	131	743	789
V/C Ratio(X)	0.78	0.38	0.40	0.37	0.55	0.56	0.73	0.33	0.10	0.54	0.38	0.24
Avail Cap(c_a), veh/h	335	656	625	335	656	660	335	768	714	335	743	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	23.6	23.7	33.5	27.5	27.6	31.8	14.3	11.3	31.9	15.2	10.2
Incr Delay (d2), s/veh	7.4	0.6	0.7	3.3	1.7	1.7	6.4	1.1	0.3	3.4	1.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.6	2.6	0.5	3.0	3.1	2.4	3.6	0.9	1.5	4.2	2.3
LnGrp Delay(d),s/veh	38.8	24.2	24.4	36.8	29.2	29.3	38.1	15.4	11.6	35.3	16.7	11.0
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		441			346			438			544	
Approach Delay, s/veh		28.8			29.8			20.6			17.1	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	34.0	7.2	20.5	10.8	33.0	11.6	16.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.8	8.6	3.0	7.5	6.4	9.6	7.4	8.0
Green Ext Time (p_c), s	0.1	4.1	0.0	3.6	0.1	4.0	0.2	3.6

Intersection Summary		
HCM 2010 Ctrl Delay		23.4
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	499	208	109	357	44	260	784	207	82	620	227
Future Volume (veh/h)	251	499	208	109	357	44	260	784	207	82	620	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	256	509	212	111	364	45	265	800	211	84	633	232
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	924	413	141	610	75	263	1394	749	120	1108	731
Arrive On Green	0.15	0.26	0.26	0.08	0.19	0.19	0.15	0.39	0.39	0.07	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3174	390	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	256	509	212	111	202	207	265	800	211	84	633	232
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1794	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.1	11.3	10.4	5.6	9.5	9.6	13.5	16.1	7.4	4.2	13.6	8.4
Cycle Q Clear(g_c), s	13.1	11.3	10.4	5.6	9.5	9.6	13.5	16.1	7.4	4.2	13.6	8.4
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	924	413	141	340	345	263	1394	749	120	1108	731
V/C Ratio(X)	0.97	0.55	0.51	0.79	0.59	0.60	1.01	0.57	0.28	0.70	0.57	0.32
Avail Cap(c_a), veh/h	263	1031	461	263	515	522	263	1394	749	263	1108	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	29.0	28.7	41.1	33.5	33.6	38.8	21.6	14.6	41.5	26.1	15.5
Incr Delay (d2), s/veh	47.7	0.5	1.0	9.3	1.7	1.7	57.2	1.7	0.9	7.1	2.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	5.6	4.7	3.1	4.8	4.9	10.8	8.2	3.4	2.3	7.0	3.9
LnGrp Delay(d),s/veh	86.3	29.5	29.7	50.4	35.2	35.2	96.0	23.3	15.5	48.7	28.3	16.6
LnGrp LOS	F	C	C	D	D	D	F	C	B	D	C	B
Approach Vol, veh/h		977			520			1276			949	
Approach Delay, s/veh		44.4			38.4			37.1			27.2	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	40.3	11.7	28.3	18.0	33.0	18.0	22.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.2	18.1	7.6	13.3	15.5	15.6	15.1	11.6
Green Ext Time (p_c), s	0.1	7.1	0.1	5.5	0.0	8.4	0.0	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	38	1213	0	0	936
Future Vol, veh/h	0	38	1213	0	0	936
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	1238	0	0	955

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1620	619	0	0	1238	0
Stage 1	1238	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	118	432	-	-	558	-
Stage 1	232	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	432	-	-	558	-
Mov Cap-2 Maneuver	118	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	432	558	-
HCM Lane V/C Ratio	-	-	0.09	-	-
HCM Control Delay (s)	-	-	14.2	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

HCM 2010 Signalized Intersection Summary
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	114	245	252	105	24	226	1183	247	49	869	52
Future Volume (veh/h)	63	114	245	252	105	24	226	1183	247	49	869	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	115	247	255	106	24	228	1195	249	49	878	53
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	127	273	247	598	508	247	1348	603	94	1042	466
Arrive On Green	0.06	0.24	0.24	0.14	0.32	0.32	0.14	0.38	0.38	0.05	0.29	0.29
Sat Flow, veh/h	1774	528	1134	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	0	362	255	106	24	228	1195	249	49	878	53
Grp Sat Flow(s),veh/h/ln	1774	0	1663	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.4	0.0	20.5	13.5	4.0	1.0	12.3	30.6	11.2	2.6	22.5	2.4
Cycle Q Clear(g_c), s	3.4	0.0	20.5	13.5	4.0	1.0	12.3	30.6	11.2	2.6	22.5	2.4
Prop In Lane	1.00		0.68	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	0	400	247	598	508	247	1348	603	94	1042	466
V/C Ratio(X)	0.61	0.00	0.90	1.03	0.18	0.05	0.92	0.89	0.41	0.52	0.84	0.11
Avail Cap(c_a), veh/h	247	0	455	247	598	508	247	1348	603	247	1042	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	35.7	41.7	23.7	22.7	41.1	28.0	22.0	44.6	32.1	24.9
Incr Delay (d2), s/veh	5.5	0.0	19.8	65.4	0.1	0.0	36.7	8.9	2.1	4.4	8.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	11.6	11.0	2.1	0.4	8.5	16.6	5.2	1.4	12.2	1.1
LnGrp Delay(d),s/veh	50.0	0.0	55.4	107.1	23.8	22.7	77.9	36.9	24.1	49.1	40.3	25.4
LnGrp LOS	D		E	F	C	C	E	D	C	D	D	C
Approach Vol, veh/h		426			385			1672			980	
Approach Delay, s/veh		54.6			78.9			40.6			40.0	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	41.4	18.0	27.8	18.0	33.0	10.2	35.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.6	32.6	15.5	22.5	14.3	24.5	5.4	6.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	3.6	0.1	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.4
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
4: Heacock St & SR 60 WB Ramp

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	347	4	231	442	1433	0	0	1034	471
Future Volume (veh/h)	0	0	0	347	4	231	442	1433	0	0	1034	471
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				361	4	241	460	1493	0	0	1077	491
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				437	5	394	421	2297	0	0	860	381
Arrive On Green				0.25	0.25	0.25	0.24	0.65	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1756	19	1583	1774	3632	0	0	2481	1058
Grp Volume(v), veh/h				365	0	241	460	1493	0	0	790	778
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1676
Q Serve(g_s), s				17.1	0.0	11.9	20.9	22.5	0.0	0.0	31.7	31.7
Cycle Q Clear(g_c), s				17.1	0.0	11.9	20.9	22.5	0.0	0.0	31.7	31.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.63
Lane Grp Cap(c), veh/h				442	0	394	421	2297	0	0	638	604
V/C Ratio(X)				0.83	0.00	0.61	1.09	0.65	0.00	0.00	1.24	1.29
Avail Cap(c_a), veh/h				684	0	610	421	2297	0	0	638	604
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	29.3	33.5	9.4	0.0	0.0	28.1	28.1
Incr Delay (d2), s/veh				4.9	0.0	1.5	70.9	1.4	0.0	0.0	120.9	141.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	0.0	5.3	18.5	11.2	0.0	0.0	36.8	38.4
LnGrp Delay(d),s/veh				36.2	0.0	30.8	104.4	10.8	0.0	0.0	149.0	169.9
LnGrp LOS				D		C	F	B			F	F
Approach Vol, veh/h					606			1953			1568	
Approach Delay, s/veh					34.0			32.9			159.4	
Approach LOS					C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			25.4	36.2		26.4
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		24.5			22.9	33.7		19.1
Green Ext Time (p_c), s		28.2			0.0	0.0		2.8

Intersection Summary		
HCM 2010 Ctrl Delay		81.1
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	3	548	0	0	0	0	1296	431	252	1010	0
Future Volume (veh/h)	590	3	548	0	0	0	0	1296	431	252	1010	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	617	0	571				0	1350	449	262	1052	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1498	495	302	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.40	0.40	0.17	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	3949	1251	1774	3632	0
Grp Volume(v), veh/h	617	0	571				0	1209	590	262	1052	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1642	1774	1770	0
Q Serve(g_s), s	14.8	0.0	29.9				0.0	33.5	33.8	14.4	16.5	0.0
Cycle Q Clear(g_c), s	14.8	0.0	29.9				0.0	33.5	33.8	14.4	16.5	0.0
Prop In Lane	1.00		1.00				0.00		0.76	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1343	650	302	2162	0
V/C Ratio(X)	0.58	0.00	1.21				0.00	0.90	0.91	0.87	0.49	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1343	650	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.7	0.0	35.0				0.0	28.4	28.5	40.4	10.8	0.0
Incr Delay (d2), s/veh	0.8	0.0	111.3				0.0	8.6	16.5	7.6	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	27.7				0.0	17.2	18.2	7.7	8.1	0.0
LnGrp Delay(d),s/veh	30.5	0.0	146.3				0.0	37.0	44.9	48.0	11.6	0.0
LnGrp LOS	C		F					D	D	D	B	
Approach Vol, veh/h		1188						1799			1314	
Approach Delay, s/veh		86.2						39.6			18.8	
Approach LOS		F						D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	21.5	44.1		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	16.4	35.8		31.9		18.5		
Green Ext Time (p_c), s	0.6	0.0		0.0		32.7		

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑			↕			↕	
Traffic Vol, veh/h	0	421	19	0	695	0	0	0	24	0	0	0
Future Vol, veh/h	0	421	19	0	695	0	0	0	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	448	20	0	739	0	0	0	26	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	1197	1197	234	918	1207	739
Stage 1	-	-	-	-	-	-	458	458	-	739	739	-
Stage 2	-	-	-	-	-	-	739	739	-	179	468	-
Critical Hdwy	-	-	-	-	-	-	6.78	6.53	7.13	6.78	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	7.33	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.73	5.53	-
Follow-up Hdwy	-	-	-	-	-	-	3.669	4.019	3.919	3.669	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	178	185	655	268	183	416
Stage 1	0	-	-	0	-	0	483	566	-	397	423	-
Stage 2	0	-	-	0	-	0	397	423	-	768	560	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	178	185	655	258	183	416
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	185	-	258	183	-
Stage 1	-	-	-	-	-	-	483	566	-	397	423	-
Stage 2	-	-	-	-	-	-	397	423	-	738	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.7	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	655	-	-	-	-
HCM Lane V/C Ratio	0.039	-	-	-	-
HCM Control Delay (s)	10.7	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	200.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	273	332	156	28	279	36	164	2	24	38	0	243
Future Vol, veh/h	273	332	156	28	279	36	164	2	24	38	0	243
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	310	377	177	32	317	41	186	2	27	43	0	276

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	555	0	0	1487	1508	277	1211	1576	338
Stage 1	-	-	-	-	-	-	1086	1086	-	401	401	-
Stage 2	-	-	-	-	-	-	401	422	-	810	1175	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1199	-	-	1013	-	-	~ 94	120	721	148	109	703
Stage 1	-	-	-	-	-	-	232	292	-	625	600	-
Stage 2	-	-	-	-	-	-	625	587	-	341	265	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1199	-	-	1013	-	-	~ 45	86	721	109	78	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 45	86	-	109	78	-
Stage 1	-	-	-	-	-	-	~ 172	217	-	463	581	-
Stage 2	-	-	-	-	-	-	368	568	-	241	196	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0.7	$ 1617.9	19.5
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	51	1199	-	-	1013	-	-	109	703
HCM Lane V/C Ratio	4.234	0.259	-	-	0.031	-	-	0.396	0.393
HCM Control Delay (s)	$ 1617.9	9	-	-	8.7	-	-	58.2	13.4
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	24	1	-	-	0.1	-	-	1.6	1.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	382	332	8	11	11
Future Vol, veh/h	12	382	332	8	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	420	365	9	12	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	374	0	-	0	815	369
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1184	-	-	-	347	677
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1184	-	-	-	342	677
Mov Cap-2 Maneuver	-	-	-	-	459	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	636	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1184	-	-	-	547
HCM Lane V/C Ratio	0.011	-	-	-	0.044
HCM Control Delay (s)	8.1	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	205	185	120	80	102	223
Future Vol, veh/h	205	185	120	80	102	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	203	132	88	112	245

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	220	0	-	0	830	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1349	-	-	-	340	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1349	-	-	-	276	867
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	420	-

Approach	EB	WB	SB
HCM Control Delay, s	4.3	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1349	-	-	-	599
HCM Lane V/C Ratio	0.167	-	-	-	0.596
HCM Control Delay (s)	8.2	-	-	-	19.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	3.9

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	250	24	88	156	102	24	0	93	84	0	20
Future Vol, veh/h	13	250	24	88	156	102	24	0	93	84	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	269	26	95	168	110	26	0	100	90	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	277	0	0	295	0	0	733	777	282	772	735	223
Stage 1	-	-	-	-	-	-	310	310	-	412	412	-
Stage 2	-	-	-	-	-	-	423	467	-	360	323	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1286	-	-	1266	-	-	336	328	757	317	347	817
Stage 1	-	-	-	-	-	-	700	659	-	617	594	-
Stage 2	-	-	-	-	-	-	609	562	-	658	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1286	-	-	1266	-	-	302	295	757	254	312	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	295	-	254	312	-
Stage 1	-	-	-	-	-	-	691	650	-	609	541	-
Stage 2	-	-	-	-	-	-	540	511	-	564	642	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	2.1	13	24.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	578	1286	-	-	1266	-	-	293
HCM Lane V/C Ratio	0.218	0.011	-	-	0.075	-	-	0.382
HCM Control Delay (s)	13	7.8	0	-	8.1	0	-	24.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.2	-	-	1.7

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	427	216	9	0	10
Future Vol, veh/h	0	427	216	9	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	454	230	10	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	235
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	804
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	804
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	804
HCM Lane V/C Ratio	-	-	-	0.013
HCM Control Delay (s)	-	-	-	9.5
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	670	44	43	420	53	47	0	47	72	0	52
Future Volume (veh/h)	94	670	44	43	420	53	47	0	47	72	0	52
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	108	770	51	49	483	61	54	0	54	83	0	60
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	1693	112	117	1095	137	334	16	300	630	0	657
Arrive On Green	0.05	0.50	0.50	0.41	0.41	0.41	0.41	0.00	0.41	0.41	0.00	0.41
Sat Flow, veh/h	1774	3370	223	189	2639	330	685	38	723	1345	0	1583
Grp Volume(v), veh/h	108	404	417	290	0	303	108	0	0	83	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1823	1521	0	1637	1445	0	0	1345	0	1583
Q Serve(g_s), s	5.0	16.0	16.0	2.8	0.0	14.4	2.8	0.0	0.0	0.0	0.0	2.5
Cycle Q Clear(g_c), s	5.0	16.0	16.0	12.5	0.0	14.4	5.3	0.0	0.0	3.8	0.0	2.5
Prop In Lane	1.00		0.12	0.17		0.20	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	82	889	916	670	0	679	649	0	0	630	0	657
V/C Ratio(X)	1.32	0.45	0.46	0.43	0.00	0.45	0.17	0.00	0.00	0.13	0.00	0.09
Avail Cap(c_a), veh/h	82	889	916	670	0	679	649	0	0	630	0	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	17.4	17.4	22.1	0.0	22.8	20.1	0.0	0.0	19.7	0.0	19.3
Incr Delay (d2), s/veh	207.5	1.7	1.6	2.0	0.0	2.1	0.6	0.0	0.0	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	8.2	8.4	6.4	0.0	6.9	2.1	0.0	0.0	1.6	0.0	1.1
LnGrp Delay(d),s/veh	259.3	19.1	19.0	24.1	0.0	24.9	20.6	0.0	0.0	20.1	0.0	19.6
LnGrp LOS	F	B	B	C		C	C			C		B
Approach Vol, veh/h		929			593			108			143	
Approach Delay, s/veh		47.0			24.5			20.6			19.9	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		59.0		49.5	9.5	49.5		49.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		45.0		45.0	5.0	45.0		45.0
Max Q Clear Time (g_c+I1), s		18.0		5.8	7.0	16.4		7.3
Green Ext Time (p_c), s		10.9		1.3	0.0	11.2		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	558	94	121	363	62	67	185	213	66	136	74
Future Volume (veh/h)	100	558	94	121	363	62	67	185	213	66	136	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	109	607	102	132	395	67	73	201	232	72	148	80
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	812	136	167	857	144	123	650	553	122	650	552
Arrive On Green	0.08	0.27	0.27	0.09	0.28	0.28	0.07	0.35	0.35	0.07	0.35	0.35
Sat Flow, veh/h	1774	3034	509	1774	3032	510	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	109	354	355	132	229	233	73	201	232	72	148	80
Grp Sat Flow(s),veh/h/ln	1774	1770	1773	1774	1770	1773	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.9	14.9	15.0	6.0	8.7	8.9	3.3	6.4	9.1	3.2	4.6	2.8
Cycle Q Clear(g_c), s	4.9	14.9	15.0	6.0	8.7	8.9	3.3	6.4	9.1	3.2	4.6	2.8
Prop In Lane	1.00		0.29	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	474	475	167	500	501	123	650	553	122	650	552
V/C Ratio(X)	0.78	0.75	0.75	0.79	0.46	0.46	0.59	0.31	0.42	0.59	0.23	0.14
Avail Cap(c_a), veh/h	293	574	575	293	574	575	293	650	553	293	650	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	27.4	27.4	36.2	24.2	24.2	36.9	19.4	20.3	36.9	18.8	18.3
Incr Delay (d2), s/veh	8.9	4.3	4.4	8.1	0.7	0.7	4.5	1.2	2.3	4.4	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.8	7.9	3.3	4.4	4.4	1.8	3.5	4.3	1.7	2.5	1.3
LnGrp Delay(d),s/veh	45.9	31.7	31.8	44.4	24.8	24.9	41.4	20.6	22.6	41.4	19.6	18.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	B	B
Approach Vol, veh/h		818			594			506			300	
Approach Delay, s/veh		33.6			29.2			24.5			24.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	33.0	12.2	26.4	10.2	33.0	11.0	27.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.9	11.1	8.0	17.0	5.3	6.6	6.9	10.9
Green Ext Time (p_c), s	0.1	2.9	0.1	4.9	0.1	3.1	0.1	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	173	71	107	93	24	67	394	163	18	309	34
Future Volume (veh/h)	65	173	71	107	93	24	67	394	163	18	309	34
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	68	182	75	113	98	25	71	415	172	19	325	36
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	291	115	182	147	37	128	557	231	167	768	85
Arrive On Green	0.12	0.12	0.12	0.10	0.10	0.10	0.07	0.44	0.44	0.09	0.47	0.47
Sat Flow, veh/h	1774	2475	983	1774	1433	365	1774	1252	519	1774	1648	183
Grp Volume(v), veh/h	68	128	129	113	0	123	71	0	587	19	0	361
Grp Sat Flow(s),veh/h/ln	1774	1770	1689	1774	0	1798	1774	0	1771	1774	0	1831
Q Serve(g_s), s	2.6	5.1	5.4	4.5	0.0	4.9	2.9	0.0	20.5	0.7	0.0	9.8
Cycle Q Clear(g_c), s	2.6	5.1	5.4	4.5	0.0	4.9	2.9	0.0	20.5	0.7	0.0	9.8
Prop In Lane	1.00		0.58	1.00		0.20	1.00		0.29	1.00		0.10
Lane Grp Cap(c), veh/h	208	208	198	182	0	184	128	0	787	167	0	853
V/C Ratio(X)	0.33	0.62	0.65	0.62	0.00	0.67	0.55	0.00	0.75	0.11	0.00	0.42
Avail Cap(c_a), veh/h	479	478	456	479	0	485	169	0	787	479	0	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	31.3	31.4	32.0	0.0	32.2	33.4	0.0	17.2	30.9	0.0	13.2
Incr Delay (d2), s/veh	0.9	3.0	3.6	3.5	0.0	4.1	3.7	0.0	6.4	0.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.7	2.7	2.4	0.0	2.6	1.5	0.0	11.3	0.4	0.0	5.3
LnGrp Delay(d),s/veh	31.1	34.2	35.0	35.5	0.0	36.3	37.0	0.0	23.5	31.2	0.0	14.8
LnGrp LOS	C	C	C	D		D	D		C	C		B
Approach Vol, veh/h		325			236			658			380	
Approach Delay, s/veh		33.9			35.9			25.0			15.6	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.6		13.2	9.9	39.2		12.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	12.7	22.5		7.4	4.9	11.8		6.9
Green Ext Time (p_c), s	0.0	0.0		1.3	0.0	6.8		0.8

Intersection Summary		
HCM 2010 Ctrl Delay	26.2	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	578	160	49	292	50	132	247	82	67	165	267
Future Volume (veh/h)	381	578	160	49	292	50	132	247	82	67	165	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	397	602	167	51	304	52	138	257	85	70	172	278
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	809	224	102	587	99	173	684	673	118	627	786
Arrive On Green	0.16	0.30	0.30	0.06	0.19	0.19	0.10	0.37	0.37	0.07	0.34	0.34
Sat Flow, veh/h	1774	2740	759	1774	3030	512	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	397	388	381	51	176	180	138	257	85	70	172	278
Grp Sat Flow(s),veh/h/ln	1774	1770	1729	1774	1770	1772	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	13.5	16.8	16.8	2.4	7.5	7.7	6.4	8.6	2.8	3.2	5.7	9.1
Cycle Q Clear(g_c), s	13.5	16.8	16.8	2.4	7.5	7.7	6.4	8.6	2.8	3.2	5.7	9.1
Prop In Lane	1.00		0.44	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	523	511	102	343	343	173	684	673	118	627	786
V/C Ratio(X)	1.40	0.74	0.75	0.50	0.51	0.52	0.80	0.38	0.13	0.59	0.27	0.35
Avail Cap(c_a), veh/h	283	554	541	283	554	555	283	684	673	283	627	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	26.9	26.9	38.7	30.6	30.6	37.4	19.6	14.8	38.4	20.5	13.0
Incr Delay (d2), s/veh	201.3	5.1	5.3	3.7	1.2	1.2	8.2	1.6	0.4	4.6	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	8.9	8.8	1.3	3.8	3.9	3.5	4.7	1.3	1.7	3.1	4.2
LnGrp Delay(d),s/veh	236.8	32.0	32.2	42.4	31.8	31.9	45.5	21.2	15.2	43.0	21.6	14.3
LnGrp LOS	F	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		1166			407			480			520	
Approach Delay, s/veh		101.8			33.1			27.1			20.6	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	35.6	9.4	29.5	12.7	33.0	18.0	20.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	15.2	10.6	4.4	18.8	8.4	11.1	15.5	9.7
Green Ext Time (p_c), s	0.1	3.6	0.0	4.1	0.1	3.6	0.0	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	60.6
HCM 2010 LOS	E

General Plan (2035)

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	365	161	221	735	58	130	478	112	62	661	313
Future Volume (veh/h)	168	365	161	221	735	58	130	478	112	62	661	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	179	388	171	235	782	62	138	509	119	66	703	333
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	880	394	261	915	73	171	1222	780	110	1101	683
Arrive On Green	0.12	0.25	0.25	0.15	0.28	0.28	0.10	0.35	0.35	0.06	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3323	263	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	179	388	171	235	416	428	138	509	119	66	703	333
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1816	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.0	8.5	8.3	11.9	20.4	20.4	7.0	10.1	3.8	3.3	15.6	13.9
Cycle Q Clear(g_c), s	9.0	8.5	8.3	11.9	20.4	20.4	7.0	10.1	3.8	3.3	15.6	13.9
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	880	394	261	488	500	171	1222	780	110	1101	683
V/C Ratio(X)	0.84	0.44	0.43	0.90	0.85	0.85	0.81	0.42	0.15	0.60	0.64	0.49
Avail Cap(c_a), veh/h	261	1024	458	261	512	525	261	1222	780	261	1101	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	29.0	29.0	38.4	31.4	31.4	40.6	22.9	12.7	41.8	27.1	18.7
Incr Delay (d2), s/veh	17.7	0.3	0.8	30.7	12.8	12.6	10.2	1.0	0.4	5.1	2.8	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	4.2	3.7	8.0	11.7	12.0	3.9	5.1	1.7	1.8	8.0	6.5
LnGrp Delay(d),s/veh	57.1	29.4	29.7	69.1	44.2	44.0	50.8	24.0	13.2	47.0	30.0	21.2
LnGrp LOS	E	C	C	E	D	D	D	C	B	D	C	C
Approach Vol, veh/h		738			1079			766			1102	
Approach Delay, s/veh		36.2			49.6			27.1			28.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	36.1	18.0	27.3	13.3	33.0	15.5	29.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	5.3	12.1	13.9	10.5	9.0	17.6	11.0	22.4
Green Ext Time (p_c), s	0.1	8.6	0.0	7.9	0.1	6.6	0.1	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	719	0	0	1043
Future Vol, veh/h	0	0	719	0	0	1043
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	765	0	0	1110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1320	382	0	0	765	0
Stage 1	765	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	148	616	-	-	844	-
Stage 1	420	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	148	616	-	-	844	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	844	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

HCM 2010 Signalized Intersection Summary
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	71	132	67	90	23	109	672	77	18	1012	41
Future Volume (veh/h)	49	71	132	67	90	23	109	672	77	18	1012	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	73	136	69	93	24	112	693	79	19	1043	42
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	100	186	131	339	288	158	1650	738	55	1445	647
Arrive On Green	0.06	0.17	0.17	0.07	0.18	0.18	0.09	0.47	0.47	0.03	0.41	0.41
Sat Flow, veh/h	1774	584	1087	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	51	0	209	69	93	24	112	693	79	19	1043	42
Grp Sat Flow(s),veh/h/ln	1774	0	1671	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.9	0.0	8.3	2.6	3.0	0.9	4.3	9.1	2.0	0.7	17.3	1.1
Cycle Q Clear(g_c), s	1.9	0.0	8.3	2.6	3.0	0.9	4.3	9.1	2.0	0.7	17.3	1.1
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	0	286	131	339	288	158	1650	738	55	1445	647
V/C Ratio(X)	0.46	0.00	0.73	0.53	0.27	0.08	0.71	0.42	0.11	0.35	0.72	0.06
Avail Cap(c_a), veh/h	343	0	634	343	707	601	343	1650	738	343	1445	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	27.4	31.1	24.6	23.7	30.9	12.4	10.5	33.1	17.3	12.6
Incr Delay (d2), s/veh	2.9	0.0	3.6	3.2	0.4	0.1	5.8	0.8	0.3	3.7	3.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.1	1.4	1.6	0.4	2.3	4.6	0.9	0.4	9.0	0.5
LnGrp Delay(d),s/veh	34.4	0.0	31.0	34.4	25.0	23.8	36.7	13.1	10.8	36.8	20.5	12.7
LnGrp LOS	C		C	C	C	C	D	B	B	D	C	B
Approach Vol, veh/h		260			186			884			1104	
Approach Delay, s/veh		31.7			28.3			15.9			20.5	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	37.0	9.7	16.4	10.7	33.0	8.9	17.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	2.7	11.1	4.6	10.3	6.3	19.3	3.9	5.0
Green Ext Time (p_c), s	0.0	11.3	0.1	1.7	0.1	6.9	0.1	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	302	4	181	307	676	0	0	868	346
Future Volume (veh/h)	0	0	0	302	4	181	307	676	0	0	868	346
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				315	4	189	320	704	0	0	904	360
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				390	5	352	361	2377	0	0	1030	408
Arrive On Green				0.22	0.22	0.22	0.20	0.67	0.00	0.00	0.42	0.42
Sat Flow, veh/h				1753	22	1583	1774	3632	0	0	2571	981
Grp Volume(v), veh/h				319	0	189	320	704	0	0	644	620
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1690
Q Serve(g_s), s				14.5	0.0	9.0	14.9	6.9	0.0	0.0	28.4	28.8
Cycle Q Clear(g_c), s				14.5	0.0	9.0	14.9	6.9	0.0	0.0	28.4	28.8
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.58
Lane Grp Cap(c), veh/h				395	0	352	361	2377	0	0	735	702
V/C Ratio(X)				0.81	0.00	0.54	0.89	0.30	0.00	0.00	0.88	0.88
Avail Cap(c_a), veh/h				708	0	631	436	2377	0	0	735	702
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	29.2	32.9	5.7	0.0	0.0	22.8	22.9
Incr Delay (d2), s/veh				3.9	0.0	1.3	17.2	0.3	0.0	0.0	13.8	15.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.5	0.0	4.0	9.0	3.4	0.0	0.0	16.6	16.2
LnGrp Delay(d),s/veh				35.3	0.0	30.4	50.1	6.0	0.0	0.0	36.7	38.0
LnGrp LOS				D		C	D	A			D	D
Approach Vol, veh/h					508			1024			1264	
Approach Delay, s/veh					33.5			19.8			37.3	
Approach LOS					C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			21.8	39.8		23.4
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		8.9			16.9	30.8		16.5
Green Ext Time (p_c), s		21.9			0.4	0.8		2.4

Intersection Summary		
HCM 2010 Ctrl Delay		30.2
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	4	526	0	0	0	0	701	155	180	995	0
Future Volume (veh/h)	274	4	526	0	0	0	0	701	155	180	995	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	283	0	537				0	715	158	184	1015	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1840	402	223	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.44	0.44	0.13	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	4346	913	1774	3632	0
Grp Volume(v), veh/h	283	0	537				0	579	294	184	1015	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1702	1774	1770	0
Q Serve(g_s), s	6.1	0.0	29.9				0.0	11.5	11.7	10.1	15.6	0.0
Cycle Q Clear(g_c), s	6.1	0.0	29.9				0.0	11.5	11.7	10.1	15.6	0.0
Prop In Lane	1.00		1.00				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1493	749	223	2162	0
V/C Ratio(X)	0.27	0.00	1.13				0.00	0.39	0.39	0.83	0.47	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1493	749	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.7	0.0	35.0				0.0	18.9	18.9	42.7	10.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	83.6				0.0	0.2	0.3	7.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	24.0				0.0	5.4	5.6	5.4	7.8	0.0
LnGrp Delay(d),s/veh	26.8	0.0	118.7				0.0	19.0	19.3	50.2	11.3	0.0
LnGrp LOS	C		F					B	B	D	B	
Approach Vol, veh/h		820						873			1199	
Approach Delay, s/veh		87.0						19.1			17.3	
Approach LOS		F						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.1	48.5		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.9	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	12.1	13.7		31.9		17.6		
Green Ext Time (p_c), s	0.4	9.3		0.0		19.6		

Intersection Summary	
HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	165	1	0	180	0	0	0	1	0	0	0
Future Vol, veh/h	0	165	1	0	180	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	181	1	0	198	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	198	0	0	182	0	0	281	380	91	289	380	99
Stage 1	-	-	-	-	-	-	182	182	-	198	198	-
Stage 2	-	-	-	-	-	-	99	198	-	91	182	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1372	-	-	1391	-	-	649	551	949	641	551	937
Stage 1	-	-	-	-	-	-	802	748	-	785	736	-
Stage 2	-	-	-	-	-	-	896	736	-	906	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1372	-	-	1391	-	-	649	551	949	640	551	937
Mov Cap-2 Maneuver	-	-	-	-	-	-	649	551	-	640	551	-
Stage 1	-	-	-	-	-	-	802	748	-	785	736	-
Stage 2	-	-	-	-	-	-	896	736	-	905	748	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	949	1372	-	-	1391	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	156	1	0	174	1	2	0	0	0	0	6
Future Vol, veh/h	11	156	1	0	174	1	2	0	0	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	181	1	0	202	1	2	0	0	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	183	0	0	411	411	91	319	411	203
Stage 1	-	-	-	-	-	-	208	208	-	203	203	-
Stage 2	-	-	-	-	-	-	203	203	-	116	208	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1367	-	-	1391	-	-	538	530	949	622	530	837
Stage 1	-	-	-	-	-	-	775	729	-	798	733	-
Stage 2	-	-	-	-	-	-	798	733	-	877	729	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1367	-	-	1391	-	-	530	525	949	617	525	837
Mov Cap-2 Maneuver	-	-	-	-	-	-	530	525	-	617	525	-
Stage 1	-	-	-	-	-	-	768	722	-	790	733	-
Stage 2	-	-	-	-	-	-	791	733	-	869	722	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	11.8	9.3
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	530	1367	-	-	1391	-	-	-	837
HCM Lane V/C Ratio	0.004	0.009	-	-	-	-	-	-	0.008
HCM Control Delay (s)	11.8	7.7	-	-	0	-	-	0	9.3
HCM Lane LOS	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	135	169	4	0	5
Future Vol, veh/h	21	135	169	4	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	161	201	5	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	206	0	-	0	415	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1365	-	-	-	594	837
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	824	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1365	-	-	-	582	837
Mov Cap-2 Maneuver	-	-	-	-	639	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1365	-	-	-	837
HCM Lane V/C Ratio	0.018	-	-	-	0.007
HCM Control Delay (s)	7.7	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	124	170	23	5	4
Future Vol, veh/h	12	124	170	23	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	138	189	26	6	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	214	0	-	0	366	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	164	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1356	-	-	-	634	839
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1356	-	-	-	628	839
Mov Cap-2 Maneuver	-	-	-	-	672	-
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1356	-	-	-	737
HCM Lane V/C Ratio	0.01	-	-	-	0.014
HCM Control Delay (s)	7.7	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	128	190	6	0	1
Future Vol, veh/h	0	128	190	6	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	149	221	7	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	224
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	815
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	815
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	815
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	129	192	4	0	6
Future Vol, veh/h	0	129	192	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	148	221	5	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	223
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	817
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	817
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	817
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 2010 Signalized Intersection Summary
12: Driveway/Davis St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	480	0	0	913	213	0	0	0	164	0	109
Future Volume (veh/h)	71	480	0	0	913	213	0	0	0	164	0	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	81	545	0	0	1038	242	0	0	0	186	0	124
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	83	1741	0	0	1149	267	0	789	0	819	0	670
Arrive On Green	0.05	0.49	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.42	0.00	0.42
Sat Flow, veh/h	1774	3632	0	0	2946	663	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	81	545	0	0	642	638	0	0	0	186	0	124
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1746	0	1863	0	1774	0	1583
Q Serve(g_s), s	4.8	9.8	0.0	0.0	36.2	36.5	0.0	0.0	0.0	7.2	0.0	5.2
Cycle Q Clear(g_c), s	4.8	9.8	0.0	0.0	36.2	36.5	0.0	0.0	0.0	7.2	0.0	5.2
Prop In Lane	1.00		0.00	0.00		0.38	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	1741	0	0	712	703	0	789	0	819	0	670
V/C Ratio(X)	0.97	0.31	0.00	0.00	0.90	0.91	0.00	0.00	0.00	0.23	0.00	0.18
Avail Cap(c_a), veh/h	83	1741	0	0	766	756	0	789	0	819	0	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	16.2	0.0	0.0	29.8	29.9	0.0	0.0	0.0	19.7	0.0	19.2
Incr Delay (d2), s/veh	88.4	0.1	0.0	0.0	13.3	14.1	0.0	0.0	0.0	0.6	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	4.8	0.0	0.0	20.3	20.3	0.0	0.0	0.0	3.7	0.0	2.4
LnGrp Delay(d),s/veh	139.0	16.3	0.0	0.0	43.1	44.0	0.0	0.0	0.0	20.4	0.0	19.8
LnGrp LOS	F	B			D	D				C		B
Approach Vol, veh/h		626			1280			0			310	
Approach Delay, s/veh		32.2			43.5			0.0			20.1	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		56.8		49.5	9.5	47.3
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		0.0		11.8		9.2	6.8	38.5
Green Ext Time (p_c), s		0.0		17.6		1.3	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	443	164	265	829	139	170	256	116	133	204	115
Future Volume (veh/h)	37	443	164	265	829	139	170	256	116	133	204	115
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	44	527	195	315	987	165	202	305	138	158	243	137
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	605	223	251	1001	167	235	602	512	191	556	473
Arrive On Green	0.05	0.24	0.24	0.14	0.33	0.33	0.13	0.32	0.32	0.11	0.30	0.30
Sat Flow, veh/h	1774	2534	934	1774	3036	507	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	44	367	355	315	575	577	202	305	138	158	243	137
Grp Sat Flow(s),veh/h/ln	1774	1770	1698	1774	1770	1773	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.3	19.0	19.2	13.5	30.8	30.8	10.6	12.6	6.2	8.3	10.0	6.3
Cycle Q Clear(g_c), s	2.3	19.0	19.2	13.5	30.8	30.8	10.6	12.6	6.2	8.3	10.0	6.3
Prop In Lane	1.00		0.55	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	423	405	251	584	585	235	602	512	191	556	473
V/C Ratio(X)	0.49	0.87	0.87	1.25	0.99	0.99	0.86	0.51	0.27	0.83	0.44	0.29
Avail Cap(c_a), veh/h	251	491	472	251	584	585	251	602	512	251	556	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	34.9	34.9	41.0	31.7	31.8	40.5	26.1	23.9	41.7	27.0	25.7
Incr Delay (d2), s/veh	4.1	13.9	14.9	143.0	33.4	33.7	23.8	3.0	1.3	15.7	2.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	10.9	10.6	16.5	20.4	20.5	6.8	7.0	2.9	4.9	5.5	3.0
LnGrp Delay(d),s/veh	48.2	48.7	49.9	184.0	65.1	65.5	64.3	29.1	25.2	57.4	29.5	27.2
LnGrp LOS	D	D	D	F	E	E	E	C	C	E	C	C
Approach Vol, veh/h		766			1467			645			538	
Approach Delay, s/veh		49.2			90.8			39.3			37.1	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	35.3	18.0	27.3	17.1	33.0	9.3	36.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	10.3	14.6	15.5	21.2	12.6	12.0	4.3	32.8
Green Ext Time (p_c), s	0.1	3.7	0.0	1.6	0.1	3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	88	36	96	97	109	46	400	94	83	529	27
Future Volume (veh/h)	9	88	36	96	97	109	46	400	94	83	529	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	110	45	120	121	136	58	500	118	104	661	34
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	215	84	326	147	165	113	604	142	157	771	40
Arrive On Green	0.09	0.09	0.09	0.18	0.18	0.18	0.06	0.41	0.41	0.09	0.44	0.44
Sat Flow, veh/h	1774	2490	971	1774	802	902	1774	1458	344	1774	1756	90
Grp Volume(v), veh/h	11	77	78	120	0	257	58	0	618	104	0	695
Grp Sat Flow(s),veh/h/ln	1774	1770	1691	1774	0	1704	1774	0	1802	1774	0	1847
Q Serve(g_s), s	0.5	3.3	3.5	4.7	0.0	11.5	2.5	0.0	24.2	4.5	0.0	26.8
Cycle Q Clear(g_c), s	0.5	3.3	3.5	4.7	0.0	11.5	2.5	0.0	24.2	4.5	0.0	26.8
Prop In Lane	1.00		0.57	1.00		0.53	1.00		0.19	1.00		0.05
Lane Grp Cap(c), veh/h	153	153	146	326	0	313	113	0	746	157	0	810
V/C Ratio(X)	0.07	0.50	0.54	0.37	0.00	0.82	0.51	0.00	0.83	0.66	0.00	0.86
Avail Cap(c_a), veh/h	451	450	430	451	0	433	159	0	746	451	0	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	34.5	34.6	28.3	0.0	31.0	35.8	0.0	20.7	34.9	0.0	20.0
Incr Delay (d2), s/veh	0.2	2.5	3.1	0.7	0.0	8.7	3.6	0.0	10.3	4.7	0.0	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.7	1.8	2.4	0.0	6.1	1.3	0.0	14.1	2.4	0.0	16.1
LnGrp Delay(d),s/veh	33.4	37.1	37.7	29.0	0.0	39.7	39.4	0.0	30.9	39.6	0.0	31.3
LnGrp LOS	C	D	D	C		D	D		C	D		C
Approach Vol, veh/h		166			377			676			799	
Approach Delay, s/veh		37.1			36.3			31.7			32.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.2		11.3	9.5	39.2		19.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	13.5	26.2		5.5	4.5	28.8		13.5
Green Ext Time (p_c), s	0.2	0.0		0.7	0.0	4.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	404	167	40	462	59	172	369	124	102	400	152
Future Volume (veh/h)	100	404	167	40	462	59	172	369	124	102	400	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	112	454	188	45	519	66	193	415	139	115	449	171
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	659	271	96	766	97	230	712	691	147	625	659
Arrive On Green	0.08	0.27	0.27	0.05	0.24	0.24	0.13	0.38	0.38	0.08	0.34	0.34
Sat Flow, veh/h	1774	2449	1006	1774	3161	401	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	112	327	315	45	290	295	193	415	139	115	449	171
Grp Sat Flow(s),veh/h/ln	1774	1770	1685	1774	1770	1792	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.3	14.1	14.3	2.1	12.6	12.7	9.0	15.0	4.6	5.4	17.9	6.0
Cycle Q Clear(g_c), s	5.3	14.1	14.3	2.1	12.6	12.7	9.0	15.0	4.6	5.4	17.9	6.0
Prop In Lane	1.00		0.60	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	476	454	96	429	434	230	712	691	147	625	659
V/C Ratio(X)	0.78	0.69	0.69	0.47	0.68	0.68	0.84	0.58	0.20	0.78	0.72	0.26
Avail Cap(c_a), veh/h	282	552	525	282	552	559	282	712	691	282	625	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	27.8	27.9	39.0	29.2	29.2	36.1	20.9	14.8	38.2	24.7	16.2
Incr Delay (d2), s/veh	8.9	2.9	3.3	3.6	2.2	2.3	16.6	3.5	0.7	8.8	7.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.3	7.1	1.1	6.4	6.5	5.5	8.4	2.1	3.0	10.4	2.8
LnGrp Delay(d),s/veh	47.3	30.8	31.2	42.6	31.4	31.5	52.7	24.3	15.5	47.1	31.7	17.2
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		754			630			747			735	
Approach Delay, s/veh		33.4			32.2			30.0			30.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	37.0	9.1	27.4	15.5	33.0	11.4	25.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	7.4	17.0	4.1	16.3	11.0	19.9	7.3	14.7
Green Ext Time (p_c), s	0.1	5.1	0.0	5.4	0.1	4.2	0.1	5.9

Intersection Summary		
HCM 2010 Ctrl Delay		31.6
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	841	170	137	497	60	167	694	195	79	537	216
Future Volume (veh/h)	267	841	170	137	497	60	167	694	195	79	537	216
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	858	173	140	507	61	170	708	199	81	548	220
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1016	454	173	761	91	204	1259	718	117	1086	716
Arrive On Green	0.15	0.29	0.29	0.10	0.24	0.24	0.12	0.36	0.36	0.07	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3183	382	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	272	858	173	140	281	287	170	708	199	81	548	220
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1795	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.5	21.2	8.1	7.2	13.3	13.4	8.7	15.0	7.3	4.2	11.8	8.2
Cycle Q Clear(g_c), s	13.5	21.2	8.1	7.2	13.3	13.4	8.7	15.0	7.3	4.2	11.8	8.2
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1016	454	173	423	429	204	1259	718	117	1086	716
V/C Ratio(X)	1.06	0.84	0.38	0.81	0.66	0.67	0.83	0.56	0.28	0.69	0.50	0.31
Avail Cap(c_a), veh/h	258	1016	454	258	505	512	258	1259	718	258	1086	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	31.2	26.5	41.1	32.0	32.0	40.2	24.1	15.9	42.5	26.4	16.2
Incr Delay (d2), s/veh	71.3	6.7	0.5	11.1	2.5	2.6	16.7	1.8	1.0	7.1	1.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	11.3	3.6	4.1	6.8	6.9	5.2	7.6	3.4	2.3	6.0	3.8
LnGrp Delay(d),s/veh	111.0	37.8	27.0	52.2	34.5	34.6	57.0	25.9	16.8	49.5	28.1	17.3
LnGrp LOS	F	D	C	D	C	C	E	C	B	D	C	B
Approach Vol, veh/h		1303			708			1077			849	
Approach Delay, s/veh		51.7			38.0			29.1			27.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	37.6	13.6	31.2	15.2	33.0	18.0	26.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.2	17.0	9.2	23.2	10.7	13.8	15.5	15.4
Green Ext Time (p_c), s	0.1	7.0	0.1	2.5	0.1	8.2	0.0	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1056	0	0	843
Future Vol, veh/h	0	0	1056	0	0	843
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1078	0	0	860

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1422	539	0	0	1078	0
Stage 1	1078	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	155	487	-	-	643	-
Stage 1	281	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	155	487	-	-	643	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	281	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	643	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	144	259	97	90	35	162	981	134	24	806	44
Future Volume (veh/h)	91	144	259	97	90	35	162	981	134	24	806	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	92	145	262	98	91	35	164	991	135	24	814	44
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	162	294	131	510	434	200	1447	647	63	1173	525
Arrive On Green	0.07	0.27	0.27	0.07	0.27	0.27	0.11	0.41	0.41	0.04	0.33	0.33
Sat Flow, veh/h	1774	596	1077	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	92	0	407	98	91	35	164	991	135	24	814	44
Grp Sat Flow(s),veh/h/ln	1774	0	1673	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.4	0.0	20.1	4.7	3.2	1.4	7.8	19.8	4.7	1.1	17.2	1.6
Cycle Q Clear(g_c), s	4.4	0.0	20.1	4.7	3.2	1.4	7.8	19.8	4.7	1.1	17.2	1.6
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	0	456	131	510	434	200	1447	647	63	1173	525
V/C Ratio(X)	0.72	0.00	0.89	0.75	0.18	0.08	0.82	0.68	0.21	0.38	0.69	0.08
Avail Cap(c_a), veh/h	279	0	516	279	574	488	279	1447	647	279	1173	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	30.1	39.1	23.8	23.2	37.3	20.9	16.4	40.5	24.9	19.8
Incr Delay (d2), s/veh	7.2	0.0	16.4	8.4	0.2	0.1	12.5	2.7	0.7	3.7	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	11.3	2.6	1.7	0.6	4.5	10.2	2.2	0.6	8.9	0.8
LnGrp Delay(d),s/veh	46.3	0.0	46.4	47.4	24.0	23.3	49.8	23.5	17.2	44.3	28.3	20.1
LnGrp LOS	D		D	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		499			224			1290			882	
Approach Delay, s/veh		46.4			34.1			26.2			28.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	39.7	10.8	27.9	14.2	33.0	10.7	28.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	3.1	21.8	6.7	22.1	9.8	19.2	6.4	5.2
Green Ext Time (p_c), s	0.0	5.5	0.1	1.3	0.1	7.2	0.1	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	242	4	189	377	1096	0	0	874	292
Future Volume (veh/h)	0	0	0	242	4	189	377	1096	0	0	874	292
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				252	4	197	393	1142	0	0	910	304
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				328	5	298	430	2483	0	0	1054	351
Arrive On Green				0.19	0.19	0.19	0.24	0.70	0.00	0.00	0.40	0.40
Sat Flow, veh/h				1748	28	1583	1774	3632	0	0	2703	869
Grp Volume(v), veh/h				256	0	197	393	1142	0	0	616	598
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1709
Q Serve(g_s), s				11.1	0.0	9.4	17.5	11.6	0.0	0.0	25.9	26.1
Cycle Q Clear(g_c), s				11.1	0.0	9.4	17.5	11.6	0.0	0.0	25.9	26.1
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.51
Lane Grp Cap(c), veh/h				334	0	298	430	2483	0	0	714	690
V/C Ratio(X)				0.77	0.00	0.66	0.91	0.46	0.00	0.00	0.86	0.87
Avail Cap(c_a), veh/h				739	0	659	456	2483	0	0	714	690
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.4	0.0	30.7	30.0	5.4	0.0	0.0	22.2	22.3
Incr Delay (d2), s/veh				3.7	0.0	2.5	22.1	0.6	0.0	0.0	13.0	13.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.8	0.0	4.3	11.2	5.8	0.0	0.0	15.2	14.9
LnGrp Delay(d),s/veh				35.1	0.0	33.2	52.1	6.0	0.0	0.0	35.2	36.1
LnGrp LOS				D		C	D	A			D	D
Approach Vol, veh/h					453			1535			1214	
Approach Delay, s/veh					34.2			17.8			35.6	
Approach LOS					C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			24.2	37.4		19.8
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		13.6			19.5	28.1		13.1
Green Ext Time (p_c), s		26.8			0.2	3.3		2.2

Intersection Summary		
HCM 2010 Ctrl Delay		26.9
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	502	3	354	0	0	0	0	981	322	191	931	0
Future Volume (veh/h)	502	3	354	0	0	0	0	981	322	191	931	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	525	0	369				0	1022	335	199	970	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	942	0	420				0	1736	569	240	2266	0
Arrive On Green	0.27	0.00	0.27				0.00	0.46	0.46	0.14	0.64	0.00
Sat Flow, veh/h	3548	0	1583				0	3959	1242	1774	3632	0
Grp Volume(v), veh/h	525	0	369				0	914	443	199	970	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1644	1774	1770	0
Q Serve(g_s), s	12.2	0.0	21.3				0.0	19.1	19.1	10.4	13.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	21.3				0.0	19.1	19.1	10.4	13.0	0.0
Prop In Lane	1.00		1.00				0.00		0.76	1.00		0.00
Lane Grp Cap(c), veh/h	942	0	420				0	1552	752	240	2266	0
V/C Ratio(X)	0.56	0.00	0.88				0.00	0.59	0.59	0.83	0.43	0.00
Avail Cap(c_a), veh/h	1112	0	496				0	1552	752	556	2266	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.2	0.0	33.6				0.0	19.2	19.2	40.2	8.5	0.0
Incr Delay (d2), s/veh	0.5	0.0	14.5				0.0	0.6	1.2	7.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	11.0				0.0	9.0	8.9	5.6	6.5	0.0
LnGrp Delay(d),s/veh	30.7	0.0	48.1				0.0	19.8	20.4	47.4	9.1	0.0
LnGrp LOS	C		D					B	C	D	A	
Approach Vol, veh/h		894						1357			1169	
Approach Delay, s/veh		37.9						20.0			15.6	
Approach LOS		D						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.4	48.2		29.8		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	12.4	21.1		23.3		15.0		
Green Ext Time (p_c), s	0.5	5.0		2.0		27.1		

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑			↕			↕	
Traffic Vol, veh/h	0	306	22	0	228	0	0	0	22	0	0	0
Future Vol, veh/h	0	306	22	0	228	0	0	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	326	23	0	243	0	0	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	580	580	174	373	592	243
Stage 1	-	-	-	-	-	-	337	337	-	243	243	-
Stage 2	-	-	-	-	-	-	243	243	-	130	349	-
Critical Hdwy	-	-	-	-	-	-	6.78	6.53	7.13	6.78	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	7.33	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.73	5.53	-
Follow-up Hdwy	-	-	-	-	-	-	3.669	4.019	3.919	3.669	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	436	425	714	584	418	795
Stage 1	0	-	-	0	-	0	584	640	-	732	704	-
Stage 2	0	-	-	0	-	0	732	704	-	822	633	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	436	425	714	565	418	795
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	425	-	565	418	-
Stage 1	-	-	-	-	-	-	584	640	-	732	704	-
Stage 2	-	-	-	-	-	-	732	704	-	795	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	714	-	-	-	-
HCM Lane V/C Ratio	0.033	-	-	-	-
HCM Control Delay (s)	10.2	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	273	4	4	182	5	2	2	0	7	0	35
Future Vol, veh/h	55	273	4	4	182	5	2	2	0	7	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	310	5	5	207	6	2	2	0	8	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	315	0	0	657	660	157	500	659	210
Stage 1	-	-	-	-	-	-	438	438	-	219	219	-
Stage 2	-	-	-	-	-	-	219	222	-	281	440	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1356	-	-	1244	-	-	364	382	861	467	383	830
Stage 1	-	-	-	-	-	-	568	578	-	783	721	-
Stage 2	-	-	-	-	-	-	783	719	-	703	577	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1356	-	-	1244	-	-	333	363	861	447	364	830
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	363	-	447	364	-
Stage 1	-	-	-	-	-	-	542	551	-	747	718	-
Stage 2	-	-	-	-	-	-	742	716	-	668	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	15.5	10.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	347	1356	-	-	1244	-	-	447	830
HCM Lane V/C Ratio	0.013	0.046	-	-	0.004	-	-	0.018	0.048
HCM Control Delay (s)	15.5	7.8	-	-	7.9	-	-	13.2	9.6
HCM Lane LOS	C	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.1	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	271	182	7	10	10
Future Vol, veh/h	11	271	182	7	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	298	200	8	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	208	0	-	0	526	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1363	-	-	-	512	837
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1363	-	-	-	506	837
Mov Cap-2 Maneuver	-	-	-	-	582	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1363	-	-	-	687
HCM Lane V/C Ratio	0.009	-	-	-	0.032
HCM Control Delay (s)	7.7	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	259	175	9	25	16
Future Vol, veh/h	19	259	175	9	25	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	285	192	10	27	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	202	0	-	0	523	197
Stage 1	-	-	-	-	197	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1370	-	-	-	514	844
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1370	-	-	-	505	844
Mov Cap-2 Maneuver	-	-	-	-	579	-
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	718	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1370	-	-	-	660
HCM Lane V/C Ratio	0.015	-	-	-	0.068
HCM Control Delay (s)	7.7	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	284	177	25	0	7
Future Vol, veh/h	1	284	177	25	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	305	190	27	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	217	0	-	0	-	204
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1353	-	-	-	0	837
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1353	-	-	-	-	837
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1353	-	-	-	837
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s)	7.7	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	284	193	8	0	9
Future Vol, veh/h	0	284	193	8	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	302	205	9	0	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	210
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	830
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	830
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	830
HCM Lane V/C Ratio	-	-	-	0.012
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	991	0	0	618	58	0	0	0	85	0	62
Future Volume (veh/h)	120	991	0	0	618	58	0	0	0	85	0	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	138	1139	0	0	710	67	0	0	0	98	0	71
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	82	1778	0	0	1356	128	0	773	0	802	0	657
Arrive On Green	0.05	0.50	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1774	3632	0	0	3363	308	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	138	1139	0	0	384	393	0	0	0	98	0	71
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1808	0	1863	0	1774	0	1583
Q Serve(g_s), s	5.0	25.6	0.0	0.0	17.6	17.6	0.0	0.0	0.0	3.7	0.0	3.0
Cycle Q Clear(g_c), s	5.0	25.6	0.0	0.0	17.6	17.6	0.0	0.0	0.0	3.7	0.0	3.0
Prop In Lane	1.00		0.00	0.00		0.17	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	1778	0	0	734	750	0	773	0	802	0	657
V/C Ratio(X)	1.69	0.64	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.12	0.00	0.11
Avail Cap(c_a), veh/h	82	1778	0	0	734	750	0	773	0	802	0	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	19.8	0.0	0.0	23.7	23.7	0.0	0.0	0.0	19.7	0.0	19.5
Incr Delay (d2), s/veh	356.5	1.8	0.0	0.0	2.7	2.6	0.0	0.0	0.0	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	12.9	0.0	0.0	9.1	9.3	0.0	0.0	0.0	1.9	0.0	1.4
LnGrp Delay(d),s/veh	408.3	21.6	0.0	0.0	26.4	26.3	0.0	0.0	0.0	20.0	0.0	19.8
LnGrp LOS	F	C			C	C				B		B
Approach Vol, veh/h		1277			777			0			169	
Approach Delay, s/veh		63.4			26.4			0.0			19.9	
Approach LOS		E			C						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		59.0		49.5	9.5	49.5		49.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		45.0		45.0	5.0	45.0		45.0
Max Q Clear Time (g_c+I1), s		27.6		5.7	7.0	19.6		0.0
Green Ext Time (p_c), s		12.0		0.7	0.0	15.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	801	120	86	475	83	121	250	242	78	184	90
Future Volume (veh/h)	122	801	120	86	475	83	121	250	242	78	184	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	133	871	130	93	516	90	132	272	263	85	200	98
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	934	139	127	845	147	166	652	554	124	608	517
Arrive On Green	0.09	0.30	0.30	0.07	0.28	0.28	0.09	0.35	0.35	0.07	0.33	0.33
Sat Flow, veh/h	1774	3090	461	1774	3016	524	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	133	499	502	93	302	304	132	272	263	85	200	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1781	1774	1770	1770	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	6.4	23.9	23.9	4.5	12.9	13.0	6.4	9.7	11.3	4.1	7.1	3.9
Cycle Q Clear(g_c), s	6.4	23.9	23.9	4.5	12.9	13.0	6.4	9.7	11.3	4.1	7.1	3.9
Prop In Lane	1.00		0.26	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	535	539	127	496	496	166	652	554	124	608	517
V/C Ratio(X)	0.80	0.93	0.93	0.73	0.61	0.61	0.80	0.42	0.47	0.68	0.33	0.19
Avail Cap(c_a), veh/h	274	537	541	274	537	537	274	652	554	274	608	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	29.6	29.6	39.7	27.3	27.3	38.8	21.6	22.1	39.7	22.2	21.1
Incr Delay (d2), s/veh	8.4	23.3	23.2	7.8	1.8	1.8	8.4	2.0	2.9	6.5	1.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	15.1	15.2	2.5	6.5	6.6	3.5	5.3	5.4	2.2	3.9	1.8
LnGrp Delay(d),s/veh	47.2	52.9	52.8	47.5	29.0	29.1	47.2	23.6	25.0	46.2	23.6	21.9
LnGrp LOS	D	D	D	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1134			699			667			383	
Approach Delay, s/veh		52.2			31.5			28.8			28.2	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	35.0	10.8	30.9	12.7	33.0	12.7	29.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.1	13.3	6.5	25.9	8.4	9.1	8.4	15.0
Green Ext Time (p_c), s	0.1	3.7	0.1	0.5	0.1	4.0	0.1	7.4

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	172	72	86	85	107	65	480	156	36	339	24
Future Volume (veh/h)	42	172	72	86	85	107	65	480	156	36	339	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	181	76	91	89	113	68	505	164	38	357	25
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	280	113	269	113	144	122	564	183	157	754	53
Arrive On Green	0.11	0.11	0.11	0.15	0.15	0.15	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	2461	995	1774	747	948	1774	1348	438	1774	1721	121
Grp Volume(v), veh/h	44	128	129	91	0	202	68	0	669	38	0	382
Grp Sat Flow(s),veh/h/ln	1774	1770	1687	1774	0	1695	1774	0	1786	1774	0	1841
Q Serve(g_s), s	1.8	5.5	5.8	3.6	0.0	9.1	2.9	0.0	27.6	1.6	0.0	11.6
Cycle Q Clear(g_c), s	1.8	5.5	5.8	3.6	0.0	9.1	2.9	0.0	27.6	1.6	0.0	11.6
Prop In Lane	1.00		0.59	1.00		0.56	1.00		0.25	1.00		0.07
Lane Grp Cap(c), veh/h	202	202	192	269	0	257	122	0	747	157	0	807
V/C Ratio(X)	0.22	0.64	0.67	0.34	0.00	0.79	0.56	0.00	0.90	0.24	0.00	0.47
Avail Cap(c_a), veh/h	450	449	428	450	0	430	159	0	747	450	0	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.9	33.5	33.6	30.0	0.0	32.3	35.7	0.0	21.4	33.6	0.0	15.8
Incr Delay (d2), s/veh	0.5	3.3	4.0	0.7	0.0	5.2	4.0	0.0	15.5	0.8	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.9	2.9	1.8	0.0	4.6	1.6	0.0	16.8	0.8	0.0	6.3
LnGrp Delay(d),s/veh	32.4	36.8	37.6	30.8	0.0	37.6	39.7	0.0	36.9	34.4	0.0	17.7
LnGrp LOS	C	D	D	C		D	D		D	C		B
Approach Vol, veh/h		301			293			737			420	
Approach Delay, s/veh		36.5			35.5			37.2			19.2	
Approach LOS		D			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.6		13.5	9.9	39.2		16.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	13.6	29.6		7.8	4.9	13.6		11.1
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	7.5		0.9

Intersection Summary		
HCM 2010 Ctrl Delay	32.5	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	965	208	99	567	85	231	393	184	111	242	119
Future Volume (veh/h)	234	965	208	99	567	85	231	393	184	111	242	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	244	1005	217	103	591	89	241	409	192	116	252	124
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	858	185	131	705	106	251	668	685	146	557	698
Arrive On Green	0.14	0.30	0.30	0.07	0.23	0.23	0.14	0.36	0.36	0.08	0.30	0.30
Sat Flow, veh/h	1774	2898	624	1774	3087	464	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	244	613	609	103	338	342	241	409	192	116	252	124
Grp Sat Flow(s),veh/h/ln	1774	1770	1753	1774	1770	1781	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	13.0	28.2	28.2	5.4	17.4	17.5	12.9	17.2	7.5	6.1	10.4	4.5
Cycle Q Clear(g_c), s	13.0	28.2	28.2	5.4	17.4	17.5	12.9	17.2	7.5	6.1	10.4	4.5
Prop In Lane	1.00		0.36	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	524	519	131	404	407	251	668	685	146	557	698
V/C Ratio(X)	0.97	1.17	1.17	0.78	0.84	0.84	0.96	0.61	0.28	0.79	0.45	0.18
Avail Cap(c_a), veh/h	251	524	519	251	492	495	251	668	685	251	557	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	33.5	33.5	43.4	35.1	35.1	40.6	25.1	17.5	42.9	27.1	16.2
Incr Delay (d2), s/veh	48.4	95.1	97.0	9.8	10.2	10.4	45.2	4.2	1.0	9.3	2.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	27.5	27.5	3.0	9.6	9.7	9.5	9.6	3.5	3.4	5.8	2.1
LnGrp Delay(d),s/veh	89.1	128.6	130.5	53.2	45.3	45.5	85.8	29.3	18.5	52.2	29.7	16.7
LnGrp LOS	F	F	F	D	D	D	F	C	B	D	C	B
Approach Vol, veh/h		1466			783			842			492	
Approach Delay, s/veh		122.8			46.4			43.0			31.7	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	38.7	11.5	32.7	18.0	33.0	18.0	26.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	9.1	19.2	7.4	30.2	14.9	12.4	15.0	19.5
Green Ext Time (p_c), s	0.1	3.6	0.1	0.0	0.0	4.8	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	74.9
HCM 2010 LOS	E

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	499	208	109	357	44	260	784	207	82	620	227
Future Volume (veh/h)	251	499	208	109	357	44	260	784	207	82	620	227
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	256	509	212	111	364	45	265	800	211	84	633	232
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	924	413	141	610	75	263	1394	749	120	1108	731
Arrive On Green	0.15	0.26	0.26	0.08	0.19	0.19	0.15	0.39	0.39	0.07	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3174	390	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	256	509	212	111	202	207	265	800	211	84	633	232
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1794	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.1	11.3	10.4	5.6	9.5	9.6	13.5	16.1	7.4	4.2	13.6	8.4
Cycle Q Clear(g_c), s	13.1	11.3	10.4	5.6	9.5	9.6	13.5	16.1	7.4	4.2	13.6	8.4
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	924	413	141	340	345	263	1394	749	120	1108	731
V/C Ratio(X)	0.97	0.55	0.51	0.79	0.59	0.60	1.01	0.57	0.28	0.70	0.57	0.32
Avail Cap(c_a), veh/h	263	1031	461	263	515	522	263	1394	749	263	1108	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	29.0	28.7	41.1	33.5	33.6	38.8	21.6	14.6	41.5	26.1	15.5
Incr Delay (d2), s/veh	47.7	0.5	1.0	9.3	1.7	1.7	57.2	1.7	0.9	7.1	2.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	5.6	4.7	3.1	4.8	4.9	10.8	8.2	3.4	2.3	7.0	3.9
LnGrp Delay(d),s/veh	86.3	29.5	29.7	50.4	35.2	35.2	96.0	23.3	15.5	48.7	28.3	16.6
LnGrp LOS	F	C	C	D	D	D	F	C	B	D	C	B
Approach Vol, veh/h		977			520			1276			949	
Approach Delay, s/veh		44.4			38.4			37.1			27.2	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	40.3	11.7	28.3	18.0	33.0	18.0	22.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.2	18.1	7.6	13.3	15.5	15.6	15.1	11.6
Green Ext Time (p_c), s	0.1	7.1	0.1	5.5	0.0	8.4	0.0	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	38	1213	0	0	936
Future Vol, veh/h	0	38	1213	0	0	936
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	1238	0	0	955

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1620	619	0	0	1238	0
Stage 1	1238	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	118	432	-	-	558	-
Stage 1	232	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	432	-	-	558	-
Mov Cap-2 Maneuver	118	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	432	558	-
HCM Lane V/C Ratio	-	-	0.09	-	-
HCM Control Delay (s)	-	-	14.2	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	114	245	252	105	24	226	1183	247	49	869	52
Future Volume (veh/h)	63	114	245	252	105	24	226	1183	247	49	869	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	64	115	247	255	106	24	228	1195	249	49	878	53
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	127	273	247	598	508	247	1348	603	94	1042	466
Arrive On Green	0.06	0.24	0.24	0.14	0.32	0.32	0.14	0.38	0.38	0.05	0.29	0.29
Sat Flow, veh/h	1774	528	1134	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	64	0	362	255	106	24	228	1195	249	49	878	53
Grp Sat Flow(s),veh/h/ln	1774	0	1663	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.4	0.0	20.5	13.5	4.0	1.0	12.3	30.6	11.2	2.6	22.5	2.4
Cycle Q Clear(g_c), s	3.4	0.0	20.5	13.5	4.0	1.0	12.3	30.6	11.2	2.6	22.5	2.4
Prop In Lane	1.00		0.68	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	0	400	247	598	508	247	1348	603	94	1042	466
V/C Ratio(X)	0.61	0.00	0.90	1.03	0.18	0.05	0.92	0.89	0.41	0.52	0.84	0.11
Avail Cap(c_a), veh/h	247	0	455	247	598	508	247	1348	603	247	1042	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	35.7	41.7	23.7	22.7	41.1	28.0	22.0	44.6	32.1	24.9
Incr Delay (d2), s/veh	5.5	0.0	19.8	65.4	0.1	0.0	36.7	8.9	2.1	4.4	8.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	11.6	11.0	2.1	0.4	8.5	16.6	5.2	1.4	12.2	1.1
LnGrp Delay(d),s/veh	50.0	0.0	55.4	107.1	23.8	22.7	77.9	36.9	24.1	49.1	40.3	25.4
LnGrp LOS	D		E	F	C	C	E	D	C	D	D	C
Approach Vol, veh/h		426			385			1672			980	
Approach Delay, s/veh		54.6			78.9			40.6			40.0	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	41.4	18.0	27.8	18.0	33.0	10.2	35.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.6	32.6	15.5	22.5	14.3	24.5	5.4	6.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	3.6	0.1	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	347	4	231	442	1433	0	0	1034	471
Future Volume (veh/h)	0	0	0	347	4	231	442	1433	0	0	1034	471
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				361	4	241	460	1493	0	0	1077	491
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				437	5	394	421	2297	0	0	860	381
Arrive On Green				0.25	0.25	0.25	0.24	0.65	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1756	19	1583	1774	3632	0	0	2481	1058
Grp Volume(v), veh/h				365	0	241	460	1493	0	0	790	778
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1676
Q Serve(g_s), s				17.1	0.0	11.9	20.9	22.5	0.0	0.0	31.7	31.7
Cycle Q Clear(g_c), s				17.1	0.0	11.9	20.9	22.5	0.0	0.0	31.7	31.7
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.63
Lane Grp Cap(c), veh/h				442	0	394	421	2297	0	0	638	604
V/C Ratio(X)				0.83	0.00	0.61	1.09	0.65	0.00	0.00	1.24	1.29
Avail Cap(c_a), veh/h				684	0	610	421	2297	0	0	638	604
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	29.3	33.5	9.4	0.0	0.0	28.1	28.1
Incr Delay (d2), s/veh				4.9	0.0	1.5	70.9	1.4	0.0	0.0	120.9	141.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	0.0	5.3	18.5	11.2	0.0	0.0	36.8	38.4
LnGrp Delay(d),s/veh				36.2	0.0	30.8	104.4	10.8	0.0	0.0	149.0	169.9
LnGrp LOS				D		C	F	B			F	F
Approach Vol, veh/h					606			1953			1568	
Approach Delay, s/veh					34.0			32.9			159.4	
Approach LOS					C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			25.4	36.2		26.4
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		24.5			22.9	33.7		19.1
Green Ext Time (p_c), s		28.2			0.0	0.0		2.8

Intersection Summary		
HCM 2010 Ctrl Delay		81.1
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	3	548	0	0	0	0	1296	431	252	1010	0
Future Volume (veh/h)	590	3	548	0	0	0	0	1296	431	252	1010	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	617	0	571				0	1350	449	262	1052	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1498	495	302	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.40	0.40	0.17	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	3949	1251	1774	3632	0
Grp Volume(v), veh/h	617	0	571				0	1209	590	262	1052	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1642	1774	1770	0
Q Serve(g_s), s	14.8	0.0	29.9				0.0	33.5	33.8	14.4	16.5	0.0
Cycle Q Clear(g_c), s	14.8	0.0	29.9				0.0	33.5	33.8	14.4	16.5	0.0
Prop In Lane	1.00		1.00				0.00		0.76	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1343	650	302	2162	0
V/C Ratio(X)	0.58	0.00	1.21				0.00	0.90	0.91	0.87	0.49	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1343	650	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.7	0.0	35.0				0.0	28.4	28.5	40.4	10.8	0.0
Incr Delay (d2), s/veh	0.8	0.0	111.3				0.0	8.6	16.5	7.6	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	27.7				0.0	17.2	18.2	7.7	8.1	0.0
LnGrp Delay(d),s/veh	30.5	0.0	146.3				0.0	37.0	44.9	48.0	11.6	0.0
LnGrp LOS	C		F					D	D	D	B	
Approach Vol, veh/h		1188						1799			1314	
Approach Delay, s/veh		86.2						39.6			18.8	
Approach LOS		F						D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	21.5	44.1		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	16.4	35.8		31.9		18.5		
Green Ext Time (p_c), s	0.6	0.0		0.0		32.7		

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑			↕			↕	
Traffic Vol, veh/h	0	421	19	0	695	0	0	0	24	0	0	0
Future Vol, veh/h	0	421	19	0	695	0	0	0	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	448	20	0	739	0	0	0	26	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	1197	1197	234	918	1207	739
Stage 1	-	-	-	-	-	-	458	458	-	739	739	-
Stage 2	-	-	-	-	-	-	739	739	-	179	468	-
Critical Hdwy	-	-	-	-	-	-	6.78	6.53	7.13	6.78	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	7.33	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.73	5.53	-
Follow-up Hdwy	-	-	-	-	-	-	3.669	4.019	3.919	3.669	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	178	185	655	268	183	416
Stage 1	0	-	-	0	-	0	483	566	-	397	423	-
Stage 2	0	-	-	0	-	0	397	423	-	768	560	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	178	185	655	258	183	416
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	185	-	258	183	-
Stage 1	-	-	-	-	-	-	483	566	-	397	423	-
Stage 2	-	-	-	-	-	-	397	423	-	738	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.7	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	655	-	-	-	-
HCM Lane V/C Ratio	0.039	-	-	-	-
HCM Control Delay (s)	10.7	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	200.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	273	332	156	28	279	36	164	2	24	38	0	243
Future Vol, veh/h	273	332	156	28	279	36	164	2	24	38	0	243
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	310	377	177	32	317	41	186	2	27	43	0	276

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	555	0	0	1487	1508	277	1211	1576	338
Stage 1	-	-	-	-	-	-	1086	1086	-	401	401	-
Stage 2	-	-	-	-	-	-	401	422	-	810	1175	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1199	-	-	1013	-	-	~ 94	120	721	148	109	703
Stage 1	-	-	-	-	-	-	232	292	-	625	600	-
Stage 2	-	-	-	-	-	-	625	587	-	341	265	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1199	-	-	1013	-	-	~ 45	86	721	109	78	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 45	86	-	109	78	-
Stage 1	-	-	-	-	-	-	~ 172	217	-	463	581	-
Stage 2	-	-	-	-	-	-	368	568	-	241	196	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0.7	$ 1617.9	19.5
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	51	1199	-	-	1013	-	-	109	703
HCM Lane V/C Ratio	4.234	0.259	-	-	0.031	-	-	0.396	0.393
HCM Control Delay (s)	$ 1617.9	9	-	-	8.7	-	-	58.2	13.4
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	24	1	-	-	0.1	-	-	1.6	1.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	382	332	8	11	11
Future Vol, veh/h	12	382	332	8	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	420	365	9	12	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	374	0	-	0	815	369
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1184	-	-	-	347	677
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1184	-	-	-	342	677
Mov Cap-2 Maneuver	-	-	-	-	459	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	636	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1184	-	-	-	547
HCM Lane V/C Ratio	0.011	-	-	-	0.044
HCM Control Delay (s)	8.1	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	205	185	120	80	102	223
Future Vol, veh/h	205	185	120	80	102	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	203	132	88	112	245

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	220	0	-	0	830	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1349	-	-	-	340	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1349	-	-	-	276	867
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	420	-

Approach	EB	WB	SB
HCM Control Delay, s	4.3	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1349	-	-	-	599
HCM Lane V/C Ratio	0.167	-	-	-	0.596
HCM Control Delay (s)	8.2	-	-	-	19.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	3.9

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	250	24	88	156	102	24	0	93	84	0	20
Future Vol, veh/h	13	250	24	88	156	102	24	0	93	84	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	269	26	95	168	110	26	0	100	90	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	277	0	0	295	0	0	733	777	282	772	735	223
Stage 1	-	-	-	-	-	-	310	310	-	412	412	-
Stage 2	-	-	-	-	-	-	423	467	-	360	323	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1286	-	-	1266	-	-	336	328	757	317	347	817
Stage 1	-	-	-	-	-	-	700	659	-	617	594	-
Stage 2	-	-	-	-	-	-	609	562	-	658	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1286	-	-	1266	-	-	302	295	757	254	312	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	295	-	254	312	-
Stage 1	-	-	-	-	-	-	691	650	-	609	541	-
Stage 2	-	-	-	-	-	-	540	511	-	564	642	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	2.1	13	24.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	578	1286	-	-	1266	-	-	293
HCM Lane V/C Ratio	0.218	0.011	-	-	0.075	-	-	0.382
HCM Control Delay (s)	13	7.8	0	-	8.1	0	-	24.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.2	-	-	1.7

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	427	216	9	0	10
Future Vol, veh/h	0	427	216	9	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	454	230	10	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	235
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	804
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	804
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	804
HCM Lane V/C Ratio	-	-	-	0.013
HCM Control Delay (s)	-	-	-	9.5
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 2010 Signalized Intersection Summary
12: Driveway/Davis St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	670	44	43	420	53	47	0	47	72	0	52
Future Volume (veh/h)	94	670	44	43	420	53	47	0	47	72	0	52
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	108	770	51	49	483	61	54	0	54	83	0	60
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	1693	112	117	1095	137	334	16	300	630	0	657
Arrive On Green	0.05	0.50	0.50	0.41	0.41	0.41	0.41	0.00	0.41	0.41	0.00	0.41
Sat Flow, veh/h	1774	3370	223	189	2639	330	685	38	723	1345	0	1583
Grp Volume(v), veh/h	108	404	417	290	0	303	108	0	0	83	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1823	1521	0	1637	1445	0	0	1345	0	1583
Q Serve(g_s), s	5.0	16.0	16.0	2.8	0.0	14.4	2.8	0.0	0.0	0.0	0.0	2.5
Cycle Q Clear(g_c), s	5.0	16.0	16.0	12.5	0.0	14.4	5.3	0.0	0.0	3.8	0.0	2.5
Prop In Lane	1.00		0.12	0.17		0.20	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	82	889	916	670	0	679	649	0	0	630	0	657
V/C Ratio(X)	1.32	0.45	0.46	0.43	0.00	0.45	0.17	0.00	0.00	0.13	0.00	0.09
Avail Cap(c_a), veh/h	82	889	916	670	0	679	649	0	0	630	0	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	17.4	17.4	22.1	0.0	22.8	20.1	0.0	0.0	19.7	0.0	19.3
Incr Delay (d2), s/veh	207.5	1.7	1.6	2.0	0.0	2.1	0.6	0.0	0.0	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	8.2	8.4	6.4	0.0	6.9	2.1	0.0	0.0	1.6	0.0	1.1
LnGrp Delay(d),s/veh	259.3	19.1	19.0	24.1	0.0	24.9	20.6	0.0	0.0	20.1	0.0	19.6
LnGrp LOS	F	B	B	C		C	C			C		B
Approach Vol, veh/h		929			593			108			143	
Approach Delay, s/veh		47.0			24.5			20.6			19.9	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		59.0		49.5	9.5	49.5		49.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		45.0		45.0	5.0	45.0		45.0
Max Q Clear Time (g_c+I1), s		18.0		5.8	7.0	16.4		7.3
Green Ext Time (p_c), s		10.9		1.3	0.0	11.2		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	558	94	121	363	62	67	185	213	66	136	74
Future Volume (veh/h)	100	558	94	121	363	62	67	185	213	66	136	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	109	607	102	132	395	67	73	201	232	72	148	80
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	812	136	167	857	144	123	650	553	122	650	552
Arrive On Green	0.08	0.27	0.27	0.09	0.28	0.28	0.07	0.35	0.35	0.07	0.35	0.35
Sat Flow, veh/h	1774	3034	509	1774	3032	510	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	109	354	355	132	229	233	73	201	232	72	148	80
Grp Sat Flow(s),veh/h/ln	1774	1770	1773	1774	1770	1773	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.9	14.9	15.0	6.0	8.7	8.9	3.3	6.4	9.1	3.2	4.6	2.8
Cycle Q Clear(g_c), s	4.9	14.9	15.0	6.0	8.7	8.9	3.3	6.4	9.1	3.2	4.6	2.8
Prop In Lane	1.00		0.29	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	474	475	167	500	501	123	650	553	122	650	552
V/C Ratio(X)	0.78	0.75	0.75	0.79	0.46	0.46	0.59	0.31	0.42	0.59	0.23	0.14
Avail Cap(c_a), veh/h	293	574	575	293	574	575	293	650	553	293	650	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	27.4	27.4	36.2	24.2	24.2	36.9	19.4	20.3	36.9	18.8	18.3
Incr Delay (d2), s/veh	8.9	4.3	4.4	8.1	0.7	0.7	4.5	1.2	2.3	4.4	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.8	7.9	3.3	4.4	4.4	1.8	3.5	4.3	1.7	2.5	1.3
LnGrp Delay(d),s/veh	45.9	31.7	31.8	44.4	24.8	24.9	41.4	20.6	22.6	41.4	19.6	18.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	B	B
Approach Vol, veh/h		818			594			506			300	
Approach Delay, s/veh		33.6			29.2			24.5			24.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	33.0	12.2	26.4	10.2	33.0	11.0	27.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.9	11.1	8.0	17.0	5.3	6.6	6.9	10.9
Green Ext Time (p_c), s	0.1	2.9	0.1	4.9	0.1	3.1	0.1	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	173	71	107	93	24	67	394	163	18	309	34
Future Volume (veh/h)	65	173	71	107	93	24	67	394	163	18	309	34
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	68	182	75	113	98	25	71	415	172	19	325	36
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	291	115	182	147	37	128	557	231	167	768	85
Arrive On Green	0.12	0.12	0.12	0.10	0.10	0.10	0.07	0.44	0.44	0.09	0.47	0.47
Sat Flow, veh/h	1774	2475	983	1774	1433	365	1774	1252	519	1774	1648	183
Grp Volume(v), veh/h	68	128	129	113	0	123	71	0	587	19	0	361
Grp Sat Flow(s),veh/h/ln	1774	1770	1689	1774	0	1798	1774	0	1771	1774	0	1831
Q Serve(g_s), s	2.6	5.1	5.4	4.5	0.0	4.9	2.9	0.0	20.5	0.7	0.0	9.8
Cycle Q Clear(g_c), s	2.6	5.1	5.4	4.5	0.0	4.9	2.9	0.0	20.5	0.7	0.0	9.8
Prop In Lane	1.00		0.58	1.00		0.20	1.00		0.29	1.00		0.10
Lane Grp Cap(c), veh/h	208	208	198	182	0	184	128	0	787	167	0	853
V/C Ratio(X)	0.33	0.62	0.65	0.62	0.00	0.67	0.55	0.00	0.75	0.11	0.00	0.42
Avail Cap(c_a), veh/h	479	478	456	479	0	485	169	0	787	479	0	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	31.3	31.4	32.0	0.0	32.2	33.4	0.0	17.2	30.9	0.0	13.2
Incr Delay (d2), s/veh	0.9	3.0	3.6	3.5	0.0	4.1	3.7	0.0	6.4	0.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.7	2.7	2.4	0.0	2.6	1.5	0.0	11.3	0.4	0.0	5.3
LnGrp Delay(d),s/veh	31.1	34.2	35.0	35.5	0.0	36.3	37.0	0.0	23.5	31.2	0.0	14.8
LnGrp LOS	C	C	C	D		D	D		C	C		B
Approach Vol, veh/h		325			236			658			380	
Approach Delay, s/veh		33.9			35.9			25.0			15.6	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.6		13.2	9.9	39.2		12.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	12.7	22.5		7.4	4.9	11.8		6.9
Green Ext Time (p_c), s	0.0	0.0		1.3	0.0	6.8		0.8

Intersection Summary		
HCM 2010 Ctrl Delay	26.2	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	578	160	49	292	50	132	247	82	67	165	267
Future Volume (veh/h)	381	578	160	49	292	50	132	247	82	67	165	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	397	602	167	51	304	52	138	257	85	70	172	278
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	809	224	102	587	99	173	684	673	118	627	786
Arrive On Green	0.16	0.30	0.30	0.06	0.19	0.19	0.10	0.37	0.37	0.07	0.34	0.34
Sat Flow, veh/h	1774	2740	759	1774	3030	512	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	397	388	381	51	176	180	138	257	85	70	172	278
Grp Sat Flow(s),veh/h/ln	1774	1770	1729	1774	1770	1772	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	13.5	16.8	16.8	2.4	7.5	7.7	6.4	8.6	2.8	3.2	5.7	9.1
Cycle Q Clear(g_c), s	13.5	16.8	16.8	2.4	7.5	7.7	6.4	8.6	2.8	3.2	5.7	9.1
Prop In Lane	1.00		0.44	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	523	511	102	343	343	173	684	673	118	627	786
V/C Ratio(X)	1.40	0.74	0.75	0.50	0.51	0.52	0.80	0.38	0.13	0.59	0.27	0.35
Avail Cap(c_a), veh/h	283	554	541	283	554	555	283	684	673	283	627	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	26.9	26.9	38.7	30.6	30.6	37.4	19.6	14.8	38.4	20.5	13.0
Incr Delay (d2), s/veh	201.3	5.1	5.3	3.7	1.2	1.2	8.2	1.6	0.4	4.6	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	8.9	8.8	1.3	3.8	3.9	3.5	4.7	1.3	1.7	3.1	4.2
LnGrp Delay(d),s/veh	236.8	32.0	32.2	42.4	31.8	31.9	45.5	21.2	15.2	43.0	21.6	14.3
LnGrp LOS	F	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		1166			407			480			520	
Approach Delay, s/veh		101.8			33.1			27.1			20.6	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	35.6	9.4	29.5	12.7	33.0	18.0	20.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	15.2	10.6	4.4	18.8	8.4	11.1	15.5	9.7
Green Ext Time (p_c), s	0.1	3.6	0.0	4.1	0.1	3.6	0.0	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	60.6
HCM 2010 LOS	E

General Plan (2035)

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	365	161	221	735	58	130	478	112	62	661	313
Future Volume (veh/h)	168	365	161	221	735	58	130	478	112	62	661	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	179	388	171	235	782	62	138	509	119	66	703	333
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	880	394	261	915	73	171	1222	780	110	1101	683
Arrive On Green	0.12	0.25	0.25	0.15	0.28	0.28	0.10	0.35	0.35	0.06	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3323	263	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	179	388	171	235	416	428	138	509	119	66	703	333
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1816	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.0	8.5	8.3	11.9	20.4	20.4	7.0	10.1	3.8	3.3	15.6	13.9
Cycle Q Clear(g_c), s	9.0	8.5	8.3	11.9	20.4	20.4	7.0	10.1	3.8	3.3	15.6	13.9
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	880	394	261	488	500	171	1222	780	110	1101	683
V/C Ratio(X)	0.84	0.44	0.43	0.90	0.85	0.85	0.81	0.42	0.15	0.60	0.64	0.49
Avail Cap(c_a), veh/h	261	1024	458	261	512	525	261	1222	780	261	1101	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	29.0	29.0	38.4	31.4	31.4	40.6	22.9	12.7	41.8	27.1	18.7
Incr Delay (d2), s/veh	17.7	0.3	0.8	30.7	12.8	12.6	10.2	1.0	0.4	5.1	2.8	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	4.2	3.7	8.0	11.7	12.0	3.9	5.1	1.7	1.8	8.0	6.5
LnGrp Delay(d),s/veh	57.1	29.4	29.7	69.1	44.2	44.0	50.8	24.0	13.2	47.0	30.0	21.2
LnGrp LOS	E	C	C	E	D	D	D	C	B	D	C	C
Approach Vol, veh/h		738			1079			766			1102	
Approach Delay, s/veh		36.2			49.6			27.1			28.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	36.1	18.0	27.3	13.3	33.0	15.5	29.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	5.3	12.1	13.9	10.5	9.0	17.6	11.0	22.4
Green Ext Time (p_c), s	0.1	8.6	0.0	7.9	0.1	6.6	0.1	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	719	0	0	1043
Future Vol, veh/h	0	0	719	0	0	1043
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	765	0	0	1110

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1320	382	0	0	765	0
Stage 1	765	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	148	616	-	-	844	-
Stage 1	420	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	148	616	-	-	844	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	844	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

HCM 2010 Signalized Intersection Summary
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	71	132	67	90	23	109	672	77	18	1012	41
Future Volume (veh/h)	49	71	132	67	90	23	109	672	77	18	1012	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	73	136	69	93	24	112	693	79	19	1043	42
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	100	186	131	339	288	158	1650	738	55	1445	647
Arrive On Green	0.06	0.17	0.17	0.07	0.18	0.18	0.09	0.47	0.47	0.03	0.41	0.41
Sat Flow, veh/h	1774	584	1087	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	51	0	209	69	93	24	112	693	79	19	1043	42
Grp Sat Flow(s),veh/h/ln	1774	0	1671	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.9	0.0	8.3	2.6	3.0	0.9	4.3	9.1	2.0	0.7	17.3	1.1
Cycle Q Clear(g_c), s	1.9	0.0	8.3	2.6	3.0	0.9	4.3	9.1	2.0	0.7	17.3	1.1
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	0	286	131	339	288	158	1650	738	55	1445	647
V/C Ratio(X)	0.46	0.00	0.73	0.53	0.27	0.08	0.71	0.42	0.11	0.35	0.72	0.06
Avail Cap(c_a), veh/h	343	0	634	343	707	601	343	1650	738	343	1445	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	27.4	31.1	24.6	23.7	30.9	12.4	10.5	33.1	17.3	12.6
Incr Delay (d2), s/veh	2.9	0.0	3.6	3.2	0.4	0.1	5.8	0.8	0.3	3.7	3.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.1	1.4	1.6	0.4	2.3	4.6	0.9	0.4	9.0	0.5
LnGrp Delay(d),s/veh	34.4	0.0	31.0	34.4	25.0	23.8	36.7	13.1	10.8	36.8	20.5	12.7
LnGrp LOS	C		C	C	C	C	D	B	B	D	C	B
Approach Vol, veh/h		260			186			884			1104	
Approach Delay, s/veh		31.7			28.3			15.9			20.5	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	37.0	9.7	16.4	10.7	33.0	8.9	17.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	2.7	11.1	4.6	10.3	6.3	19.3	3.9	5.0
Green Ext Time (p_c), s	0.0	11.3	0.1	1.7	0.1	6.9	0.1	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	302	4	181	307	676	0	0	868	346
Future Volume (veh/h)	0	0	0	302	4	181	307	676	0	0	868	346
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				315	4	189	320	704	0	0	904	360
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				390	5	352	361	2377	0	0	1030	408
Arrive On Green				0.22	0.22	0.22	0.20	0.67	0.00	0.00	0.42	0.42
Sat Flow, veh/h				1753	22	1583	1774	3632	0	0	2571	981
Grp Volume(v), veh/h				319	0	189	320	704	0	0	644	620
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1690
Q Serve(g_s), s				14.5	0.0	9.0	14.9	6.9	0.0	0.0	28.4	28.8
Cycle Q Clear(g_c), s				14.5	0.0	9.0	14.9	6.9	0.0	0.0	28.4	28.8
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.58
Lane Grp Cap(c), veh/h				395	0	352	361	2377	0	0	735	702
V/C Ratio(X)				0.81	0.00	0.54	0.89	0.30	0.00	0.00	0.88	0.88
Avail Cap(c_a), veh/h				708	0	631	436	2377	0	0	735	702
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	29.2	32.9	5.7	0.0	0.0	22.8	22.9
Incr Delay (d2), s/veh				3.9	0.0	1.3	17.2	0.3	0.0	0.0	13.8	15.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.5	0.0	4.0	9.0	3.4	0.0	0.0	16.6	16.2
LnGrp Delay(d),s/veh				35.3	0.0	30.4	50.1	6.0	0.0	0.0	36.7	38.0
LnGrp LOS				D		C	D	A			D	D
Approach Vol, veh/h					508			1024			1264	
Approach Delay, s/veh					33.5			19.8			37.3	
Approach LOS					C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			21.8	39.8		23.4
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		8.9			16.9	30.8		16.5
Green Ext Time (p_c), s		21.9			0.4	0.8		2.4

Intersection Summary		
HCM 2010 Ctrl Delay		30.2
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	4	526	0	0	0	0	701	155	180	995	0
Future Volume (veh/h)	274	4	526	0	0	0	0	701	155	180	995	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	283	0	537				0	715	158	184	1015	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1840	402	223	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.44	0.44	0.13	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	4346	913	1774	3632	0
Grp Volume(v), veh/h	283	0	537				0	579	294	184	1015	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1702	1774	1770	0
Q Serve(g_s), s	6.1	0.0	29.9				0.0	11.5	11.7	10.1	15.6	0.0
Cycle Q Clear(g_c), s	6.1	0.0	29.9				0.0	11.5	11.7	10.1	15.6	0.0
Prop In Lane	1.00		1.00				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1493	749	223	2162	0
V/C Ratio(X)	0.27	0.00	1.13				0.00	0.39	0.39	0.83	0.47	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1493	749	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.7	0.0	35.0				0.0	18.9	18.9	42.7	10.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	83.6				0.0	0.2	0.3	7.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	24.0				0.0	5.4	5.6	5.4	7.8	0.0
LnGrp Delay(d),s/veh	26.8	0.0	118.7				0.0	19.0	19.3	50.2	11.3	0.0
LnGrp LOS	C		F					B	B	D	B	
Approach Vol, veh/h		820						873			1199	
Approach Delay, s/veh		87.0						19.1			17.3	
Approach LOS		F						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.1	48.5		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.9	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	12.1	13.7		31.9		17.6		
Green Ext Time (p_c), s	0.4	9.3		0.0		19.6		

Intersection Summary	
HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	165	1	0	180	0	0	0	1	0	0	0
Future Vol, veh/h	0	165	1	0	180	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	181	1	0	198	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	198	0	0	182	0	0	281	380	91	289	380	99
Stage 1	-	-	-	-	-	-	182	182	-	198	198	-
Stage 2	-	-	-	-	-	-	99	198	-	91	182	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1372	-	-	1391	-	-	649	551	949	641	551	937
Stage 1	-	-	-	-	-	-	802	748	-	785	736	-
Stage 2	-	-	-	-	-	-	896	736	-	906	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1372	-	-	1391	-	-	649	551	949	640	551	937
Mov Cap-2 Maneuver	-	-	-	-	-	-	649	551	-	640	551	-
Stage 1	-	-	-	-	-	-	802	748	-	785	736	-
Stage 2	-	-	-	-	-	-	896	736	-	905	748	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	949	1372	-	-	1391	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	156	1	0	174	1	2	0	0	0	0	6
Future Vol, veh/h	11	156	1	0	174	1	2	0	0	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	181	1	0	202	1	2	0	0	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	183	0	0	411	411	91	319	411	203
Stage 1	-	-	-	-	-	-	208	208	-	203	203	-
Stage 2	-	-	-	-	-	-	203	203	-	116	208	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1367	-	-	1391	-	-	538	530	949	622	530	837
Stage 1	-	-	-	-	-	-	775	729	-	798	733	-
Stage 2	-	-	-	-	-	-	798	733	-	877	729	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1367	-	-	1391	-	-	530	525	949	617	525	837
Mov Cap-2 Maneuver	-	-	-	-	-	-	530	525	-	617	525	-
Stage 1	-	-	-	-	-	-	768	722	-	790	733	-
Stage 2	-	-	-	-	-	-	791	733	-	869	722	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	11.8	9.3
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	530	1367	-	-	1391	-	-	-	837
HCM Lane V/C Ratio	0.004	0.009	-	-	-	-	-	-	0.008
HCM Control Delay (s)	11.8	7.7	-	-	0	-	-	0	9.3
HCM Lane LOS	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	135	169	4	0	5
Future Vol, veh/h	21	135	169	4	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	161	201	5	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	206	0	-	0	415	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1365	-	-	-	594	837
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	824	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1365	-	-	-	582	837
Mov Cap-2 Maneuver	-	-	-	-	639	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1365	-	-	-	837
HCM Lane V/C Ratio	0.018	-	-	-	0.007
HCM Control Delay (s)	7.7	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	124	170	23	5	4
Future Vol, veh/h	12	124	170	23	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	138	189	26	6	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	214	0	-	0	366	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	164	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1356	-	-	-	634	839
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1356	-	-	-	628	839
Mov Cap-2 Maneuver	-	-	-	-	672	-
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1356	-	-	-	737
HCM Lane V/C Ratio	0.01	-	-	-	0.014
HCM Control Delay (s)	7.7	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	128	190	6	0	1
Future Vol, veh/h	0	128	190	6	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	149	221	7	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	224
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	815
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	815
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	815
HCM Lane V/C Ratio	-	-	-	0.001
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	129	192	4	0	6
Future Vol, veh/h	0	129	192	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	148	221	5	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	223
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	817
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	817
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	817
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 2010 Signalized Intersection Summary
12: Driveway/Davis St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	480	0	0	913	213	0	0	0	164	0	109
Future Volume (veh/h)	71	480	0	0	913	213	0	0	0	164	0	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	81	545	0	0	1038	242	0	0	0	186	0	124
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	83	1741	0	0	1149	267	0	789	0	819	0	670
Arrive On Green	0.05	0.49	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.42	0.00	0.42
Sat Flow, veh/h	1774	3632	0	0	2946	663	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	81	545	0	0	642	638	0	0	0	186	0	124
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1746	0	1863	0	1774	0	1583
Q Serve(g_s), s	4.8	9.8	0.0	0.0	36.2	36.5	0.0	0.0	0.0	7.2	0.0	5.2
Cycle Q Clear(g_c), s	4.8	9.8	0.0	0.0	36.2	36.5	0.0	0.0	0.0	7.2	0.0	5.2
Prop In Lane	1.00		0.00	0.00		0.38	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	1741	0	0	712	703	0	789	0	819	0	670
V/C Ratio(X)	0.97	0.31	0.00	0.00	0.90	0.91	0.00	0.00	0.00	0.23	0.00	0.18
Avail Cap(c_a), veh/h	83	1741	0	0	766	756	0	789	0	819	0	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	16.2	0.0	0.0	29.8	29.9	0.0	0.0	0.0	19.7	0.0	19.2
Incr Delay (d2), s/veh	88.4	0.1	0.0	0.0	13.3	14.1	0.0	0.0	0.0	0.6	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	4.8	0.0	0.0	20.3	20.3	0.0	0.0	0.0	3.7	0.0	2.4
LnGrp Delay(d),s/veh	139.0	16.3	0.0	0.0	43.1	44.0	0.0	0.0	0.0	20.4	0.0	19.8
LnGrp LOS	F	B			D	D				C		B
Approach Vol, veh/h		626			1280			0			310	
Approach Delay, s/veh		32.2			43.5			0.0			20.1	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		56.8		49.5	9.5	47.3
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		0.0		11.8		9.2	6.8	38.5
Green Ext Time (p_c), s		0.0		17.6		1.3	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	443	164	265	829	139	170	256	116	133	204	115
Future Volume (veh/h)	37	443	164	265	829	139	170	256	116	133	204	115
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	44	527	195	315	987	165	202	305	138	158	243	137
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	605	223	251	1001	167	235	602	512	191	556	473
Arrive On Green	0.05	0.24	0.24	0.14	0.33	0.33	0.13	0.32	0.32	0.11	0.30	0.30
Sat Flow, veh/h	1774	2534	934	1774	3036	507	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	44	367	355	315	575	577	202	305	138	158	243	137
Grp Sat Flow(s),veh/h/ln	1774	1770	1698	1774	1770	1773	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.3	19.0	19.2	13.5	30.8	30.8	10.6	12.6	6.2	8.3	10.0	6.3
Cycle Q Clear(g_c), s	2.3	19.0	19.2	13.5	30.8	30.8	10.6	12.6	6.2	8.3	10.0	6.3
Prop In Lane	1.00		0.55	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	423	405	251	584	585	235	602	512	191	556	473
V/C Ratio(X)	0.49	0.87	0.87	1.25	0.99	0.99	0.86	0.51	0.27	0.83	0.44	0.29
Avail Cap(c_a), veh/h	251	491	472	251	584	585	251	602	512	251	556	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	34.9	34.9	41.0	31.7	31.8	40.5	26.1	23.9	41.7	27.0	25.7
Incr Delay (d2), s/veh	4.1	13.9	14.9	143.0	33.4	33.7	23.8	3.0	1.3	15.7	2.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	10.9	10.6	16.5	20.4	20.5	6.8	7.0	2.9	4.9	5.5	3.0
LnGrp Delay(d),s/veh	48.2	48.7	49.9	184.0	65.1	65.5	64.3	29.1	25.2	57.4	29.5	27.2
LnGrp LOS	D	D	D	F	E	E	E	C	C	E	C	C
Approach Vol, veh/h		766			1467			645			538	
Approach Delay, s/veh		49.2			90.8			39.3			37.1	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	35.3	18.0	27.3	17.1	33.0	9.3	36.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	10.3	14.6	15.5	21.2	12.6	12.0	4.3	32.8
Green Ext Time (p_c), s	0.1	3.7	0.0	1.6	0.1	3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	88	36	96	97	109	46	400	94	83	529	27
Future Volume (veh/h)	9	88	36	96	97	109	46	400	94	83	529	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	110	45	120	121	136	58	500	118	104	661	34
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	215	84	326	147	165	113	604	142	157	771	40
Arrive On Green	0.09	0.09	0.09	0.18	0.18	0.18	0.06	0.41	0.41	0.09	0.44	0.44
Sat Flow, veh/h	1774	2490	971	1774	802	902	1774	1458	344	1774	1756	90
Grp Volume(v), veh/h	11	77	78	120	0	257	58	0	618	104	0	695
Grp Sat Flow(s),veh/h/ln	1774	1770	1691	1774	0	1704	1774	0	1802	1774	0	1847
Q Serve(g_s), s	0.5	3.3	3.5	4.7	0.0	11.5	2.5	0.0	24.2	4.5	0.0	26.8
Cycle Q Clear(g_c), s	0.5	3.3	3.5	4.7	0.0	11.5	2.5	0.0	24.2	4.5	0.0	26.8
Prop In Lane	1.00		0.57	1.00		0.53	1.00		0.19	1.00		0.05
Lane Grp Cap(c), veh/h	153	153	146	326	0	313	113	0	746	157	0	810
V/C Ratio(X)	0.07	0.50	0.54	0.37	0.00	0.82	0.51	0.00	0.83	0.66	0.00	0.86
Avail Cap(c_a), veh/h	451	450	430	451	0	433	159	0	746	451	0	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	34.5	34.6	28.3	0.0	31.0	35.8	0.0	20.7	34.9	0.0	20.0
Incr Delay (d2), s/veh	0.2	2.5	3.1	0.7	0.0	8.7	3.6	0.0	10.3	4.7	0.0	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.7	1.8	2.4	0.0	6.1	1.3	0.0	14.1	2.4	0.0	16.1
LnGrp Delay(d),s/veh	33.4	37.1	37.7	29.0	0.0	39.7	39.4	0.0	30.9	39.6	0.0	31.3
LnGrp LOS	C	D	D	C		D	D		C	D		C
Approach Vol, veh/h		166			377			676			799	
Approach Delay, s/veh		37.1			36.3			31.7			32.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.2		11.3	9.5	39.2		19.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	13.5	26.2		5.5	4.5	28.8		13.5
Green Ext Time (p_c), s	0.2	0.0		0.7	0.0	4.0		1.0

Intersection Summary		
HCM 2010 Ctrl Delay	33.3	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	404	167	40	462	59	172	369	124	102	400	152
Future Volume (veh/h)	100	404	167	40	462	59	172	369	124	102	400	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	112	454	188	45	519	66	193	415	139	115	449	171
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	659	271	96	766	97	230	712	691	147	625	659
Arrive On Green	0.08	0.27	0.27	0.05	0.24	0.24	0.13	0.38	0.38	0.08	0.34	0.34
Sat Flow, veh/h	1774	2449	1006	1774	3161	401	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	112	327	315	45	290	295	193	415	139	115	449	171
Grp Sat Flow(s),veh/h/ln	1774	1770	1685	1774	1770	1792	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.3	14.1	14.3	2.1	12.6	12.7	9.0	15.0	4.6	5.4	17.9	6.0
Cycle Q Clear(g_c), s	5.3	14.1	14.3	2.1	12.6	12.7	9.0	15.0	4.6	5.4	17.9	6.0
Prop In Lane	1.00		0.60	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	476	454	96	429	434	230	712	691	147	625	659
V/C Ratio(X)	0.78	0.69	0.69	0.47	0.68	0.68	0.84	0.58	0.20	0.78	0.72	0.26
Avail Cap(c_a), veh/h	282	552	525	282	552	559	282	712	691	282	625	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	27.8	27.9	39.0	29.2	29.2	36.1	20.9	14.8	38.2	24.7	16.2
Incr Delay (d2), s/veh	8.9	2.9	3.3	3.6	2.2	2.3	16.6	3.5	0.7	8.8	7.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.3	7.1	1.1	6.4	6.5	5.5	8.4	2.1	3.0	10.4	2.8
LnGrp Delay(d),s/veh	47.3	30.8	31.2	42.6	31.4	31.5	52.7	24.3	15.5	47.1	31.7	17.2
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		754			630			747			735	
Approach Delay, s/veh		33.4			32.2			30.0			30.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	37.0	9.1	27.4	15.5	33.0	11.4	25.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	7.4	17.0	4.1	16.3	11.0	19.9	7.3	14.7
Green Ext Time (p_c), s	0.1	5.1	0.0	5.4	0.1	4.2	0.1	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	841	170	137	497	60	167	694	195	79	537	216
Future Volume (veh/h)	267	841	170	137	497	60	167	694	195	79	537	216
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	858	173	140	507	61	170	708	199	81	548	220
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1016	454	173	761	91	204	1259	718	117	1086	716
Arrive On Green	0.15	0.29	0.29	0.10	0.24	0.24	0.12	0.36	0.36	0.07	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3183	382	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	272	858	173	140	281	287	170	708	199	81	548	220
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1795	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.5	21.2	8.1	7.2	13.3	13.4	8.7	15.0	7.3	4.2	11.8	8.2
Cycle Q Clear(g_c), s	13.5	21.2	8.1	7.2	13.3	13.4	8.7	15.0	7.3	4.2	11.8	8.2
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1016	454	173	423	429	204	1259	718	117	1086	716
V/C Ratio(X)	1.06	0.84	0.38	0.81	0.66	0.67	0.83	0.56	0.28	0.69	0.50	0.31
Avail Cap(c_a), veh/h	258	1016	454	258	505	512	258	1259	718	258	1086	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	31.2	26.5	41.1	32.0	32.0	40.2	24.1	15.9	42.5	26.4	16.2
Incr Delay (d2), s/veh	71.3	6.7	0.5	11.1	2.5	2.6	16.7	1.8	1.0	7.1	1.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	11.3	3.6	4.1	6.8	6.9	5.2	7.6	3.4	2.3	6.0	3.8
LnGrp Delay(d),s/veh	111.0	37.8	27.0	52.2	34.5	34.6	57.0	25.9	16.8	49.5	28.1	17.3
LnGrp LOS	F	D	C	D	C	C	E	C	B	D	C	B
Approach Vol, veh/h		1303			708			1077			849	
Approach Delay, s/veh		51.7			38.0			29.1			27.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	37.6	13.6	31.2	15.2	33.0	18.0	26.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.2	17.0	9.2	23.2	10.7	13.8	15.5	15.4
Green Ext Time (p_c), s	0.1	7.0	0.1	2.5	0.1	8.2	0.0	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1056	0	0	843
Future Vol, veh/h	0	0	1056	0	0	843
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1078	0	0	860

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1422	539	0	0	1078	0
Stage 1	1078	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	155	487	-	-	643	-
Stage 1	281	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	155	487	-	-	643	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	281	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	643	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	144	259	97	90	35	162	981	134	24	806	44
Future Volume (veh/h)	91	144	259	97	90	35	162	981	134	24	806	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	92	145	262	98	91	35	164	991	135	24	814	44
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	162	294	131	510	434	200	1447	647	63	1173	525
Arrive On Green	0.07	0.27	0.27	0.07	0.27	0.27	0.11	0.41	0.41	0.04	0.33	0.33
Sat Flow, veh/h	1774	596	1077	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	92	0	407	98	91	35	164	991	135	24	814	44
Grp Sat Flow(s),veh/h/ln	1774	0	1673	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.4	0.0	20.1	4.7	3.2	1.4	7.8	19.8	4.7	1.1	17.2	1.6
Cycle Q Clear(g_c), s	4.4	0.0	20.1	4.7	3.2	1.4	7.8	19.8	4.7	1.1	17.2	1.6
Prop In Lane	1.00		0.64	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	0	456	131	510	434	200	1447	647	63	1173	525
V/C Ratio(X)	0.72	0.00	0.89	0.75	0.18	0.08	0.82	0.68	0.21	0.38	0.69	0.08
Avail Cap(c_a), veh/h	279	0	516	279	574	488	279	1447	647	279	1173	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	30.1	39.1	23.8	23.2	37.3	20.9	16.4	40.5	24.9	19.8
Incr Delay (d2), s/veh	7.2	0.0	16.4	8.4	0.2	0.1	12.5	2.7	0.7	3.7	3.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	11.3	2.6	1.7	0.6	4.5	10.2	2.2	0.6	8.9	0.8
LnGrp Delay(d),s/veh	46.3	0.0	46.4	47.4	24.0	23.3	49.8	23.5	17.2	44.3	28.3	20.1
LnGrp LOS	D		D	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		499			224			1290			882	
Approach Delay, s/veh		46.4			34.1			26.2			28.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	39.7	10.8	27.9	14.2	33.0	10.7	28.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	3.1	21.8	6.7	22.1	9.8	19.2	6.4	5.2
Green Ext Time (p_c), s	0.0	5.5	0.1	1.3	0.1	7.2	0.1	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	242	4	189	377	1096	0	0	874	292
Future Volume (veh/h)	0	0	0	242	4	189	377	1096	0	0	874	292
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				252	4	197	393	1142	0	0	910	304
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				328	5	298	430	2483	0	0	1054	351
Arrive On Green				0.19	0.19	0.19	0.24	0.70	0.00	0.00	0.40	0.40
Sat Flow, veh/h				1748	28	1583	1774	3632	0	0	2703	869
Grp Volume(v), veh/h				256	0	197	393	1142	0	0	616	598
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1709
Q Serve(g_s), s				11.1	0.0	9.4	17.5	11.6	0.0	0.0	25.9	26.1
Cycle Q Clear(g_c), s				11.1	0.0	9.4	17.5	11.6	0.0	0.0	25.9	26.1
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.51
Lane Grp Cap(c), veh/h				334	0	298	430	2483	0	0	714	690
V/C Ratio(X)				0.77	0.00	0.66	0.91	0.46	0.00	0.00	0.86	0.87
Avail Cap(c_a), veh/h				739	0	659	456	2483	0	0	714	690
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.4	0.0	30.7	30.0	5.4	0.0	0.0	22.2	22.3
Incr Delay (d2), s/veh				3.7	0.0	2.5	22.1	0.6	0.0	0.0	13.0	13.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.8	0.0	4.3	11.2	5.8	0.0	0.0	15.2	14.9
LnGrp Delay(d),s/veh				35.1	0.0	33.2	52.1	6.0	0.0	0.0	35.2	36.1
LnGrp LOS				D		C	D	A			D	D
Approach Vol, veh/h					453			1535			1214	
Approach Delay, s/veh					34.2			17.8			35.6	
Approach LOS					C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			24.2	37.4		19.8
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		13.6			19.5	28.1		13.1
Green Ext Time (p_c), s		26.8			0.2	3.3		2.2

Intersection Summary		
HCM 2010 Ctrl Delay		26.9
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	502	3	354	0	0	0	0	981	322	191	931	0
Future Volume (veh/h)	502	3	354	0	0	0	0	981	322	191	931	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	525	0	369				0	1022	335	199	970	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	942	0	420				0	1736	569	240	2266	0
Arrive On Green	0.27	0.00	0.27				0.00	0.46	0.46	0.14	0.64	0.00
Sat Flow, veh/h	3548	0	1583				0	3959	1242	1774	3632	0
Grp Volume(v), veh/h	525	0	369				0	914	443	199	970	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1644	1774	1770	0
Q Serve(g_s), s	12.2	0.0	21.3				0.0	19.1	19.1	10.4	13.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	21.3				0.0	19.1	19.1	10.4	13.0	0.0
Prop In Lane	1.00		1.00				0.00		0.76	1.00		0.00
Lane Grp Cap(c), veh/h	942	0	420				0	1552	752	240	2266	0
V/C Ratio(X)	0.56	0.00	0.88				0.00	0.59	0.59	0.83	0.43	0.00
Avail Cap(c_a), veh/h	1112	0	496				0	1552	752	556	2266	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.2	0.0	33.6				0.0	19.2	19.2	40.2	8.5	0.0
Incr Delay (d2), s/veh	0.5	0.0	14.5				0.0	0.6	1.2	7.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	11.0				0.0	9.0	8.9	5.6	6.5	0.0
LnGrp Delay(d),s/veh	30.7	0.0	48.1				0.0	19.8	20.4	47.4	9.1	0.0
LnGrp LOS	C		D					B	C	D	A	
Approach Vol, veh/h		894						1357			1169	
Approach Delay, s/veh		37.9						20.0			15.6	
Approach LOS		D						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.4	48.2		29.8		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	12.4	21.1		23.3		15.0		
Green Ext Time (p_c), s	0.5	5.0		2.0		27.1		

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑			⇳			⇳	
Traffic Vol, veh/h	0	306	22	0	228	0	0	0	22	0	0	0
Future Vol, veh/h	0	306	22	0	228	0	0	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	326	23	0	243	0	0	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	580	580	174	373	592	243
Stage 1	-	-	-	-	-	-	337	337	-	243	243	-
Stage 2	-	-	-	-	-	-	243	243	-	130	349	-
Critical Hdwy	-	-	-	-	-	-	6.78	6.53	7.13	6.78	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	7.33	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.73	5.53	-
Follow-up Hdwy	-	-	-	-	-	-	3.669	4.019	3.919	3.669	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	436	425	714	584	418	795
Stage 1	0	-	-	0	-	0	584	640	-	732	704	-
Stage 2	0	-	-	0	-	0	732	704	-	822	633	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	436	425	714	565	418	795
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	425	-	565	418	-
Stage 1	-	-	-	-	-	-	584	640	-	732	704	-
Stage 2	-	-	-	-	-	-	732	704	-	795	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.2	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	714	-	-	-	-
HCM Lane V/C Ratio	0.033	-	-	-	-
HCM Control Delay (s)	10.2	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	273	4	4	182	5	2	2	0	7	0	35
Future Vol, veh/h	55	273	4	4	182	5	2	2	0	7	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	310	5	5	207	6	2	2	0	8	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	315	0	0	657	660	157	500	659	210
Stage 1	-	-	-	-	-	-	438	438	-	219	219	-
Stage 2	-	-	-	-	-	-	219	222	-	281	440	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1356	-	-	1244	-	-	364	382	861	467	383	830
Stage 1	-	-	-	-	-	-	568	578	-	783	721	-
Stage 2	-	-	-	-	-	-	783	719	-	703	577	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1356	-	-	1244	-	-	333	363	861	447	364	830
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	363	-	447	364	-
Stage 1	-	-	-	-	-	-	542	551	-	747	718	-
Stage 2	-	-	-	-	-	-	742	716	-	668	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	15.5	10.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	347	1356	-	-	1244	-	-	447	830
HCM Lane V/C Ratio	0.013	0.046	-	-	0.004	-	-	0.018	0.048
HCM Control Delay (s)	15.5	7.8	-	-	7.9	-	-	13.2	9.6
HCM Lane LOS	C	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.1	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	271	182	7	10	10
Future Vol, veh/h	11	271	182	7	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	298	200	8	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	208	0	-	0	526	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1363	-	-	-	512	837
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1363	-	-	-	506	837
Mov Cap-2 Maneuver	-	-	-	-	582	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1363	-	-	-	687
HCM Lane V/C Ratio	0.009	-	-	-	0.032
HCM Control Delay (s)	7.7	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	259	175	9	25	16
Future Vol, veh/h	19	259	175	9	25	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	285	192	10	27	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	202	0	-	0	523	197
Stage 1	-	-	-	-	197	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1370	-	-	-	514	844
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1370	-	-	-	505	844
Mov Cap-2 Maneuver	-	-	-	-	579	-
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	718	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1370	-	-	-	660
HCM Lane V/C Ratio	0.015	-	-	-	0.068
HCM Control Delay (s)	7.7	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	284	177	25	0	7
Future Vol, veh/h	1	284	177	25	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	305	190	27	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	217	0	-	0	-	204
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1353	-	-	-	0	837
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1353	-	-	-	-	837
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1353	-	-	-	837
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s)	7.7	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	284	193	8	0	9
Future Vol, veh/h	0	284	193	8	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	302	205	9	0	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	210
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	830
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	830
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	830
HCM Lane V/C Ratio	-	-	-	0.012
HCM Control Delay (s)	-	-	-	9.4
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	991	0	0	618	58	0	0	0	85	0	62
Future Volume (veh/h)	120	991	0	0	618	58	0	0	0	85	0	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	0	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	138	1139	0	0	710	67	0	0	0	98	0	71
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	82	1778	0	0	1356	128	0	773	0	802	0	657
Arrive On Green	0.05	0.50	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1774	3632	0	0	3363	308	0	1863	0	1774	0	1583
Grp Volume(v), veh/h	138	1139	0	0	384	393	0	0	0	98	0	71
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1808	0	1863	0	1774	0	1583
Q Serve(g_s), s	5.0	25.6	0.0	0.0	17.6	17.6	0.0	0.0	0.0	3.7	0.0	3.0
Cycle Q Clear(g_c), s	5.0	25.6	0.0	0.0	17.6	17.6	0.0	0.0	0.0	3.7	0.0	3.0
Prop In Lane	1.00		0.00	0.00		0.17	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	1778	0	0	734	750	0	773	0	802	0	657
V/C Ratio(X)	1.69	0.64	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.12	0.00	0.11
Avail Cap(c_a), veh/h	82	1778	0	0	734	750	0	773	0	802	0	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	19.8	0.0	0.0	23.7	23.7	0.0	0.0	0.0	19.7	0.0	19.5
Incr Delay (d2), s/veh	356.5	1.8	0.0	0.0	2.7	2.6	0.0	0.0	0.0	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	12.9	0.0	0.0	9.1	9.3	0.0	0.0	0.0	1.9	0.0	1.4
LnGrp Delay(d),s/veh	408.3	21.6	0.0	0.0	26.4	26.3	0.0	0.0	0.0	20.0	0.0	19.8
LnGrp LOS	F	C			C	C				B		B
Approach Vol, veh/h		1277			777			0			169	
Approach Delay, s/veh		63.4			26.4			0.0			19.9	
Approach LOS		E			C						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		59.0		49.5	9.5	49.5		49.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		45.0		45.0	5.0	45.0		45.0
Max Q Clear Time (g_c+I1), s		27.6		5.7	7.0	19.6		0.0
Green Ext Time (p_c), s		12.0		0.7	0.0	15.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	801	120	86	475	83	121	250	242	78	184	90
Future Volume (veh/h)	122	801	120	86	475	83	121	250	242	78	184	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	133	871	130	93	516	90	132	272	263	85	200	98
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	934	139	127	845	147	166	652	554	124	608	517
Arrive On Green	0.09	0.30	0.30	0.07	0.28	0.28	0.09	0.35	0.35	0.07	0.33	0.33
Sat Flow, veh/h	1774	3090	461	1774	3016	524	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	133	499	502	93	302	304	132	272	263	85	200	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1781	1774	1770	1770	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	6.4	23.9	23.9	4.5	12.9	13.0	6.4	9.7	11.3	4.1	7.1	3.9
Cycle Q Clear(g_c), s	6.4	23.9	23.9	4.5	12.9	13.0	6.4	9.7	11.3	4.1	7.1	3.9
Prop In Lane	1.00		0.26	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	535	539	127	496	496	166	652	554	124	608	517
V/C Ratio(X)	0.80	0.93	0.93	0.73	0.61	0.61	0.80	0.42	0.47	0.68	0.33	0.19
Avail Cap(c_a), veh/h	274	537	541	274	537	537	274	652	554	274	608	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	29.6	29.6	39.7	27.3	27.3	38.8	21.6	22.1	39.7	22.2	21.1
Incr Delay (d2), s/veh	8.4	23.3	23.2	7.8	1.8	1.8	8.4	2.0	2.9	6.5	1.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	15.1	15.2	2.5	6.5	6.6	3.5	5.3	5.4	2.2	3.9	1.8
LnGrp Delay(d),s/veh	47.2	52.9	52.8	47.5	29.0	29.1	47.2	23.6	25.0	46.2	23.6	21.9
LnGrp LOS	D	D	D	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1134			699			667			383	
Approach Delay, s/veh		52.2			31.5			28.8			28.2	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	35.0	10.8	30.9	12.7	33.0	12.7	29.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.1	13.3	6.5	25.9	8.4	9.1	8.4	15.0
Green Ext Time (p_c), s	0.1	3.7	0.1	0.5	0.1	4.0	0.1	7.4

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	172	72	86	85	107	65	480	156	36	339	24
Future Volume (veh/h)	42	172	72	86	85	107	65	480	156	36	339	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	181	76	91	89	113	68	505	164	38	357	25
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	280	113	269	113	144	122	564	183	157	754	53
Arrive On Green	0.11	0.11	0.11	0.15	0.15	0.15	0.07	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	2461	995	1774	747	948	1774	1348	438	1774	1721	121
Grp Volume(v), veh/h	44	128	129	91	0	202	68	0	669	38	0	382
Grp Sat Flow(s),veh/h/ln	1774	1770	1687	1774	0	1695	1774	0	1786	1774	0	1841
Q Serve(g_s), s	1.8	5.5	5.8	3.6	0.0	9.1	2.9	0.0	27.6	1.6	0.0	11.6
Cycle Q Clear(g_c), s	1.8	5.5	5.8	3.6	0.0	9.1	2.9	0.0	27.6	1.6	0.0	11.6
Prop In Lane	1.00		0.59	1.00		0.56	1.00		0.25	1.00		0.07
Lane Grp Cap(c), veh/h	202	202	192	269	0	257	122	0	747	157	0	807
V/C Ratio(X)	0.22	0.64	0.67	0.34	0.00	0.79	0.56	0.00	0.90	0.24	0.00	0.47
Avail Cap(c_a), veh/h	450	449	428	450	0	430	159	0	747	450	0	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.9	33.5	33.6	30.0	0.0	32.3	35.7	0.0	21.4	33.6	0.0	15.8
Incr Delay (d2), s/veh	0.5	3.3	4.0	0.7	0.0	5.2	4.0	0.0	15.5	0.8	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.9	2.9	1.8	0.0	4.6	1.6	0.0	16.8	0.8	0.0	6.3
LnGrp Delay(d),s/veh	32.4	36.8	37.6	30.8	0.0	37.6	39.7	0.0	36.9	34.4	0.0	17.7
LnGrp LOS	C	D	D	C		D	D		D	C		B
Approach Vol, veh/h		301			293			737			420	
Approach Delay, s/veh		36.5			35.5			37.2			19.2	
Approach LOS		D			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.6		13.5	9.9	39.2		16.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	13.6	29.6		7.8	4.9	13.6		11.1
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	7.5		0.9

Intersection Summary		
HCM 2010 Ctrl Delay	32.5	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	965	208	99	567	85	231	393	184	111	242	119
Future Volume (veh/h)	234	965	208	99	567	85	231	393	184	111	242	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	244	1005	217	103	591	89	241	409	192	116	252	124
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	858	185	131	705	106	251	668	685	146	557	698
Arrive On Green	0.14	0.30	0.30	0.07	0.23	0.23	0.14	0.36	0.36	0.08	0.30	0.30
Sat Flow, veh/h	1774	2898	624	1774	3087	464	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	244	613	609	103	338	342	241	409	192	116	252	124
Grp Sat Flow(s),veh/h/ln	1774	1770	1753	1774	1770	1781	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	13.0	28.2	28.2	5.4	17.4	17.5	12.9	17.2	7.5	6.1	10.4	4.5
Cycle Q Clear(g_c), s	13.0	28.2	28.2	5.4	17.4	17.5	12.9	17.2	7.5	6.1	10.4	4.5
Prop In Lane	1.00		0.36	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	524	519	131	404	407	251	668	685	146	557	698
V/C Ratio(X)	0.97	1.17	1.17	0.78	0.84	0.84	0.96	0.61	0.28	0.79	0.45	0.18
Avail Cap(c_a), veh/h	251	524	519	251	492	495	251	668	685	251	557	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	33.5	33.5	43.4	35.1	35.1	40.6	25.1	17.5	42.9	27.1	16.2
Incr Delay (d2), s/veh	48.4	95.1	97.0	9.8	10.2	10.4	45.2	4.2	1.0	9.3	2.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	27.5	27.5	3.0	9.6	9.7	9.5	9.6	3.5	3.4	5.8	2.1
LnGrp Delay(d),s/veh	89.1	128.6	130.5	53.2	45.3	45.5	85.8	29.3	18.5	52.2	29.7	16.7
LnGrp LOS	F	F	F	D	D	D	F	C	B	D	C	B
Approach Vol, veh/h		1466			783			842			492	
Approach Delay, s/veh		122.8			46.4			43.0			31.7	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	38.7	11.5	32.7	18.0	33.0	18.0	26.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	9.1	19.2	7.4	30.2	14.9	12.4	15.0	19.5
Green Ext Time (p_c), s	0.1	3.6	0.1	0.0	0.0	4.8	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	74.9
HCM 2010 LOS	E

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) With Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	359	160	221	729	58	127	476	112	62	660	313
Future Volume (veh/h)	168	359	160	221	729	58	127	476	112	62	660	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	179	382	170	235	776	62	135	506	119	66	702	333
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	877	392	262	914	73	168	1220	780	111	1105	685
Arrive On Green	0.12	0.25	0.25	0.15	0.28	0.28	0.09	0.34	0.34	0.06	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3320	265	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	179	382	170	235	413	425	135	506	119	66	702	333
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1816	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.0	8.3	8.3	11.9	20.2	20.2	6.8	10.0	3.8	3.3	15.5	13.8
Cycle Q Clear(g_c), s	9.0	8.3	8.3	11.9	20.2	20.2	6.8	10.0	3.8	3.3	15.5	13.8
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	877	392	262	487	500	168	1220	780	111	1105	685
V/C Ratio(X)	0.84	0.44	0.43	0.90	0.85	0.85	0.80	0.41	0.15	0.60	0.64	0.49
Avail Cap(c_a), veh/h	262	1028	460	262	514	527	262	1220	780	262	1105	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	28.9	28.9	38.2	31.3	31.3	40.5	22.9	12.7	41.7	26.9	18.6
Incr Delay (d2), s/veh	17.5	0.3	0.8	30.0	12.2	12.0	9.5	1.0	0.4	5.1	2.8	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	4.1	3.7	8.0	11.5	11.8	3.8	5.0	1.7	1.8	8.0	6.5
LnGrp Delay(d),s/veh	56.8	29.3	29.7	68.2	43.5	43.3	50.0	23.9	13.1	46.7	29.7	21.0
LnGrp LOS	E	C	C	E	D	D	D	C	B	D	C	C
Approach Vol, veh/h		731			1073			760			1101	
Approach Delay, s/veh		36.1			48.8			26.8			28.1	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	36.0	18.0	27.1	13.1	33.0	15.5	29.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	5.3	12.0	13.9	10.3	8.8	17.5	11.0	22.2
Green Ext Time (p_c), s	0.1	8.6	0.0	7.8	0.1	6.6	0.1	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	705	0	0	1041
Future Vol, veh/h	0	9	705	0	0	1041
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	750	0	0	1107

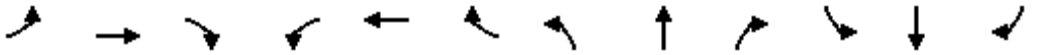
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1304	375	0	0	750	0
Stage 1	750	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	152	623	-	-	855	-
Stage 1	427	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	152	623	-	-	855	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	623	855	-
HCM Lane V/C Ratio	-	-	0.015	-	-
HCM Control Delay (s)	-	-	10.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

HCM 2010 Signalized Intersection Summary
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2035) With Project Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	60	132	60	79	9	109	672	98	16	1012	41
Future Volume (veh/h)	49	60	132	60	79	9	109	672	98	16	1012	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	62	136	62	81	9	112	693	101	16	1043	42
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	85	187	125	319	271	159	1689	756	48	1466	656
Arrive On Green	0.06	0.16	0.16	0.07	0.17	0.17	0.09	0.48	0.48	0.03	0.41	0.41
Sat Flow, veh/h	1774	520	1141	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	51	0	198	62	81	9	112	693	101	16	1043	42
Grp Sat Flow(s),veh/h/ln	1774	0	1661	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.9	0.0	7.8	2.3	2.6	0.3	4.2	8.8	2.5	0.6	16.8	1.1
Cycle Q Clear(g_c), s	1.9	0.0	7.8	2.3	2.6	0.3	4.2	8.8	2.5	0.6	16.8	1.1
Prop In Lane	1.00		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	0	272	125	319	271	159	1689	756	48	1466	656
V/C Ratio(X)	0.45	0.00	0.73	0.49	0.25	0.03	0.70	0.41	0.13	0.34	0.71	0.06
Avail Cap(c_a), veh/h	348	0	640	348	717	610	348	1689	756	348	1466	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	27.3	30.8	24.7	23.8	30.4	11.7	10.0	32.9	16.7	12.1
Incr Delay (d2), s/veh	2.8	0.0	3.7	3.0	0.4	0.0	5.6	0.7	0.4	4.1	3.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	3.9	1.2	1.4	0.1	2.3	4.4	1.1	0.4	8.7	0.5
LnGrp Delay(d),s/veh	33.9	0.0	31.0	33.8	25.1	23.8	36.0	12.4	10.4	37.0	19.7	12.3
LnGrp LOS	C		C	C	C	C	D	B	B	D	B	B
Approach Vol, veh/h		249			152			906			1101	
Approach Delay, s/veh		31.6			28.6			15.1			19.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	37.3	9.4	15.8	10.7	33.0	8.9	16.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	2.6	10.8	4.3	9.8	6.2	18.8	3.9	4.6
Green Ext Time (p_c), s	0.0	11.5	0.1	1.5	0.1	7.2	0.1	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	302	4	190	307	688	0	0	861	346
Future Volume (veh/h)	0	0	0	302	4	190	307	688	0	0	861	346
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				315	4	198	320	717	0	0	897	360
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				391	5	353	360	2376	0	0	1026	410
Arrive On Green				0.22	0.22	0.22	0.20	0.67	0.00	0.00	0.42	0.42
Sat Flow, veh/h				1753	22	1583	1774	3632	0	0	2565	986
Grp Volume(v), veh/h				319	0	198	320	717	0	0	641	616
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1689
Q Serve(g_s), s				14.5	0.0	9.4	14.9	7.1	0.0	0.0	28.2	28.6
Cycle Q Clear(g_c), s				14.5	0.0	9.4	14.9	7.1	0.0	0.0	28.2	28.6
Prop In Lane				0.99		1.00	1.00		0.00	0.00		0.58
Lane Grp Cap(c), veh/h				396	0	353	360	2376	0	0	735	701
V/C Ratio(X)				0.81	0.00	0.56	0.89	0.30	0.00	0.00	0.87	0.88
Avail Cap(c_a), veh/h				708	0	631	436	2376	0	0	735	701
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	29.4	32.9	5.8	0.0	0.0	22.8	22.9
Incr Delay (d2), s/veh				3.9	0.0	1.4	17.2	0.3	0.0	0.0	13.5	14.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.5	0.0	4.3	9.0	3.5	0.0	0.0	16.5	16.0
LnGrp Delay(d),s/veh				35.2	0.0	30.8	50.1	6.1	0.0	0.0	36.3	37.6
LnGrp LOS				D		C	D	A			D	D
Approach Vol, veh/h					517			1037			1257	
Approach Delay, s/veh					33.5			19.7			36.9	
Approach LOS					C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			21.8	39.8		23.5
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		9.1			16.9	30.6		16.5
Green Ext Time (p_c), s		21.9			0.4	1.0		2.5

Intersection Summary		
HCM 2010 Ctrl Delay		29.9
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	4	526	0	0	0	0	700	155	177	991	0
Future Volume (veh/h)	287	4	526	0	0	0	0	700	155	177	991	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	296	0	537				0	714	158	181	1011	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1061	0	473				0	1847	404	220	2162	0
Arrive On Green	0.30	0.00	0.30				0.00	0.44	0.44	0.12	0.61	0.00
Sat Flow, veh/h	3548	0	1583				0	4345	914	1774	3632	0
Grp Volume(v), veh/h	296	0	537				0	578	294	181	1011	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1701	1774	1770	0
Q Serve(g_s), s	6.4	0.0	29.9				0.0	11.5	11.7	10.0	15.6	0.0
Cycle Q Clear(g_c), s	6.4	0.0	29.9				0.0	11.5	11.7	10.0	15.6	0.0
Prop In Lane	1.00		1.00				0.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	1061	0	473				0	1499	752	220	2162	0
V/C Ratio(X)	0.28	0.00	1.13				0.00	0.39	0.39	0.82	0.47	0.00
Avail Cap(c_a), veh/h	1061	0	473				0	1499	752	530	2162	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.8	0.0	35.0				0.0	18.8	18.8	42.7	10.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	83.6				0.0	0.2	0.3	7.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	24.0				0.0	5.4	5.5	5.3	7.8	0.0
LnGrp Delay(d),s/veh	26.9	0.0	118.7				0.0	18.9	19.1	50.3	11.3	0.0
LnGrp LOS	C		F					B	B	D	B	
Approach Vol, veh/h		833						872			1192	
Approach Delay, s/veh		86.1						19.0			17.2	
Approach LOS		F						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.9	48.7		34.4		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.9	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	12.0	13.7		31.9		17.6		
Green Ext Time (p_c), s	0.4	9.3		0.0		19.6		

Intersection Summary	
HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	173	1	0	295	0	0	0	1	0	0	0
Future Vol, veh/h	0	173	1	0	295	0	0	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	190	1	0	324	0	0	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	324	0	0	191	0	0	353	515	96	419	515	162
Stage 1	-	-	-	-	-	-	191	191	-	324	324	-
Stage 2	-	-	-	-	-	-	162	324	-	95	191	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1233	-	-	1380	-	-	577	462	942	518	462	854
Stage 1	-	-	-	-	-	-	792	741	-	662	648	-
Stage 2	-	-	-	-	-	-	824	648	-	901	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1380	-	-	577	462	942	517	462	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	577	462	-	517	462	-
Stage 1	-	-	-	-	-	-	792	741	-	662	648	-
Stage 2	-	-	-	-	-	-	824	648	-	900	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	942	1233	-	-	1380	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	222	42	3	213	5	28	0	3	4	0	57
Future Vol, veh/h	105	222	42	3	213	5	28	0	3	4	0	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	122	258	49	3	248	6	33	0	3	5	0	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	253	0	0	307	0	0	785	787	153	631	809	251
Stage 1	-	-	-	-	-	-	527	527	-	258	258	-
Stage 2	-	-	-	-	-	-	258	260	-	373	551	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1311	-	-	1252	-	-	296	323	866	379	314	787
Stage 1	-	-	-	-	-	-	503	527	-	746	694	-
Stage 2	-	-	-	-	-	-	746	692	-	621	514	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1311	-	-	1252	-	-	251	292	866	350	284	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	292	-	350	284	-
Stage 1	-	-	-	-	-	-	456	478	-	677	692	-
Stage 2	-	-	-	-	-	-	682	690	-	561	466	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0.1	20.4	10.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	270	1311	-	-	1252	-	-	350	787
HCM Lane V/C Ratio	0.134	0.093	-	-	0.003	-	-	0.013	0.084
HCM Control Delay (s)	20.4	8	-	-	7.9	-	-	15.4	10
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0	-	-	0	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	207	214	4	0	5
Future Vol, veh/h	21	207	214	4	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	246	255	5	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	553	257
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1304	-	-	-	494	782
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1304	-	-	-	483	782
Mov Cap-2 Maneuver	-	-	-	-	567	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	738	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1304	-	-	-	782
HCM Lane V/C Ratio	0.019	-	-	-	0.008
HCM Control Delay (s)	7.8	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	120	166	41	18	53
Future Vol, veh/h	88	120	166	41	18	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	133	184	46	20	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	230	0	-	0	536	207
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1338	-	-	-	505	833
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1338	-	-	-	465	833
Mov Cap-2 Maneuver	-	-	-	-	544	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1338	-	-	-	734
HCM Lane V/C Ratio	0.073	-	-	-	0.107
HCM Control Delay (s)	7.9	-	-	-	10.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	133	3	22	200	32	3	0	15	16	0	3
Future Vol, veh/h	2	133	3	22	200	32	3	0	15	16	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	155	3	26	233	37	3	0	17	19	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	270	0	0	158	0	0	465	482	156	472	465	251
Stage 1	-	-	-	-	-	-	161	161	-	302	302	-
Stage 2	-	-	-	-	-	-	304	321	-	170	163	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1293	-	-	1422	-	-	508	484	890	502	495	788
Stage 1	-	-	-	-	-	-	841	765	-	707	664	-
Stage 2	-	-	-	-	-	-	705	652	-	832	763	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1293	-	-	1422	-	-	497	472	890	483	483	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	497	472	-	483	483	-
Stage 1	-	-	-	-	-	-	839	763	-	706	649	-
Stage 2	-	-	-	-	-	-	686	638	-	814	761	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	9.7	12.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	786	1293	-	-	1422	-	-	514
HCM Lane V/C Ratio	0.027	0.002	-	-	0.018	-	-	0.043
HCM Control Delay (s)	9.7	7.8	0	-	7.6	0	-	12.3
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	164	175	4	0	6
Future Vol, veh/h	0	164	175	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	189	201	5	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	203
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	838
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	838
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	838
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	9.3
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	479	11	11	912	213	7	0	7	164	0	109
Future Volume (veh/h)	71	479	11	11	912	213	7	0	7	164	0	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	81	544	12	12	1036	242	8	0	8	186	0	124
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	1757	39	39	1132	262	311	16	276	658	0	665
Arrive On Green	0.05	0.50	0.50	0.41	0.41	0.41	0.42	0.00	0.42	0.42	0.00	0.42
Sat Flow, veh/h	1774	3541	78	12	2776	642	620	38	658	1402	0	1583
Grp Volume(v), veh/h	81	272	284	693	0	597	16	0	0	186	0	124
Grp Sat Flow(s),veh/h/ln	1774	1770	1849	1848	0	1582	1316	0	0	1402	0	1583
Q Serve(g_s), s	4.9	9.8	9.8	11.3	0.0	38.5	0.0	0.0	0.0	4.0	0.0	5.3
Cycle Q Clear(g_c), s	4.9	9.8	9.8	38.0	0.0	38.5	5.3	0.0	0.0	9.3	0.0	5.3
Prop In Lane	1.00		0.04	0.02		0.41	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	83	878	918	787	0	645	603	0	0	658	0	665
V/C Ratio(X)	0.98	0.31	0.31	0.88	0.00	0.93	0.03	0.00	0.00	0.28	0.00	0.19
Avail Cap(c_a), veh/h	83	878	918	827	0	679	603	0	0	658	0	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.0	16.1	16.1	30.0	0.0	30.2	18.3	0.0	0.0	20.7	0.0	19.6
Incr Delay (d2), s/veh	91.6	0.2	0.2	10.5	0.0	18.2	0.1	0.0	0.0	1.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.8	5.0	21.6	0.0	20.0	0.3	0.0	0.0	3.9	0.0	2.4
LnGrp Delay(d),s/veh	142.7	16.3	16.3	40.5	0.0	48.4	18.3	0.0	0.0	21.8	0.0	20.2
LnGrp LOS	F	B	B	D		D	B			C		C
Approach Vol, veh/h		637			1290			16			310	
Approach Delay, s/veh		32.3			44.2			18.3			21.2	
Approach LOS		C			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		49.5		57.7		49.5	9.5	48.2
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		45.0		46.0		45.0	5.0	46.0
Max Q Clear Time (g_c+I1), s		7.3		11.8		11.3	6.9	40.5
Green Ext Time (p_c), s		1.5		17.4		1.4	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	37.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	449	164	260	824	139	170	252	111	133	203	115
Future Volume (veh/h)	37	449	164	260	824	139	170	252	111	133	203	115
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	44	535	195	310	981	165	202	300	132	158	242	137
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	612	222	250	1004	169	235	601	511	191	555	472
Arrive On Green	0.05	0.24	0.24	0.14	0.33	0.33	0.13	0.32	0.32	0.11	0.30	0.30
Sat Flow, veh/h	1774	2545	924	1774	3033	510	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	44	371	359	310	572	574	202	300	132	158	242	137
Grp Sat Flow(s),veh/h/ln	1774	1770	1700	1774	1770	1773	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.3	19.3	19.4	13.5	30.6	30.6	10.7	12.4	5.9	8.3	10.0	6.4
Cycle Q Clear(g_c), s	2.3	19.3	19.4	13.5	30.6	30.6	10.7	12.4	5.9	8.3	10.0	6.4
Prop In Lane	1.00		0.54	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	425	409	250	586	587	235	601	511	191	555	472
V/C Ratio(X)	0.49	0.87	0.88	1.24	0.98	0.98	0.86	0.50	0.26	0.83	0.44	0.29
Avail Cap(c_a), veh/h	250	490	471	250	586	587	250	601	511	250	555	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	34.9	35.0	41.1	31.6	31.6	40.6	26.2	23.9	41.8	27.1	25.8
Incr Delay (d2), s/veh	4.1	14.4	15.5	136.5	31.1	31.5	23.9	2.9	1.2	15.8	2.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.1	10.8	16.0	20.0	20.1	6.8	6.9	2.7	4.9	5.6	3.0
LnGrp Delay(d),s/veh	48.3	49.3	50.4	177.5	62.7	63.1	64.5	29.1	25.2	57.6	29.6	27.4
LnGrp LOS	D	D	D	F	E	E	E	C	C	E	C	C
Approach Vol, veh/h		774			1456			634			537	
Approach Delay, s/veh		49.8			87.3			39.6			37.2	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	35.4	18.0	27.5	17.2	33.0	9.3	36.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	10.3	14.4	15.5	21.4	12.7	12.0	4.3	32.6
Green Ext Time (p_c), s	0.1	3.6	0.0	1.6	0.0	3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	77	34	96	86	109	46	400	94	83	529	21
Future Volume (veh/h)	0	77	34	96	86	109	46	400	94	83	529	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	96	42	120	108	136	58	500	118	104	661	26
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	207	86	315	133	168	114	610	144	159	790	31
Arrive On Green	0.00	0.09	0.09	0.18	0.18	0.18	0.06	0.42	0.42	0.09	0.44	0.44
Sat Flow, veh/h	1774	2441	1013	1774	751	945	1774	1458	344	1774	1780	70
Grp Volume(v), veh/h	0	68	70	120	0	244	58	0	618	104	0	687
Grp Sat Flow(s),veh/h/ln	1774	1770	1684	1774	0	1696	1774	0	1802	1774	0	1850
Q Serve(g_s), s	0.0	2.9	3.1	4.7	0.0	10.8	2.5	0.0	23.8	4.4	0.0	25.7
Cycle Q Clear(g_c), s	0.0	2.9	3.1	4.7	0.0	10.8	2.5	0.0	23.8	4.4	0.0	25.7
Prop In Lane	1.00		0.60	1.00		0.56	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	151	150	143	315	0	301	114	0	753	159	0	821
V/C Ratio(X)	0.00	0.45	0.49	0.38	0.00	0.81	0.51	0.00	0.82	0.66	0.00	0.84
Avail Cap(c_a), veh/h	456	455	433	456	0	436	161	0	753	456	0	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	34.1	34.2	28.4	0.0	30.9	35.4	0.0	20.2	34.5	0.0	19.3
Incr Delay (d2), s/veh	0.0	2.1	2.6	0.8	0.0	7.3	3.5	0.0	9.7	4.5	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	1.5	2.3	0.0	5.7	1.3	0.0	13.7	2.4	0.0	15.2
LnGrp Delay(d),s/veh	0.0	36.2	36.7	29.2	0.0	38.3	38.9	0.0	29.9	39.0	0.0	29.2
LnGrp LOS		D	D	C		D	D		C	D		C
Approach Vol, veh/h		138			364			676			791	
Approach Delay, s/veh		36.5			35.3			30.7			30.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.2		11.2	9.5	39.2		18.4
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	6.4	25.8		5.1	4.5	27.7		12.8
Green Ext Time (p_c), s	0.2	0.0		0.6	0.0	4.5		1.1

Intersection Summary		
HCM 2010 Ctrl Delay	31.9	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	404	167	40	462	59	172	369	124	102	398	152
Future Volume (veh/h)	100	404	167	40	462	59	172	369	124	102	398	152
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	112	454	188	45	519	66	193	415	139	115	447	171
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	659	271	96	766	97	230	712	691	147	625	659
Arrive On Green	0.08	0.27	0.27	0.05	0.24	0.24	0.13	0.38	0.38	0.08	0.34	0.34
Sat Flow, veh/h	1774	2449	1006	1774	3161	401	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	112	327	315	45	290	295	193	415	139	115	447	171
Grp Sat Flow(s),veh/h/ln	1774	1770	1685	1774	1770	1792	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.3	14.1	14.3	2.1	12.6	12.7	9.0	15.0	4.6	5.4	17.8	6.0
Cycle Q Clear(g_c), s	5.3	14.1	14.3	2.1	12.6	12.7	9.0	15.0	4.6	5.4	17.8	6.0
Prop In Lane	1.00		0.60	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	476	454	96	429	434	230	712	691	147	625	659
V/C Ratio(X)	0.78	0.69	0.69	0.47	0.68	0.68	0.84	0.58	0.20	0.78	0.72	0.26
Avail Cap(c_a), veh/h	282	552	525	282	552	559	282	712	691	282	625	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	27.8	27.9	39.0	29.2	29.2	36.1	20.9	14.8	38.2	24.7	16.2
Incr Delay (d2), s/veh	8.9	2.9	3.3	3.6	2.2	2.3	16.6	3.5	0.7	8.8	6.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	7.3	7.1	1.1	6.4	6.5	5.5	8.4	2.1	3.0	10.4	2.8
LnGrp Delay(d),s/veh	47.3	30.8	31.2	42.6	31.4	31.5	52.7	24.3	15.5	47.1	31.6	17.2
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		754			630			747			733	
Approach Delay, s/veh		33.4			32.2			30.0			30.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	37.0	9.1	27.4	15.5	33.0	11.4	25.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	7.4	17.0	4.1	16.3	11.0	19.8	7.3	14.7
Green Ext Time (p_c), s	0.1	5.1	0.0	5.4	0.1	4.2	0.1	5.9

Intersection Summary		
HCM 2010 Ctrl Delay		31.6
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) With-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	850	181	137	508	60	182	708	195	79	549	216
Future Volume (veh/h)	267	850	181	137	508	60	182	708	195	79	549	216
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	867	185	140	518	61	186	722	199	81	560	220
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1007	450	173	760	89	220	1279	726	116	1072	707
Arrive On Green	0.14	0.28	0.28	0.10	0.24	0.24	0.12	0.36	0.36	0.07	0.30	0.30
Sat Flow, veh/h	1774	3539	1583	1774	3192	375	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	272	867	185	140	286	293	186	722	199	81	560	220
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1797	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.5	21.8	8.9	7.3	13.8	13.9	9.7	15.4	7.3	4.2	12.3	8.4
Cycle Q Clear(g_c), s	13.5	21.8	8.9	7.3	13.8	13.9	9.7	15.4	7.3	4.2	12.3	8.4
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1007	450	173	422	428	220	1279	726	116	1072	707
V/C Ratio(X)	1.07	0.86	0.41	0.81	0.68	0.68	0.85	0.56	0.27	0.70	0.52	0.31
Avail Cap(c_a), veh/h	255	1007	450	255	499	506	255	1279	726	255	1072	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	31.9	27.3	41.6	32.6	32.6	40.3	24.1	15.8	43.0	27.1	16.7
Incr Delay (d2), s/veh	75.6	7.7	0.6	11.6	3.0	3.0	20.2	1.8	0.9	7.3	1.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	11.7	3.9	4.1	7.1	7.3	6.0	7.8	3.4	2.3	6.3	3.9
LnGrp Delay(d),s/veh	115.9	39.6	27.9	53.2	35.5	35.6	60.5	25.9	16.7	50.4	29.0	17.9
LnGrp LOS	F	D	C	D	D	D	E	C	B	D	C	B
Approach Vol, veh/h		1324			719			1107			861	
Approach Delay, s/veh		53.7			39.0			30.1			28.1	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	38.5	13.7	31.3	16.1	33.0	18.0	26.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	6.2	17.4	9.3	23.8	11.7	14.3	15.5	15.9
Green Ext Time (p_c), s	0.1	6.9	0.1	2.1	0.1	8.2	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	39.0
HCM 2010 LOS	D

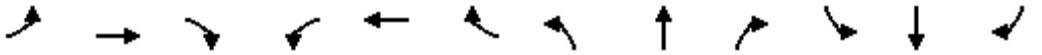
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	38	1047	0	0	866
Future Vol, veh/h	0	38	1047	0	0	866
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	1068	0	0	884

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1421	534	0	0	1068	0
Stage 1	1068	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	155	491	-	-	648	-
Stage 1	285	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	155	491	-	-	648	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	285	-	-	-	-	-
Stage 2	646	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	491	648	-
HCM Lane V/C Ratio	-	-	0.079	-	-
HCM Control Delay (s)	-	-	13	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	160	259	258	112	26	162	981	261	47	806	44
Future Volume (veh/h)	91	160	259	258	112	26	162	981	261	47	806	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	92	162	262	261	113	26	164	991	264	47	814	44
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	173	279	247	637	542	197	1251	560	92	1042	466
Arrive On Green	0.07	0.27	0.27	0.14	0.34	0.34	0.11	0.35	0.35	0.05	0.29	0.29
Sat Flow, veh/h	1774	642	1038	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	92	0	424	261	113	26	164	991	264	47	814	44
Grp Sat Flow(s),veh/h/ln	1774	0	1680	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.9	0.0	23.9	13.5	4.1	1.1	8.8	24.3	12.5	2.5	20.4	2.0
Cycle Q Clear(g_c), s	4.9	0.0	23.9	13.5	4.1	1.1	8.8	24.3	12.5	2.5	20.4	2.0
Prop In Lane	1.00		0.62	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	0	452	247	637	542	197	1251	560	92	1042	466
V/C Ratio(X)	0.78	0.00	0.94	1.06	0.18	0.05	0.83	0.79	0.47	0.51	0.78	0.09
Avail Cap(c_a), veh/h	247	0	460	247	637	542	247	1251	560	247	1042	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	0.0	34.6	41.7	22.3	21.3	42.2	28.1	24.3	44.7	31.3	24.8
Incr Delay (d2), s/veh	10.5	0.0	26.8	72.4	0.1	0.0	17.5	5.2	2.8	4.3	5.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	14.4	11.5	2.1	0.5	5.2	12.7	5.9	1.3	10.8	0.9
LnGrp Delay(d),s/veh	55.0	0.0	61.4	114.1	22.4	21.3	59.6	33.3	27.1	49.0	37.1	25.2
LnGrp LOS	D		E	F	C	C	E	C	C	D	D	C
Approach Vol, veh/h		516			400			1419			905	
Approach Delay, s/veh		60.3			82.2			35.2			37.2	
Approach LOS		E			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	38.7	18.0	30.6	15.2	33.0	10.9	37.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	4.5	26.3	15.5	25.9	10.8	22.4	6.9	6.1
Green Ext Time (p_c), s	0.0	1.9	0.0	0.2	0.1	5.1	0.1	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	242	4	245	377	1167	0	0	960	367
Future Volume (veh/h)	0	0	0	242	4	245	377	1167	0	0	960	367
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				252	4	255	393	1216	0	0	1000	382
Adj No. of Lanes				0	1	1	1	2	0	0	2	0
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				358	6	324	429	2431	0	0	984	372
Arrive On Green				0.20	0.20	0.20	0.24	0.69	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1748	28	1583	1774	3632	0	0	2608	950
Grp Volume(v), veh/h				256	0	255	393	1216	0	0	700	682
Grp Sat Flow(s),veh/h/ln				1775	0	1583	1774	1770	0	0	1770	1695
Q Serve(g_s), s				11.1	0.0	12.7	17.9	13.6	0.0	0.0	32.5	32.5
Cycle Q Clear(g_c), s				11.1	0.0	12.7	17.9	13.6	0.0	0.0	32.5	32.5
Prop In Lane				0.98		1.00	1.00		0.00	0.00		0.56
Lane Grp Cap(c), veh/h				364	0	324	429	2431	0	0	692	663
V/C Ratio(X)				0.70	0.00	0.79	0.92	0.50	0.00	0.00	1.01	1.03
Avail Cap(c_a), veh/h				724	0	646	446	2431	0	0	692	663
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.7	0.0	31.3	30.7	6.2	0.0	0.0	25.3	25.3
Incr Delay (d2), s/veh				2.5	0.0	4.2	23.3	0.7	0.0	0.0	37.1	42.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.7	0.0	5.9	11.5	6.8	0.0	0.0	22.9	22.9
LnGrp Delay(d),s/veh				33.2	0.0	35.5	54.0	6.9	0.0	0.0	62.5	67.6
LnGrp LOS				C		D	D	A			F	F
Approach Vol, veh/h					511			1609			1382	
Approach Delay, s/veh					34.4			18.4			65.0	
Approach LOS					C			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		61.6			24.6	37.0		21.5
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5
Max Green Setting (Gmax), s		57.1			20.9	31.7		33.9
Max Q Clear Time (g_c+I1), s		15.6			19.9	34.5		14.7
Green Ext Time (p_c), s		29.5			0.1	0.0		2.3

Intersection Summary		
HCM 2010 Ctrl Delay		39.1
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	562	3	354	0	0	0	0	992	322	262	946	0
Future Volume (veh/h)	562	3	354	0	0	0	0	992	322	262	946	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	587	0	369				0	1033	335	273	985	0
Adj No. of Lanes	2	0	1				0	3	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	946	0	422				0	1577	511	315	2262	0
Arrive On Green	0.27	0.00	0.27				0.00	0.41	0.41	0.18	0.64	0.00
Sat Flow, veh/h	3548	0	1583				0	3970	1233	1774	3632	0
Grp Volume(v), veh/h	587	0	369				0	921	447	273	985	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	1645	1774	1770	0
Q Serve(g_s), s	13.9	0.0	21.3				0.0	20.9	20.9	14.3	13.3	0.0
Cycle Q Clear(g_c), s	13.9	0.0	21.3				0.0	20.9	20.9	14.3	13.3	0.0
Prop In Lane	1.00		1.00				0.00		0.75	1.00		0.00
Lane Grp Cap(c), veh/h	946	0	422				0	1406	682	315	2262	0
V/C Ratio(X)	0.62	0.00	0.87				0.00	0.65	0.66	0.87	0.44	0.00
Avail Cap(c_a), veh/h	1110	0	495				0	1406	682	555	2262	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	33.5				0.0	22.5	22.5	38.2	8.6	0.0
Incr Delay (d2), s/veh	0.8	0.0	14.2				0.0	1.1	2.3	7.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	11.0				0.0	9.9	9.9	7.6	6.6	0.0
LnGrp Delay(d),s/veh	31.6	0.0	47.7				0.0	23.6	24.8	45.5	9.2	0.0
LnGrp LOS	C		D					C	C	D	A	
Approach Vol, veh/h		956						1368			1258	
Approach Delay, s/veh		37.8						24.0			17.1	
Approach LOS		D						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	21.5	44.1		30.0		65.6		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	29.3	26.7		29.9		61.1		
Max Q Clear Time (g_c+I1), s	16.3	22.9		23.3		15.3		
Green Ext Time (p_c), s	0.7	3.5		2.2		27.4		

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	472	22	0	710	0	0	0	22	0	0	0
Future Vol, veh/h	0	472	22	0	710	0	0	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	502	23	0	755	0	0	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	1269	1269	263	956	1281	755
Stage 1	-	-	-	-	-	-	514	514	-	755	755	-
Stage 2	-	-	-	-	-	-	755	755	-	201	526	-
Critical Hdwy	-	-	-	-	-	-	6.78	6.53	7.13	6.78	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	7.33	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.73	5.53	-
Follow-up Hdwy	-	-	-	-	-	-	3.669	4.019	3.919	3.669	4.019	3.319
Pot Cap-1 Maneuver	0	-	-	0	-	0	160	168	627	254	165	408
Stage 1	0	-	-	0	-	0	443	534	-	389	416	-
Stage 2	0	-	-	0	-	0	389	416	-	745	528	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	160	168	627	245	165	408
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	168	-	245	165	-
Stage 1	-	-	-	-	-	-	443	534	-	389	416	-
Stage 2	-	-	-	-	-	-	389	416	-	717	528	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	11	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	627	-	-	-	-
HCM Lane V/C Ratio	0.037	-	-	-	-
HCM Control Delay (s)	11	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	237.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	278	375	156	28	299	35	164	2	24	37	0	239
Future Vol, veh/h	278	375	156	28	299	35	164	2	24	37	0	239
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	0	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	316	426	177	32	340	40	186	2	27	42	0	272

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	603	0	0	1570	1590	302	1269	1658	360
Stage 1	-	-	-	-	-	-	1147	1147	-	423	423	-
Stage 2	-	-	-	-	-	-	423	443	-	846	1235	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1177	-	-	973	-	-	~ 82	107	695	135	97	684
Stage 1	-	-	-	-	-	-	212	273	-	608	587	-
Stage 2	-	-	-	-	-	-	608	575	-	324	248	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1177	-	-	973	-	-	~ 38	76	695	98	69	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 38	76	-	98	69	-
Stage 1	-	-	-	-	-	-	~ 155	200	-	445	568	-
Stage 2	-	-	-	-	-	-	355	556	-	225	181	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0.7	$ 1997.3	20.8
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	43	1177	-	-	973	-	-	98	684
HCM Lane V/C Ratio	5.021	0.268	-	-	0.033	-	-	0.429	0.397
HCM Control Delay (s)	$ 1997.3	9.2	-	-	8.8	-	-	66.9	13.7
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	24.9	1.1	-	-	0.1	-	-	1.8	1.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	426	352	7	10	10
Future Vol, veh/h	11	426	352	7	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	468	387	8	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	395	0	-	0	883	391
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	492	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1164	-	-	-	316	658
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1164	-	-	-	312	658
Mov Cap-2 Maneuver	-	-	-	-	435	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1164	-	-	-	524
HCM Lane V/C Ratio	0.01	-	-	-	0.042
HCM Control Delay (s)	8.1	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	209	224	140	79	99	221
Future Vol, veh/h	209	224	140	79	99	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	230	246	154	87	109	243

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	241	0	-	0	902	197
Stage 1	-	-	-	-	197	-
Stage 2	-	-	-	-	705	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1326	-	-	-	308	844
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	490	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1326	-	-	-	246	844
Mov Cap-2 Maneuver	-	-	-	-	331	-
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	392	-

Approach	EB	WB	SB
HCM Control Delay, s	4	0	20.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1326	-	-	-	570
HCM Lane V/C Ratio	0.173	-	-	-	0.617
HCM Control Delay (s)	8.3	-	-	-	20.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.6	-	-	-	4.2

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	13	287	24	88	176	105	24	0	93	84	0	19
Future Vol, veh/h	13	287	24	88	176	105	24	0	93	84	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	309	26	95	189	113	26	0	100	90	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	302	0	0	334	0	0	794	840	322	834	797	246
Stage 1	-	-	-	-	-	-	349	349	-	435	435	-
Stage 2	-	-	-	-	-	-	445	491	-	399	362	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1259	-	-	1225	-	-	306	302	719	288	319	793
Stage 1	-	-	-	-	-	-	667	633	-	600	580	-
Stage 2	-	-	-	-	-	-	592	548	-	627	625	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1259	-	-	1225	-	-	274	269	719	227	285	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	274	269	-	227	285	-
Stage 1	-	-	-	-	-	-	658	624	-	592	525	-
Stage 2	-	-	-	-	-	-	522	496	-	532	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2	13.7	28.6
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	539	1259	-	-	1225	-	-	261
HCM Lane V/C Ratio	0.233	0.011	-	-	0.077	-	-	0.424
HCM Control Delay (s)	13.7	7.9	0	-	8.2	0	-	28.6
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.9	0	-	-	0.3	-	-	2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	464	240	8	0	9
Future Vol, veh/h	0	464	240	8	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	494	255	9	0	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	260
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	779
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	779
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	779
HCM Lane V/C Ratio	-	-	-	0.012
HCM Control Delay (s)	-	-	-	9.7
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	979	44	43	606	58	47	0	47	85	0	62
Future Volume (veh/h)	120	979	44	43	606	58	47	0	47	85	0	62
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	138	1125	51	49	697	67	54	0	54	98	0	71
Adj No. of Lanes	1	2	0	0	2	0	0	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	1732	79	82	1093	108	329	16	295	626	0	657
Arrive On Green	0.05	0.50	0.50	0.41	0.41	0.41	0.41	0.00	0.41	0.41	0.00	0.41
Sat Flow, veh/h	1774	3448	156	108	2635	260	673	38	711	1345	0	1583
Grp Volume(v), veh/h	138	577	599	388	0	425	108	0	0	98	0	71
Grp Sat Flow(s),veh/h/ln	1774	1770	1835	1355	0	1649	1423	0	0	1345	0	1583
Q Serve(g_s), s	5.0	26.1	26.2	9.0	0.0	22.0	2.8	0.0	0.0	0.0	0.0	3.0
Cycle Q Clear(g_c), s	5.0	26.1	26.2	25.7	0.0	22.0	5.8	0.0	0.0	4.8	0.0	3.0
Prop In Lane	1.00		0.09	0.13		0.16	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	82	889	922	599	0	684	640	0	0	626	0	657
V/C Ratio(X)	1.69	0.65	0.65	0.65	0.00	0.62	0.17	0.00	0.00	0.16	0.00	0.11
Avail Cap(c_a), veh/h	82	889	922	599	0	684	640	0	0	626	0	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.8	19.9	19.9	24.9	0.0	25.0	20.2	0.0	0.0	20.0	0.0	19.5
Incr Delay (d2), s/veh	356.5	3.7	3.5	5.4	0.0	4.2	0.6	0.0	0.0	0.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	13.6	14.0	10.4	0.0	10.8	2.2	0.0	0.0	1.9	0.0	1.4
LnGrp Delay(d),s/veh	408.3	23.6	23.5	30.2	0.0	29.2	20.8	0.0	0.0	20.5	0.0	19.8
LnGrp LOS	F	C	C	C		C	C			C		B
Approach Vol, veh/h		1314			813			108			169	
Approach Delay, s/veh		64.0			29.7			20.8			20.2	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		59.0		49.5	9.5	49.5		49.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		45.0		45.0	5.0	45.0		45.0
Max Q Clear Time (g_c+I1), s		28.2		6.8	7.0	27.7		7.8
Green Ext Time (p_c), s		12.0		1.5	0.0	12.3		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	836	120	94	483	83	121	264	252	78	195	90
Future Volume (veh/h)	122	836	120	94	483	83	121	264	252	78	195	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	133	909	130	102	525	90	132	287	274	85	212	98
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	940	134	131	854	146	166	649	552	124	606	515
Arrive On Green	0.09	0.30	0.30	0.07	0.28	0.28	0.09	0.35	0.35	0.07	0.33	0.33
Sat Flow, veh/h	1774	3109	445	1774	3025	517	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	133	517	522	102	306	309	132	287	274	85	212	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1784	1774	1770	1772	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	6.4	25.3	25.3	5.0	13.2	13.3	6.4	10.4	11.9	4.1	7.6	3.9
Cycle Q Clear(g_c), s	6.4	25.3	25.3	5.0	13.2	13.3	6.4	10.4	11.9	4.1	7.6	3.9
Prop In Lane	1.00		0.25	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	535	539	131	499	500	166	649	552	124	606	515
V/C Ratio(X)	0.80	0.97	0.97	0.78	0.61	0.62	0.80	0.44	0.50	0.69	0.35	0.19
Avail Cap(c_a), veh/h	273	535	539	273	535	536	273	649	552	273	606	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	30.1	30.1	39.9	27.3	27.3	38.9	22.0	22.5	39.8	22.5	21.3
Incr Delay (d2), s/veh	8.4	30.5	30.4	9.5	1.9	1.9	8.5	2.2	3.2	6.6	1.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	16.9	17.0	2.8	6.6	6.8	3.5	5.7	5.7	2.2	4.2	1.8
LnGrp Delay(d),s/veh	47.3	60.7	60.6	49.4	29.2	29.3	47.4	24.2	25.7	46.4	24.1	22.1
LnGrp LOS	D	E	E	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1172			717			693			395	
Approach Delay, s/veh		59.1			32.1			29.2			28.4	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	35.1	11.0	31.0	12.7	33.0	12.7	29.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	10.1	13.9	7.0	27.3	8.4	9.6	8.4	15.3
Green Ext Time (p_c), s	0.1	3.8	0.1	0.0	0.1	4.2	0.1	7.5

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	194	86	86	101	107	77	480	156	36	339	43
Future Volume (veh/h)	66	194	86	86	101	107	77	480	156	36	339	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	69	204	91	91	106	113	81	505	164	38	357	45
Adj No. of Lanes	1	2	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	304	131	283	132	140	128	552	179	151	687	87
Arrive On Green	0.13	0.13	0.13	0.16	0.16	0.16	0.07	0.41	0.41	0.09	0.42	0.42
Sat Flow, veh/h	1774	2411	1038	1774	826	881	1774	1348	438	1774	1622	204
Grp Volume(v), veh/h	69	148	147	91	0	219	81	0	669	38	0	402
Grp Sat Flow(s),veh/h/ln	1774	1770	1680	1774	0	1707	1774	0	1786	1774	0	1827
Q Serve(g_s), s	2.9	6.5	6.9	3.7	0.0	10.1	3.6	0.0	29.0	1.6	0.0	13.3
Cycle Q Clear(g_c), s	2.9	6.5	6.9	3.7	0.0	10.1	3.6	0.0	29.0	1.6	0.0	13.3
Prop In Lane	1.00		0.62	1.00		0.52	1.00		0.25	1.00		0.11
Lane Grp Cap(c), veh/h	223	223	211	283	0	272	128	0	732	151	0	773
V/C Ratio(X)	0.31	0.66	0.70	0.32	0.00	0.80	0.64	0.00	0.91	0.25	0.00	0.52
Avail Cap(c_a), veh/h	435	434	412	435	0	419	154	0	732	435	0	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.6	34.2	34.3	30.5	0.0	33.2	37.0	0.0	22.8	35.0	0.0	17.5
Incr Delay (d2), s/veh	0.8	3.4	4.1	0.7	0.0	6.4	6.1	0.0	17.9	0.9	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.4	3.4	1.9	0.0	5.3	2.0	0.0	17.8	0.8	0.0	7.2
LnGrp Delay(d),s/veh	33.4	37.5	38.4	31.2	0.0	39.6	43.1	0.0	40.8	35.9	0.0	20.0
LnGrp LOS	C	D	D	C		D	D		D	D		B
Approach Vol, veh/h		364			310			750			440	
Approach Delay, s/veh		37.1			37.1			41.0			21.4	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	38.1		14.8	10.4	39.2		17.6
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	20.1	21.7		20.1	7.1	34.7		20.1
Max Q Clear Time (g_c+I1), s	12.6	31.0		8.9	5.6	15.3		12.1
Green Ext Time (p_c), s	0.0	0.0		1.4	0.0	7.4		0.9

Intersection Summary		
HCM 2010 Ctrl Delay	35.0	
HCM 2010 LOS	C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	965	208	99	567	85	231	405	184	111	256	119
Future Volume (veh/h)	234	965	208	99	567	85	231	405	184	111	256	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	244	1005	217	103	591	89	241	422	192	116	267	124
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	858	185	131	705	106	251	668	685	146	557	698
Arrive On Green	0.14	0.30	0.30	0.07	0.23	0.23	0.14	0.36	0.36	0.08	0.30	0.30
Sat Flow, veh/h	1774	2898	624	1774	3087	464	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	244	613	609	103	338	342	241	422	192	116	267	124
Grp Sat Flow(s),veh/h/ln	1774	1770	1753	1774	1770	1781	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	13.0	28.2	28.2	5.4	17.4	17.5	12.9	17.9	7.5	6.1	11.2	4.5
Cycle Q Clear(g_c), s	13.0	28.2	28.2	5.4	17.4	17.5	12.9	17.9	7.5	6.1	11.2	4.5
Prop In Lane	1.00		0.36	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	524	519	131	404	407	251	668	685	146	557	698
V/C Ratio(X)	0.97	1.17	1.17	0.78	0.84	0.84	0.96	0.63	0.28	0.79	0.48	0.18
Avail Cap(c_a), veh/h	251	524	519	251	492	495	251	668	685	251	557	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	33.5	33.5	43.4	35.1	35.1	40.6	25.3	17.5	42.9	27.3	16.2
Incr Delay (d2), s/veh	48.4	95.1	97.0	9.8	10.2	10.4	45.2	4.5	1.0	9.3	2.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	27.5	27.5	3.0	9.6	9.7	9.5	10.0	3.5	3.4	6.2	2.1
LnGrp Delay(d),s/veh	89.1	128.6	130.5	53.2	45.3	45.5	85.8	29.8	18.5	52.2	30.2	16.7
LnGrp LOS	F	F	F	D	D	D	F	C	B	D	C	B
Approach Vol, veh/h		1466			783			855			507	
Approach Delay, s/veh		122.8			46.4			43.1			32.0	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	38.7	11.5	32.7	18.0	33.0	18.0	26.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	28.5	13.5	26.5	13.5	28.5	13.5	26.5
Max Q Clear Time (g_c+I1), s	9.1	19.9	7.4	30.2	14.9	13.2	15.0	19.5
Green Ext Time (p_c), s	0.1	3.5	0.1	0.0	0.0	4.9	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	74.6
HCM 2010 LOS	E

Synchro Queue Reports

Existing

Queues
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	141	303	134	171	620	117	461	98	55	591	280
v/c Ratio	0.62	0.37	0.28	0.70	0.73	0.54	0.37	0.11	0.31	0.50	0.31
Control Delay	51.5	30.6	7.1	55.2	36.7	48.9	24.5	5.1	45.6	28.2	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	30.6	7.1	55.2	36.7	48.9	24.5	5.1	45.6	28.2	7.8
Queue Length 50th (ft)	79	79	0	97	175	66	106	6	31	151	38
Queue Length 95th (ft)	149	120	44	#201	244	127	170	34	70	226	98
Internal Link Dist (ft)		1991			1226		695			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	278	1091	580	278	1085	278	1258	927	278	1174	929
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.28	0.23	0.62	0.57	0.42	0.37	0.11	0.20	0.50	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday AM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	178	59	77	19	102	621	59	19	837	42
v/c Ratio	0.20	0.56	0.28	0.27	0.06	0.41	0.30	0.06	0.10	0.52	0.05
Control Delay	35.4	23.7	35.5	31.2	0.3	36.0	10.6	0.5	35.6	19.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	23.7	35.5	31.2	0.3	36.0	10.6	0.5	35.6	19.2	0.1
Queue Length 50th (ft)	17	38	25	32	0	44	68	0	8	156	0
Queue Length 95th (ft)	50	103	66	74	0	98	175	4	31	277	0
Internal Link Dist (ft)		2085		364			354			592	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	351	709	351	725	686	351	2092	983	351	1615	784
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.25	0.17	0.11	0.03	0.29	0.30	0.06	0.05	0.52	0.05

Intersection Summary

Queues
4: Heacock St & SR 60 WB Ramp

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	272	157	278	631	1025
v/c Ratio	0.70	0.39	0.77	0.26	0.71
Control Delay	40.7	18.7	46.8	6.5	24.7
Queue Delay	0.0	0.0	0.2	0.5	0.4
Total Delay	40.7	18.7	47.0	7.0	25.0
Queue Length 50th (ft)	134	39	137	58	220
Queue Length 95th (ft)	213	90	#246	114	#394
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	712	676	437	2390	1446
Starvation Cap Reductn	0	0	12	1270	101
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.23	0.65	0.56	0.76

Intersection Summary

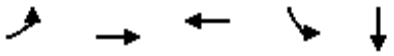
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Heacock St & SR 60 EB Ramp

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	109	108	379	812	153	847
v/c Ratio	0.31	0.31	0.81	0.33	0.59	0.35
Control Delay	31.1	31.0	31.0	15.3	46.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	31.1	31.0	31.0	15.3	46.0	8.0
Queue Length 50th (ft)	54	53	108	90	81	87
Queue Length 95th (ft)	101	100	211	168	150	172
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	567	570	651	2466	597	2442
Starvation Cap Reductn	0	0	0	0	0	1218
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.19	0.58	0.33	0.26	0.69

Intersection Summary



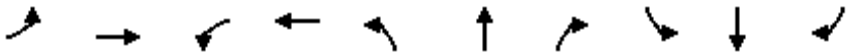
Lane Group	EBL	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	52	449	945	147	90
v/c Ratio	0.55	0.30	0.78	0.22	0.10
Control Delay	70.5	17.8	31.5	18.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	17.8	31.5	18.4	0.2
Queue Length 50th (ft)	32	90	263	53	0
Queue Length 95th (ft)	#96	119	323	111	0
Internal Link Dist (ft)		1226	1262		1473
Turn Bay Length (ft)	150			40	
Base Capacity (vph)	94	2093	1701	676	860
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.21	0.56	0.22	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

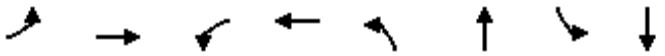
Queues
13: Indian St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	38	586	107	837	143	150	67	111	171	95
v/c Ratio	0.24	0.66	0.51	0.78	0.63	0.22	0.10	0.52	0.28	0.16
Control Delay	44.7	32.5	47.9	34.5	51.7	25.3	1.5	48.2	26.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	32.5	47.9	34.5	51.7	25.3	1.5	48.2	26.7	4.4
Queue Length 50th (ft)	22	152	60	239	80	65	0	63	77	0
Queue Length 95th (ft)	51	199	109	298	140	118	4	113	133	21
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	275	1071	275	1149	275	690	659	275	612	597
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.55	0.39	0.73	0.52	0.22	0.10	0.40	0.28	0.16

Intersection Summary

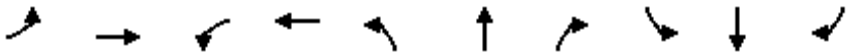


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	124	64	170	45	324	54	402
v/c Ratio	0.06	0.31	0.24	0.57	0.26	0.36	0.27	0.43
Control Delay	34.4	27.7	31.5	32.2	39.3	17.0	37.0	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	27.7	31.5	32.2	39.3	17.0	37.0	17.0
Queue Length 50th (ft)	5	22	28	62	21	102	25	135
Queue Length 95th (ft)	19	43	57	107	50	179	55	212
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	495	974	495	512	174	893	495	933
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.13	0.13	0.33	0.26	0.36	0.11	0.43

Intersection Summary

Queues
15: Indian St & Sunnymead Blvd

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	259	22	287	92	224	66	64	253	98
v/c Ratio	0.26	0.41	0.12	0.51	0.38	0.28	0.07	0.29	0.32	0.10
Control Delay	36.0	23.6	35.5	31.5	36.5	18.2	3.2	36.1	19.6	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	23.6	35.5	31.5	36.5	18.2	3.2	36.1	19.6	3.3
Queue Length 50th (ft)	24	43	10	62	40	69	0	28	82	2
Queue Length 95th (ft)	62	81	33	107	89	143	19	68	168	24
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	354	1366	354	1371	354	812	1119	354	786	1106
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.19	0.06	0.21	0.26	0.28	0.06	0.18	0.32	0.09

Intersection Summary

Queues
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	232	450	122	99	359	160	672	189	76	528	210
v/c Ratio	0.85	0.59	0.28	0.49	0.57	0.67	0.49	0.21	0.40	0.46	0.22
Control Delay	66.2	34.9	8.6	45.9	35.4	51.6	24.4	6.7	44.5	26.2	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	34.9	8.6	45.9	35.4	51.6	24.4	6.7	44.5	26.2	2.7
Queue Length 50th (ft)	126	121	3	52	94	83	146	22	40	120	0
Queue Length 95th (ft)	#292	176	47	108	137	#176	253	69	88	195	37
Internal Link Dist (ft)		1991			1226		585			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	273	1074	560	273	1066	273	1361	976	273	1155	941
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.42	0.22	0.36	0.34	0.59	0.49	0.19	0.28	0.46	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	251	83	76	30	133	976	110	24	703	44
v/c Ratio	0.28	0.67	0.37	0.18	0.07	0.52	0.55	0.13	0.13	0.50	0.06
Control Delay	40.0	30.5	40.3	28.6	0.3	42.9	18.8	4.4	39.7	23.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	40.0	30.5	40.3	28.6	0.3	42.9	19.3	4.4	39.7	23.4	0.2
Queue Length 50th (ft)	27	77	40	33	0	63	149	0	11	147	0
Queue Length 95th (ft)	70	164	92	73	0	136	355	32	39	258	0
Internal Link Dist (ft)		2085		313			354			702	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	335	682	335	693	661	335	1774	851	335	1416	702
Starvation Cap Reductn	0	0	0	0	0	0	375	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.37	0.25	0.11	0.05	0.40	0.70	0.13	0.07	0.50	0.06

Intersection Summary

Queues
4: Heacock St & SR 60 WB Ramp

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	209	160	356	1105	981
v/c Ratio	0.65	0.45	0.79	0.44	0.71
Control Delay	40.1	18.8	43.9	6.3	23.8
Queue Delay	0.0	0.0	3.2	1.3	0.2
Total Delay	40.1	18.8	47.1	7.5	24.0
Queue Length 50th (ft)	99	34	167	103	204
Queue Length 95th (ft)	166	87	#336	186	314
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	743	711	457	2497	1379
Starvation Cap Reductn	0	0	43	1099	59
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.23	0.86	0.79	0.74

Intersection Summary

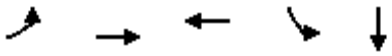
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Heacock St & SR 60 EB Ramp

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	246	249	348	1243	168	782
v/c Ratio	0.64	0.65	0.67	0.53	0.62	0.33
Control Delay	39.6	39.8	19.5	19.0	46.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	39.6	39.8	19.5	19.0	46.8	8.4
Queue Length 50th (ft)	134	136	71	168	92	88
Queue Length 95th (ft)	215	218	163	282	160	156
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	553	555	658	2351	583	2382
Starvation Cap Reductn	0	0	0	0	0	1226
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.45	0.53	0.53	0.29	0.68

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	98	702	501	75	54
v/c Ratio	1.21	0.40	0.34	0.13	0.06
Control Delay	211.7	17.6	21.8	20.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	211.7	17.6	21.8	20.5	0.1
Queue Length 50th (ft)	~83	153	118	32	0
Queue Length 95th (ft)	#183	190	154	61	0
Internal Link Dist (ft)		1226	1262		1473
Turn Bay Length (ft)	150			40	
Base Capacity (vph)	81	1777	1453	584	861
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.21	0.40	0.34	0.13	0.06

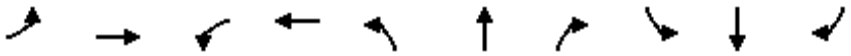
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

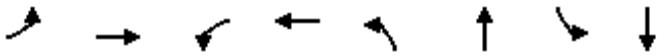
Queues
13: Indian St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) Weekday PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	95	604	50	406	66	130	133	63	86	71
v/c Ratio	0.42	0.64	0.26	0.53	0.32	0.18	0.19	0.31	0.12	0.10
Control Delay	41.7	29.4	40.7	30.0	40.9	22.6	5.5	40.9	22.2	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	29.4	40.7	30.0	40.9	22.6	5.5	40.9	22.2	1.8
Queue Length 50th (ft)	47	146	25	94	33	47	0	31	30	0
Queue Length 95th (ft)	103	222	64	152	78	107	41	75	75	11
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	324	1259	324	1260	324	724	697	324	722	684
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.48	0.15	0.32	0.20	0.18	0.19	0.19	0.12	0.10

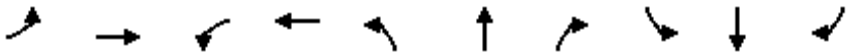
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	39	199	43	97	53	365	17	214
v/c Ratio	0.18	0.43	0.19	0.41	0.31	0.35	0.10	0.23
Control Delay	33.5	26.6	33.1	33.2	39.4	12.0	35.7	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	26.6	33.1	33.2	39.4	12.0	35.7	13.9
Queue Length 50th (ft)	17	35	19	38	24	76	8	61
Queue Length 95th (ft)	46	70	49	85	63	214	28	122
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	495	986	495	512	174	1032	495	949
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.20	0.09	0.19	0.30	0.35	0.03	0.23

Intersection Summary

Queues
15: Indian St & Sunnymead Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	160	660	46	315	95	217	77	64	138	67
v/c Ratio	0.64	0.67	0.26	0.45	0.44	0.32	0.09	0.34	0.21	0.07
Control Delay	49.2	31.3	42.7	30.3	44.3	24.1	3.9	43.2	24.3	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	31.3	42.7	30.3	44.3	24.1	3.9	43.2	24.3	3.8
Queue Length 50th (ft)	83	166	24	75	50	87	0	33	54	0
Queue Length 95th (ft)	#175	247	61	120	104	169	24	77	114	22
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	297	1152	297	1153	297	684	967	297	660	943
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.57	0.15	0.27	0.32	0.32	0.08	0.22	0.21	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	141	297	133	171	614	114	459	98	55	590	280
v/c Ratio	0.62	0.36	0.28	0.70	0.72	0.53	0.36	0.11	0.31	0.50	0.31
Control Delay	51.3	30.5	7.1	55.0	36.5	48.4	24.4	5.1	45.5	28.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	30.5	7.1	55.0	36.5	48.4	24.4	5.1	45.5	28.0	7.6
Queue Length 50th (ft)	78	77	0	96	172	63	105	6	31	149	35
Queue Length 95th (ft)	149	117	44	#201	242	124	168	34	70	226	96
Internal Link Dist (ft)		1991			1226		695			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	278	1094	581	278	1088	278	1259	928	278	1177	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.27	0.23	0.62	0.56	0.41	0.36	0.11	0.20	0.50	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	167	52	66	4	102	621	80	16	837	42
v/c Ratio	0.20	0.54	0.25	0.26	0.01	0.41	0.29	0.08	0.09	0.51	0.05
Control Delay	34.4	19.6	34.5	31.8	0.0	35.0	9.8	1.7	34.5	18.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	19.6	34.5	31.8	0.0	35.0	9.8	1.7	34.5	18.1	0.1
Queue Length 50th (ft)	17	24	22	27	0	42	63	0	7	148	0
Queue Length 95th (ft)	49	84	59	66	0	95	165	13	27	264	0
Internal Link Dist (ft)		2085		364			354			592	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	352	718	352	727	688	352	2139	1002	352	1652	800
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.23	0.15	0.09	0.01	0.29	0.29	0.08	0.05	0.51	0.05

Intersection Summary

Queues
4: Heacock St & SR 60 WB Ramp

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	272	167	278	644	1018
v/c Ratio	0.70	0.41	0.77	0.27	0.70
Control Delay	40.7	18.8	46.8	6.5	24.5
Queue Delay	0.0	0.0	0.2	0.6	0.4
Total Delay	40.7	18.8	47.0	7.0	24.9
Queue Length 50th (ft)	134	41	137	60	217
Queue Length 95th (ft)	213	94	#246	116	#374
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	712	679	437	2390	1446
Starvation Cap Reductn	0	0	12	1264	101
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.25	0.65	0.57	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

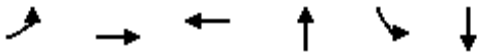
Queues
5: Heacock St & SR 60 EB Ramp

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	116	115	379	811	150	843
v/c Ratio	0.33	0.33	0.81	0.33	0.59	0.34
Control Delay	31.6	31.5	30.7	15.2	45.8	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	31.6	31.5	30.7	15.2	45.8	7.9
Queue Length 50th (ft)	58	57	107	89	80	86
Queue Length 95th (ft)	106	105	210	167	147	171
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	568	570	653	2476	598	2444
Starvation Cap Reductn	0	0	0	0	0	1220
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.58	0.33	0.25	0.69

Intersection Summary

Queues
12: Driveway/Davis St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour



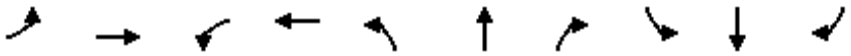
Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	52	461	957	16	147	90
v/c Ratio	0.57	0.30	0.80	0.02	0.22	0.11
Control Delay	72.9	17.4	32.6	0.1	19.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	17.4	32.6	0.1	19.3	0.3
Queue Length 50th (ft)	33	92	274	0	55	0
Queue Length 95th (ft)	#96	122	337	0	112	0
Internal Link Dist (ft)		1226	1262	148		1473
Turn Bay Length (ft)	150				40	
Base Capacity (vph)	92	2046	1582	784	654	848
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.23	0.60	0.02	0.22	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
13: Indian St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	38	593	101	831	143	145	61	111	170	95
v/c Ratio	0.24	0.67	0.49	0.78	0.63	0.21	0.09	0.52	0.28	0.16
Control Delay	44.7	32.7	47.4	34.4	51.6	25.2	0.8	48.1	26.6	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	32.7	47.4	34.4	51.6	25.2	0.8	48.1	26.6	4.4
Queue Length 50th (ft)	22	154	57	236	80	62	0	63	76	0
Queue Length 95th (ft)	51	202	104	295	140	115	0	113	132	21
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	275	1073	275	1149	275	692	660	275	613	598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.55	0.37	0.72	0.52	0.21	0.09	0.40	0.28	0.16

Intersection Summary

Queues
14: Indian St & Hemlock Ave

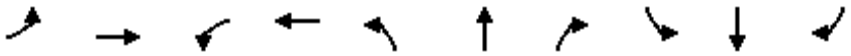
Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	64	157	45	324	54	394
v/c Ratio	0.28	0.25	0.55	0.26	0.36	0.27	0.41
Control Delay	27.2	32.0	30.7	38.7	16.3	36.4	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	32.0	30.7	38.7	16.3	36.4	16.1
Queue Length 50th (ft)	18	28	53	21	99	25	127
Queue Length 95th (ft)	38	57	96	50	173	53	201
Internal Link Dist (ft)	299		2291		1240		1355
Turn Bay Length (ft)		80		145		100	
Base Capacity (vph)	962	490	508	173	911	490	953
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.13	0.31	0.26	0.36	0.11	0.41

Intersection Summary

Queues
15: Indian St & Sunnymead Blvd

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	259	22	287	92	224	66	64	251	98
v/c Ratio	0.26	0.41	0.12	0.51	0.38	0.28	0.07	0.29	0.32	0.10
Control Delay	36.0	23.6	35.5	31.5	36.5	18.2	3.2	36.1	19.6	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	23.6	35.5	31.5	36.5	18.2	3.2	36.1	19.6	3.3
Queue Length 50th (ft)	24	43	10	62	40	69	0	28	81	2
Queue Length 95th (ft)	62	81	33	107	89	143	19	68	167	24
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	354	1366	354	1371	354	812	1119	354	786	1106
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.19	0.06	0.21	0.26	0.28	0.06	0.18	0.32	0.09

Intersection Summary

Queues
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	232	459	134	99	371	176	687	189	76	540	210
v/c Ratio	0.86	0.60	0.31	0.49	0.59	0.72	0.50	0.21	0.40	0.47	0.22
Control Delay	67.5	35.1	10.1	46.3	35.8	54.7	24.7	6.9	44.8	26.6	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	35.1	10.1	46.3	35.8	54.7	24.7	6.9	44.8	26.6	2.8
Queue Length 50th (ft)	126	123	9	52	98	93	152	23	40	123	1
Queue Length 95th (ft)	#294	180	55	108	142	#203	260	70	88	201	38
Internal Link Dist (ft)		1991			1226		695			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	271	1065	556	271	1056	271	1365	974	271	1145	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.43	0.24	0.37	0.35	0.65	0.50	0.19	0.28	0.47	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	267	245	98	21	133	976	238	47	703	44
v/c Ratio	0.33	0.74	0.89	0.20	0.04	0.59	0.66	0.33	0.28	0.60	0.07
Control Delay	43.8	36.7	71.5	28.4	0.1	48.6	25.7	12.6	43.3	28.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	43.8	36.7	71.5	28.4	0.1	48.6	26.0	12.6	43.3	28.4	0.2
Queue Length 50th (ft)	30	101	134	43	0	70	240	45	25	169	0
Queue Length 95th (ft)	71	186	#310	89	0	138	#406	122	62	266	0
Internal Link Dist (ft)		2085		364			354			592	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	276	570	276	571	565	276	1488	732	276	1167	598
Starvation Cap Reductn	0	0	0	0	0	0	102	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.47	0.89	0.17	0.04	0.48	0.70	0.33	0.17	0.60	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Heacock St & SR 60 WB Ramp

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday PM Peak Hour

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	209	219	356	1179	1148
v/c Ratio	0.63	0.62	0.80	0.47	0.84
Control Delay	39.3	28.5	44.6	6.8	29.0
Queue Delay	0.0	0.0	3.3	1.6	0.6
Total Delay	39.3	28.5	47.9	8.3	29.6
Queue Length 50th (ft)	99	69	167	114	256
Queue Length 95th (ft)	166	139	#341	212	#439
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	740	700	455	2486	1373
Starvation Cap Reductn	0	0	43	1060	51
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.31	0.86	0.83	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

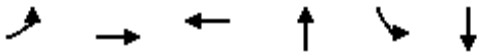
Queues
5: Heacock St & SR 60 EB Ramp

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	277	280	348	1255	242	798
v/c Ratio	0.68	0.68	0.65	0.60	0.71	0.34
Control Delay	40.5	40.7	19.1	23.4	46.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.1	1.0
Total Delay	40.5	40.7	19.1	23.4	47.0	9.1
Queue Length 50th (ft)	155	156	76	199	136	101
Queue Length 95th (ft)	243	246	168	311	212	160
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	542	544	644	2099	571	2335
Starvation Cap Reductn	0	0	0	0	34	1192
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.51	0.54	0.60	0.45	0.70

Intersection Summary

Queues
12: Driveway/Davis St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Existing (2017) With Project Weekday PM Peak Hour

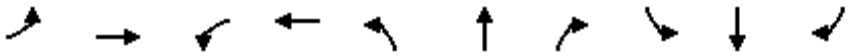


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	98	740	536	108	75	54
v/c Ratio	0.94	0.58	0.74	0.13	0.11	0.05
Control Delay	117.6	23.4	35.3	6.3	11.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.6	23.4	35.3	6.3	11.8	0.1
Queue Length 50th (ft)	53	162	134	12	19	0
Queue Length 95th (ft)	#154	205	181	40	46	0
Internal Link Dist (ft)		1226	1262	148		1473
Turn Bay Length (ft)	150				40	
Base Capacity (vph)	104	2306	1565	827	682	1014
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.32	0.34	0.13	0.11	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

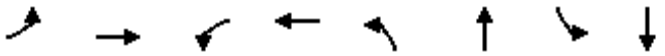
Queues
13: Indian St & Ironwood Ave



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	95	642	59	415	66	146	143	63	98	71
v/c Ratio	0.42	0.72	0.30	0.50	0.33	0.21	0.21	0.32	0.14	0.11
Control Delay	43.0	32.9	42.0	29.0	42.1	23.7	5.5	42.1	23.4	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	32.9	42.0	29.0	42.1	23.7	5.5	42.1	23.4	1.9
Queue Length 50th (ft)	48	160	30	96	34	56	0	32	37	0
Queue Length 95th (ft)	104	241	72	155	78	119	43	76	85	11
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	316	1226	316	1226	316	705	688	316	702	668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.52	0.19	0.34	0.21	0.21	0.21	0.20	0.14	0.11

Intersection Summary

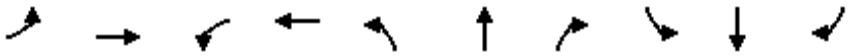
Queues
14: Indian St & Hemlock Ave



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	64	236	43	114	65	365	17	234
v/c Ratio	0.28	0.48	0.18	0.46	0.38	0.36	0.10	0.27
Control Delay	35.6	28.0	33.6	36.3	43.4	13.0	37.1	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	28.0	33.6	36.3	43.4	13.0	37.1	15.7
Queue Length 50th (ft)	29	44	19	48	31	82	8	68
Queue Length 95th (ft)	68	82	50	101	76	230	29	141
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	481	962	481	499	170	1026	481	883
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.25	0.09	0.23	0.38	0.36	0.04	0.27

Intersection Summary

Queues
15: Indian St & Sunnymead Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	160	660	46	315	95	229	77	64	152	67
v/c Ratio	0.64	0.67	0.26	0.45	0.44	0.33	0.09	0.34	0.23	0.07
Control Delay	49.2	31.3	42.7	30.3	44.3	24.4	3.9	43.2	24.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	31.3	42.7	30.3	44.3	24.4	3.9	43.2	24.4	3.8
Queue Length 50th (ft)	83	166	24	75	50	93	0	33	61	0
Queue Length 95th (ft)	#175	247	61	120	104	179	24	77	125	22
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	297	1152	297	1153	297	684	967	297	660	943
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.57	0.15	0.27	0.32	0.33	0.08	0.22	0.23	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Near Term Year (2022)

Queues
1: Heacock St & Ironwood Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	156	335	172	193	686	144	520	110	61	672	309
v/c Ratio	0.69	0.40	0.34	0.79	0.79	0.66	0.40	0.12	0.36	0.62	0.37
Control Delay	57.1	31.6	6.6	64.9	40.1	55.1	25.8	5.8	47.4	32.1	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	31.6	6.6	64.9	40.1	55.1	25.8	5.8	47.4	32.1	11.2
Queue Length 50th (ft)	94	91	0	120	207	87	133	10	37	195	70
Queue Length 95th (ft)	#176	131	50	#237	274	152	194	40	76	261	136
Internal Link Dist (ft)		1991			1226		695			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	256	1008	574	256	1003	256	1286	915	256	1084	851
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.33	0.30	0.75	0.68	0.56	0.40	0.12	0.24	0.62	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2022) Without Project Weekday AM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	46	230	65	86	21	128	710	65	21	969	47
v/c Ratio	0.23	0.64	0.31	0.23	0.05	0.50	0.38	0.07	0.12	0.66	0.06
Control Delay	37.7	25.5	38.0	29.7	0.2	40.1	14.7	1.0	37.5	24.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	25.5	38.0	29.7	0.2	40.1	14.7	1.0	37.5	24.5	0.2
Queue Length 50th (ft)	21	52	29	37	0	57	86	0	9	205	0
Queue Length 95th (ft)	57	129	73	80	0	124	219	7	34	#382	0
Internal Link Dist (ft)		2085		364			354			592	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	342	704	342	708	673	342	1845	880	342	1477	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.33	0.19	0.12	0.03	0.37	0.38	0.07	0.06	0.66	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	360	175	346	736	1236
v/c Ratio	0.77	0.38	0.87	0.33	0.98
Control Delay	42.0	18.5	57.9	8.9	50.7
Queue Delay	0.0	0.0	6.9	0.8	8.3
Total Delay	42.0	18.5	64.8	9.8	59.0
Queue Length 50th (ft)	189	49	189	91	~354
Queue Length 95th (ft)	284	103	#390	164	#598
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	670	638	412	2251	1260
Starvation Cap Reductn	0	0	39	1141	44
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.27	0.93	0.66	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

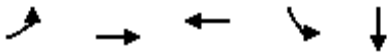
Queues
5: Heacock St & SR 60 EB Ramp

Festival at Moreno Valley Mixed Use
Future (2022) Without Project Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	122	121	520	998	174	1015
v/c Ratio	0.25	0.25	0.95	0.47	0.65	0.46
Control Delay	28.3	28.3	56.2	21.4	50.3	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.2
Total Delay	28.3	28.3	56.2	21.4	50.3	14.4
Queue Length 50th (ft)	62	61	256	157	106	171
Queue Length 95th (ft)	111	110	#466	218	165	217
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	508	510	564	2110	536	2190
Starvation Cap Reductn	0	0	0	0	0	1045
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.24	0.92	0.47	0.32	0.89

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



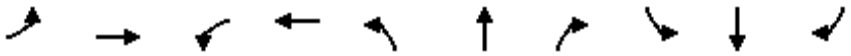
Lane Group	EBL	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	58	497	1048	161	99
v/c Ratio	0.64	0.31	0.80	0.25	0.12
Control Delay	81.6	17.5	32.1	20.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	81.6	17.5	32.1	20.2	0.3
Queue Length 50th (ft)	38	101	306	64	0
Queue Length 95th (ft)	#108	132	372	122	0
Internal Link Dist (ft)		1226	1262		1473
Turn Bay Length (ft)	150			40	
Base Capacity (vph)	90	2010	1636	649	822
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.25	0.64	0.25	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

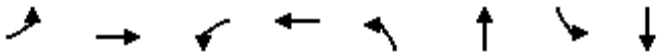
Queues
13: Indian St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) Without Project Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	43	646	142	927	157	179	88	125	207	108
v/c Ratio	0.27	0.77	0.65	0.80	0.69	0.30	0.15	0.59	0.36	0.19
Control Delay	46.2	37.3	54.2	35.8	56.2	27.7	3.5	51.8	28.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	37.3	54.2	35.8	56.2	27.7	3.5	51.8	28.9	5.7
Queue Length 50th (ft)	25	180	84	280	93	84	0	74	101	0
Queue Length 95th (ft)	56	223	139	341	152	138	17	124	158	29
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	261	1018	261	1153	261	597	586	261	580	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.63	0.54	0.80	0.60	0.30	0.15	0.48	0.36	0.19

Intersection Summary

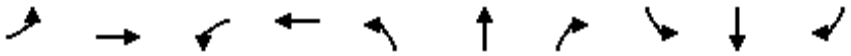


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	137	95	187	50	402	59	486
v/c Ratio	0.07	0.34	0.33	0.60	0.30	0.53	0.30	0.56
Control Delay	35.1	28.0	32.8	33.6	41.1	22.0	38.0	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	28.0	32.8	33.6	41.1	22.0	38.0	20.4
Queue Length 50th (ft)	6	25	43	72	24	140	28	178
Queue Length 95th (ft)	21	47	77	119	55	237	59	275
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	477	944	477	495	168	753	477	862
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.15	0.20	0.38	0.30	0.53	0.12	0.56

Intersection Summary

Queues
15: Indian St & Sunnymead Blvd

Festival at Moreno Valley Mixed Use
Future (2022) Without Project Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	303	25	321	113	252	73	71	283	192
v/c Ratio	0.56	0.35	0.15	0.57	0.48	0.35	0.08	0.35	0.41	0.20
Control Delay	42.9	22.3	38.8	34.3	41.4	21.4	3.6	39.9	23.4	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	22.3	38.8	34.3	41.4	21.4	3.6	39.9	23.4	3.6
Queue Length 50th (ft)	66	54	12	76	54	91	0	34	108	8
Queue Length 95th (ft)	130	93	38	122	110	174	21	77	202	41
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	312	1214	312	1212	312	725	1016	312	694	1022
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.25	0.08	0.26	0.36	0.35	0.07	0.23	0.41	0.19

Intersection Summary

Queues
1: Heacock St & Ironwood Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	256	500	201	111	398	250	786	211	84	620	232
v/c Ratio	0.98	0.63	0.44	0.54	0.58	0.96	0.58	0.23	0.44	0.56	0.26
Control Delay	92.7	35.9	14.2	49.2	35.5	87.4	27.4	8.1	46.8	29.5	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.7	35.9	14.2	49.2	35.5	87.4	27.4	8.1	46.8	29.5	5.9
Queue Length 50th (ft)	148	138	31	61	106	144	193	32	46	154	21
Queue Length 95th (ft)	#338	196	93	122	152	#328	314	87	96	238	71
Internal Link Dist (ft)		1991			1226		585			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	261	1028	555	261	1020	261	1347	955	261	1106	884
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.49	0.36	0.43	0.39	0.96	0.58	0.22	0.32	0.56	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	64	346	92	84	33	228	1195	121	26	878	53
v/c Ratio	0.35	0.80	0.45	0.21	0.08	0.80	0.67	0.14	0.17	0.73	0.09
Control Delay	44.3	35.6	45.5	29.4	0.4	60.0	23.7	5.6	43.1	31.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0
Total Delay	44.3	35.6	45.5	29.4	0.4	60.0	25.0	5.6	43.1	31.7	0.3
Queue Length 50th (ft)	34	119	48	38	0	124	232	2	14	227	0
Queue Length 95th (ft)	79	226	104	79	0	#293	#560	41	42	#385	0
Internal Link Dist (ft)		2085		313			354			702	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	285	610	285	594	583	285	1781	853	285	1206	615
Starvation Cap Reductn	0	0	0	0	0	0	352	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.57	0.32	0.14	0.06	0.80	0.84	0.14	0.09	0.73	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	365	182	460	1419	1401
v/c Ratio	0.77	0.39	1.12	0.63	1.13
Control Delay	42.3	18.9	116.6	12.8	99.5
Queue Delay	0.0	0.0	0.9	16.0	0.1
Total Delay	42.3	18.9	117.4	28.9	99.6
Queue Length 50th (ft)	192	53	~306	235	~483
Queue Length 95th (ft)	290	108	#560	398	#716
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	668	636	410	2245	1235
Starvation Cap Reductn	0	0	34	844	39
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.29	1.22	1.01	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

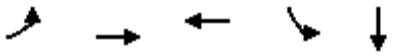
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	276	279	571	1788	189	1036
v/c Ratio	0.55	0.55	1.03	0.88	0.67	0.48
Control Delay	34.4	34.5	75.3	33.2	50.5	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.1	4.6
Total Delay	34.4	34.5	75.3	33.2	50.6	16.2
Queue Length 50th (ft)	154	156	~336	363	115	176
Queue Length 95th (ft)	243	246	#547	#531	176	223
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	502	504	554	2034	529	2162
Starvation Cap Reductn	0	0	0	0	18	1035
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.55	1.03	0.88	0.37	0.92

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

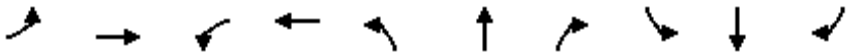


Lane Group	EBL	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	108	784	558	83	60
v/c Ratio	1.33	0.44	0.38	0.14	0.07
Control Delay	253.6	18.3	22.4	20.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	253.6	18.3	22.4	20.6	0.2
Queue Length 50th (ft)	~98	176	135	35	0
Queue Length 95th (ft)	#201	215	173	66	0
Internal Link Dist (ft)		1226	1262		1473
Turn Bay Length (ft)	150			40	
Base Capacity (vph)	81	1777	1453	584	840
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.33	0.44	0.38	0.14	0.07

Intersection Summary

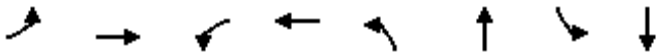
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	670	123	453	73	186	221	72	136	80
v/c Ratio	0.49	0.73	0.53	0.48	0.36	0.28	0.33	0.36	0.20	0.13
Control Delay	46.6	34.4	47.7	28.6	44.6	26.4	8.6	44.7	25.9	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	34.4	47.7	28.6	44.6	26.4	8.6	44.7	25.9	2.7
Queue Length 50th (ft)	60	180	68	110	40	81	17	40	58	0
Queue Length 95th (ft)	119	262	132	171	86	154	77	85	116	17
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	299	1160	299	1164	299	665	680	299	664	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.58	0.41	0.39	0.24	0.28	0.33	0.24	0.20	0.13

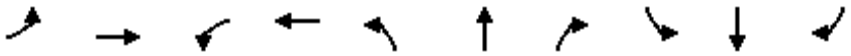
Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	219	113	106	58	587	19	341
v/c Ratio	0.19	0.46	0.46	0.41	0.35	0.66	0.11	0.39
Control Delay	34.2	28.3	38.1	32.6	41.7	21.3	37.0	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	28.3	38.1	32.6	41.7	21.3	37.0	17.0
Queue Length 50th (ft)	20	42	53	43	28	160	9	112
Queue Length 95th (ft)	51	79	106	93	69	#467	31	210
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	480	957	480	498	169	892	480	868
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.23	0.24	0.21	0.34	0.66	0.04	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	397	769	51	356	138	245	85	70	157	278
v/c Ratio	1.49	0.75	0.31	0.49	0.62	0.36	0.10	0.39	0.27	0.29
Control Delay	271.9	34.5	45.1	32.2	51.3	25.5	3.8	45.8	26.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	271.9	34.5	45.1	32.2	51.3	25.5	3.8	45.8	26.4	3.3
Queue Length 50th (ft)	~335	210	29	91	78	109	0	40	70	5
Queue Length 95th (ft)	#538	296	66	135	143	193	25	83	129	49
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	266	1044	266	1036	266	690	941	266	592	945
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.49	0.74	0.19	0.34	0.52	0.36	0.09	0.26	0.27	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) With Project Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	156	329	171	193	680	140	518	110	61	671	309
v/c Ratio	0.69	0.39	0.34	0.79	0.78	0.64	0.40	0.12	0.36	0.62	0.37
Control Delay	56.9	31.5	6.7	64.6	39.8	54.4	25.8	5.8	47.4	31.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	31.5	6.7	64.6	39.8	54.4	25.8	5.8	47.4	31.9	10.9
Queue Length 50th (ft)	94	88	0	119	204	84	132	10	37	193	67
Queue Length 95th (ft)	#176	129	50	#237	271	148	193	40	76	261	133
Internal Link Dist (ft)		1991			1226		695			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	257	1011	574	257	1006	257	1286	916	257	1088	856
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.33	0.30	0.75	0.68	0.54	0.40	0.12	0.24	0.62	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	46	219	58	74	6	128	710	87	19	969	47
v/c Ratio	0.22	0.61	0.27	0.26	0.02	0.48	0.36	0.09	0.10	0.62	0.06
Control Delay	35.9	21.0	35.9	31.5	0.2	37.4	12.9	2.3	36.2	21.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	21.0	35.9	31.5	0.2	37.4	12.9	2.3	36.2	21.6	0.2
Queue Length 50th (ft)	20	36	25	31	0	55	81	0	8	195	0
Queue Length 95th (ft)	56	108	65	72	0	120	207	18	31	#345	0
Internal Link Dist (ft)		2085		364			354			592	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	358	741	358	741	699	358	1975	934	358	1573	767
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.30	0.16	0.10	0.01	0.36	0.36	0.09	0.05	0.62	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Heacock St & SR 60 WB Ramp

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	360	184	346	749	1229
v/c Ratio	0.77	0.40	0.87	0.33	0.98
Control Delay	42.0	19.2	57.9	9.0	49.6
Queue Delay	0.0	0.0	6.9	0.9	7.6
Total Delay	42.0	19.2	64.8	9.9	57.1
Queue Length 50th (ft)	189	54	189	93	348
Queue Length 95th (ft)	284	109	#390	166	#593
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	670	638	412	2251	1260
Starvation Cap Reductn	0	0	39	1135	44
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.29	0.93	0.67	1.01

Intersection Summary

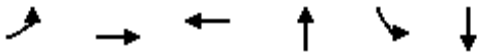
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Heacock St & SR 60 EB Ramp

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	129	127	520	997	171	1011
v/c Ratio	0.27	0.26	0.95	0.47	0.64	0.46
Control Delay	28.6	28.5	55.9	21.3	50.2	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.2
Total Delay	28.6	28.5	55.9	21.3	50.2	14.2
Queue Length 50th (ft)	65	64	256	157	104	170
Queue Length 95th (ft)	116	114	#465	217	162	216
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	509	511	565	2118	536	2191
Starvation Cap Reductn	0	0	0	0	0	1047
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.25	0.92	0.47	0.32	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



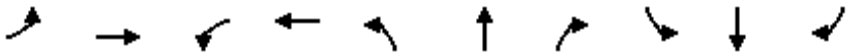
Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	58	508	1060	16	161	99
v/c Ratio	0.66	0.31	0.83	0.02	0.26	0.12
Control Delay	84.2	17.1	33.7	0.1	21.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.2	17.1	33.7	0.1	21.1	0.3
Queue Length 50th (ft)	39	103	319	0	68	0
Queue Length 95th (ft)	#108	134	389	0	122	0
Internal Link Dist (ft)		1226	1262	148		1473
Turn Bay Length (ft)	150				40	
Base Capacity (vph)	88	1966	1521	754	628	810
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.26	0.70	0.02	0.26	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

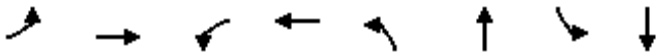
Queues
13: Indian St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) With Project Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	43	653	136	922	157	174	82	125	206	108
v/c Ratio	0.27	0.77	0.63	0.80	0.69	0.29	0.14	0.59	0.36	0.19
Control Delay	46.2	37.5	53.2	35.6	56.2	27.5	2.9	51.8	28.8	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	37.5	53.2	35.6	56.2	27.5	2.9	51.8	28.8	5.7
Queue Length 50th (ft)	25	182	80	278	93	81	0	74	100	0
Queue Length 95th (ft)	56	226	134	338	152	135	14	124	158	29
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	261	1019	261	1152	261	598	587	261	580	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.64	0.52	0.80	0.60	0.29	0.14	0.48	0.36	0.19

Intersection Summary

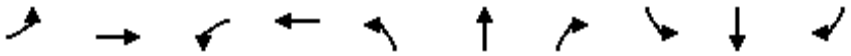


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	122	95	174	50	402	59	479
v/c Ratio	0.01	0.30	0.34	0.57	0.29	0.46	0.29	0.52
Control Delay	34.0	27.5	33.3	31.5	39.9	18.7	37.1	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	27.5	33.3	31.5	39.9	18.7	37.1	18.6
Queue Length 50th (ft)	0	21	43	62	24	135	27	170
Queue Length 95th (ft)	5	42	77	108	54	228	58	262
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	500	982	500	517	176	880	500	928
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.12	0.19	0.34	0.28	0.46	0.12	0.52

Intersection Summary

Queues
15: Indian St & Sunnymead Blvd

Festival at Moreno Valley Mixed Use
Future (2022) With Project Weekday AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	303	25	321	113	252	73	71	281	192
v/c Ratio	0.56	0.35	0.15	0.57	0.48	0.35	0.08	0.35	0.40	0.20
Control Delay	42.9	22.3	38.8	34.3	41.4	21.4	3.6	39.9	23.4	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	22.3	38.8	34.3	41.4	21.4	3.6	39.9	23.4	3.5
Queue Length 50th (ft)	66	54	12	76	54	91	0	34	108	8
Queue Length 95th (ft)	130	93	38	122	110	174	21	77	200	41
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	312	1214	312	1212	312	725	1016	312	694	1023
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.25	0.08	0.26	0.36	0.35	0.07	0.23	0.40	0.19

Intersection Summary

Queues
1: Heacock St & Ironwood Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	256	509	212	111	409	265	800	211	84	633	232
v/c Ratio	0.98	0.63	0.45	0.54	0.59	1.02	0.60	0.23	0.44	0.57	0.26
Control Delay	93.4	36.0	14.7	49.3	35.7	101.7	27.8	8.3	46.9	29.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.4	36.0	14.7	49.3	35.7	101.7	27.8	8.3	46.9	29.9	6.5
Queue Length 50th (ft)	148	141	35	61	110	~156	198	32	46	158	24
Queue Length 95th (ft)	#338	200	99	122	156	#352	320	88	96	244	76
Internal Link Dist (ft)		1991			1226		585			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	261	1025	557	261	1017	261	1343	952	261	1103	877
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.50	0.38	0.43	0.40	1.02	0.60	0.22	0.32	0.57	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	64	362	255	106	24	228	1195	249	49	878	53
v/c Ratio	0.37	0.84	1.00	0.20	0.05	0.89	0.82	0.34	0.31	0.81	0.09
Control Delay	46.9	41.9	97.8	28.1	0.2	75.8	33.2	14.0	46.2	37.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0
Total Delay	46.9	41.9	97.8	28.1	0.2	75.8	34.4	14.0	46.2	37.9	0.3
Queue Length 50th (ft)	36	148	~154	49	0	135	354	55	28	253	0
Queue Length 95th (ft)	79	254	#337	96	0	#293	#586	136	65	#385	0
Internal Link Dist (ft)		2085		313			354			702	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	256	551	256	552	550	256	1465	722	256	1084	565
Starvation Cap Reductn	0	0	0	0	0	0	107	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.66	1.00	0.19	0.04	0.89	0.88	0.34	0.19	0.81	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Heacock St & SR 60 WB Ramp

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	365	241	460	1493	1568
v/c Ratio	0.77	0.51	1.12	0.67	1.27
Control Delay	41.9	23.7	117.6	13.6	155.3
Queue Delay	0.0	0.0	0.9	26.9	0.1
Total Delay	41.9	23.7	118.5	40.4	155.4
Queue Length 50th (ft)	192	83	~306	257	~588
Queue Length 95th (ft)	290	153	#560	435	#834
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	667	635	409	2239	1235
Starvation Cap Reductn	0	0	34	812	33
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.38	1.23	1.05	1.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

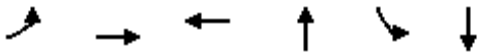
Queues
5: Heacock St & SR 60 EB Ramp

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	307	311	571	1799	263	1052
v/c Ratio	0.61	0.62	1.04	0.98	0.74	0.49
Control Delay	36.3	36.4	77.2	48.0	49.6	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.4	5.0
Total Delay	36.3	36.4	77.2	48.0	50.1	16.7
Queue Length 50th (ft)	175	178	~340	395	158	180
Queue Length 95th (ft)	272	276	#551	#597	226	228
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	502	504	551	1838	529	2162
Starvation Cap Reductn	0	0	0	0	59	1028
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.62	1.04	0.98	0.56	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	108	821	593	108	83	60
v/c Ratio	1.33	0.46	0.50	0.17	0.15	0.07
Control Delay	253.6	18.4	24.6	10.4	20.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	253.6	18.4	24.6	10.4	20.9	0.2
Queue Length 50th (ft)	~98	185	153	20	35	0
Queue Length 95th (ft)	#201	226	196	52	66	0
Internal Link Dist (ft)		1226	1262	148		1473
Turn Bay Length (ft)	150				40	
Base Capacity (vph)	81	1766	1191	647	539	846
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.46	0.50	0.17	0.15	0.07

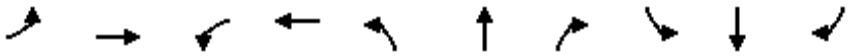
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

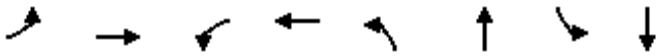
Queues
13: Indian St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	109	709	132	462	73	201	232	72	148	80
v/c Ratio	0.51	0.78	0.59	0.44	0.38	0.32	0.36	0.38	0.24	0.13
Control Delay	47.8	37.3	50.0	27.7	45.7	27.1	9.8	45.7	26.3	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	37.3	50.0	27.7	45.7	27.1	9.8	45.7	26.3	2.7
Queue Length 50th (ft)	61	196	74	113	41	92	25	41	66	0
Queue Length 95th (ft)	119	280	140	174	86	166	89	85	125	17
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	279	1083	279	1089	279	621	643	279	620	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.65	0.47	0.42	0.26	0.32	0.36	0.26	0.24	0.13

Intersection Summary



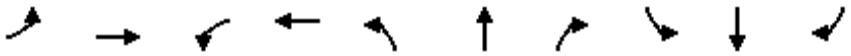
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	257	113	123	71	587	19	361
v/c Ratio	0.29	0.52	0.48	0.49	0.44	0.65	0.12	0.44
Control Delay	35.9	29.6	40.2	37.1	46.3	21.6	38.0	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	29.6	40.2	37.1	46.3	21.6	38.0	18.9
Queue Length 50th (ft)	32	50	54	53	35	164	9	122
Queue Length 95th (ft)	72	91	109	110	#85	#489	32	233
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	459	918	459	477	162	908	459	825
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.28	0.25	0.26	0.44	0.65	0.04	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
15: Indian St & Sunnymead Blvd

Festival at Moreno Valley Mixed Use
Future (2022) With-Project Weekday PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	397	769	51	356	138	257	85	70	172	278
v/c Ratio	1.49	0.75	0.31	0.49	0.62	0.37	0.10	0.39	0.29	0.29
Control Delay	271.9	34.5	45.1	32.2	51.3	25.7	3.8	45.8	26.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	271.9	34.5	45.1	32.2	51.3	25.7	3.8	45.8	26.7	3.3
Queue Length 50th (ft)	~335	210	29	91	78	115	0	40	78	5
Queue Length 95th (ft)	#538	296	66	135	143	203	25	83	140	49
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	266	1044	266	1036	266	690	941	266	592	945
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.49	0.74	0.19	0.34	0.52	0.37	0.09	0.26	0.29	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

General Plan (2035)

Queues
1: Heacock St & Ironwood Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	179	388	171	235	844	138	509	119	66	703	333
v/c Ratio	0.77	0.43	0.33	0.95	0.90	0.65	0.41	0.13	0.39	0.67	0.41
Control Delay	64.1	31.8	8.9	89.6	48.6	55.8	27.1	5.7	48.5	34.4	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	31.8	8.9	89.6	48.6	55.8	27.1	5.7	48.5	34.4	12.9
Queue Length 50th (ft)	111	106	11	151	269	84	132	11	40	208	86
Queue Length 95th (ft)	#214	151	62	#304	#386	147	191	42	80	275	157
Internal Link Dist (ft)		1991			1226		695			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	247	973	543	247	969	247	1227	884	247	1047	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.40	0.31	0.95	0.87	0.56	0.41	0.13	0.27	0.67	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without Project Weekday AM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	209	69	93	24	112	693	79	19	1043	42
v/c Ratio	0.25	0.62	0.32	0.25	0.06	0.46	0.38	0.09	0.10	0.70	0.06
Control Delay	37.5	26.8	37.8	30.0	0.3	39.1	14.6	1.9	37.1	25.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	26.8	37.8	30.0	0.3	39.1	14.6	1.9	37.1	25.4	0.1
Queue Length 50th (ft)	23	52	31	40	0	50	84	0	8	224	0
Queue Length 95th (ft)	62	127	76	86	0	110	212	14	32	#428	0
Internal Link Dist (ft)		2085		364			354			592	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	341	692	341	704	670	341	1844	880	341	1491	733
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.30	0.20	0.13	0.04	0.33	0.38	0.09	0.06	0.70	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Heacock St & SR 60 WB Ramp

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	319	189	320	704	1264
v/c Ratio	0.74	0.43	0.82	0.30	0.95
Control Delay	41.3	19.7	52.1	7.8	42.6
Queue Delay	0.0	0.0	2.7	0.7	3.8
Total Delay	41.3	19.7	54.9	8.5	46.4
Queue Length 50th (ft)	162	53	165	78	347
Queue Length 95th (ft)	250	111	#336	144	#593
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	688	657	423	2314	1334
Starvation Cap Reductn	0	0	40	1186	43
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.29	0.84	0.62	0.98

Intersection Summary

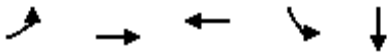
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Heacock St & SR 60 EB Ramp

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	143	141	537	873	184	1015
v/c Ratio	0.29	0.28	0.97	0.42	0.66	0.47
Control Delay	28.9	28.8	60.1	21.2	50.4	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.7
Total Delay	28.9	28.8	60.1	21.2	50.4	15.0
Queue Length 50th (ft)	73	72	272	134	112	171
Queue Length 95th (ft)	128	126	#491	189	172	217
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	505	507	560	2063	532	2174
Starvation Cap Reductn	0	0	0	0	16	1045
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.28	0.96	0.42	0.36	0.90

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

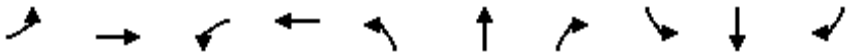


Lane Group	EBL	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	81	545	1280	186	124
v/c Ratio	1.00	0.31	0.89	0.32	0.17
Control Delay	152.2	16.5	38.1	23.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	152.2	16.5	38.1	23.5	3.0
Queue Length 50th (ft)	~58	113	416	87	0
Queue Length 95th (ft)	#155	145	497	140	25
Internal Link Dist (ft)		1226	1262		1473
Turn Bay Length (ft)	150			40	
Base Capacity (vph)	81	1821	1485	588	743
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.00	0.30	0.86	0.32	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

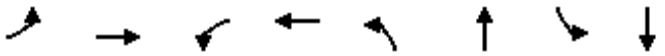


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	722	315	1152	202	305	138	158	243	137
v/c Ratio	0.29	0.82	1.29	0.94	0.85	0.54	0.25	0.71	0.45	0.25
Control Delay	47.5	40.5	192.3	47.0	73.0	33.7	8.8	60.0	31.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	40.5	192.3	47.0	73.0	33.7	8.8	60.0	31.9	8.8
Queue Length 50th (ft)	27	208	~261	~410	127	166	11	97	127	10
Queue Length 95th (ft)	56	252	#390	#514	#223	233	48	153	184	48
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	245	962	245	1229	245	563	559	245	545	545
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.75	1.29	0.94	0.82	0.54	0.25	0.64	0.45	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

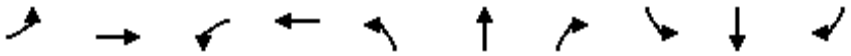


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	155	120	257	58	618	104	695
v/c Ratio	0.06	0.39	0.37	0.73	0.37	0.85	0.46	0.86
Control Delay	36.1	28.8	33.4	38.1	45.4	39.7	41.4	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	28.8	33.4	38.1	45.4	39.7	41.4	36.4
Queue Length 50th (ft)	5	28	55	102	29	293	51	328
Queue Length 95th (ft)	19	52	93	158	63	#510	91	#507
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	446	886	446	470	157	723	446	806
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.17	0.27	0.55	0.37	0.85	0.23	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
15: Indian St & Sunnymead Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	642	45	585	193	415	139	115	449	171
v/c Ratio	0.54	0.71	0.28	0.73	0.78	0.61	0.16	0.55	0.77	0.21
Control Delay	49.4	32.4	45.5	37.8	61.2	32.2	5.1	49.6	40.3	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	32.4	45.5	37.8	61.2	32.2	5.1	49.6	40.3	8.3
Queue Length 50th (ft)	62	160	25	163	109	206	7	64	237	26
Queue Length 95th (ft)	121	225	61	224	#233	#377	41	124	#428	67
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	263	1069	263	1027	263	683	946	263	586	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.60	0.17	0.57	0.73	0.61	0.15	0.44	0.77	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without-Project Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	272	858	173	140	568	170	708	199	81	548	220
v/c Ratio	1.10	0.90	0.34	0.66	0.65	0.75	0.58	0.23	0.45	0.52	0.27
Control Delay	128.2	48.8	13.1	56.2	35.6	62.2	30.0	8.2	49.2	31.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	128.2	48.8	13.1	56.2	35.6	62.2	30.0	8.2	49.2	31.3	7.8
Queue Length 50th (ft)	~202	277	28	85	163	105	198	32	49	154	32
Queue Length 95th (ft)	#364	#395	84	148	221	#199	277	78	94	208	77
Internal Link Dist (ft)		1991			1226		585			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	247	971	518	247	965	247	1229	892	247	1045	828
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.88	0.33	0.57	0.59	0.69	0.58	0.22	0.33	0.52	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Festival at Moreno Valley Mixed Use
Future (2035) Without-Project Weekday PM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	92	407	98	91	35	164	991	135	24	814	44
v/c Ratio	0.45	0.85	0.48	0.20	0.07	0.68	0.60	0.17	0.16	0.70	0.07
Control Delay	47.4	43.7	47.9	29.2	0.3	54.9	23.8	6.8	44.6	32.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	47.4	43.7	47.9	29.2	0.3	54.9	24.6	6.8	44.6	32.4	0.2
Queue Length 50th (ft)	53	183	57	43	0	95	215	6	14	234	0
Queue Length 95th (ft)	104	#342	109	86	0	#189	#390	50	40	327	0
Internal Link Dist (ft)		2085		313			354			702	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	277	579	277	574	568	277	1655	801	277	1171	601
Starvation Cap Reductn	0	0	0	0	0	0	356	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.70	0.35	0.16	0.06	0.59	0.76	0.17	0.09	0.70	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Heacock St & SR 60 WB Ramp

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	256	197	393	1142	1214
v/c Ratio	0.69	0.50	0.89	0.47	0.92
Control Delay	40.4	21.8	56.0	7.7	37.6
Queue Delay	0.0	0.0	11.4	1.7	2.7
Total Delay	40.4	21.8	67.4	9.5	40.3
Queue Length 50th (ft)	125	55	197	123	298
Queue Length 95th (ft)	200	116	#412	229	#517
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	719	686	442	2415	1320
Starvation Cap Reductn	0	0	40	1044	51
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.29	0.98	0.83	0.96

Intersection Summary

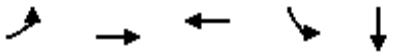
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Heacock St & SR 60 EB Ramp

Festival at Moreno Valley Mixed Use
Future (2035) Without-Project Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	261	265	369	1357	199	970
v/c Ratio	0.65	0.65	0.76	0.61	0.66	0.41
Control Delay	39.1	39.4	31.2	22.0	47.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.1	1.5
Total Delay	39.1	39.4	31.2	22.0	47.3	10.3
Queue Length 50th (ft)	145	147	129	208	112	129
Queue Length 95th (ft)	228	232	233	326	182	204
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	544	546	603	2216	573	2341
Starvation Cap Reductn	0	0	0	0	21	1115
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.49	0.61	0.61	0.36	0.79

Intersection Summary

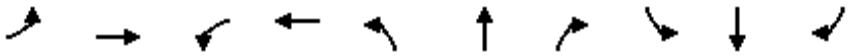


Lane Group	EBL	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	138	1139	777	98	71
v/c Ratio	1.70	0.64	0.53	0.17	0.09
Control Delay	396.1	21.9	25.2	21.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	396.1	21.9	25.2	21.0	0.2
Queue Length 50th (ft)	~141	294	206	42	0
Queue Length 95th (ft)	#256	347	253	76	0
Internal Link Dist (ft)		1226	1262		1473
Turn Bay Length (ft)	150			40	
Base Capacity (vph)	81	1777	1455	584	780
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.70	0.64	0.53	0.17	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

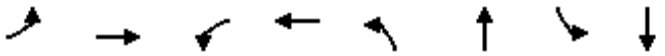


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	1001	93	606	132	272	263	85	200	98
v/c Ratio	0.62	0.98	0.48	0.69	0.61	0.41	0.40	0.45	0.35	0.17
Control Delay	53.0	58.7	48.7	35.5	52.7	28.3	14.3	48.1	28.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	58.7	48.7	35.5	52.7	28.3	14.3	48.1	28.7	4.7
Queue Length 50th (ft)	77	~341	54	169	77	130	52	50	95	0
Queue Length 95th (ft)	142	#502	105	235	141	226	133	97	167	29
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	261	1019	261	1015	261	662	657	261	579	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.98	0.36	0.60	0.51	0.41	0.40	0.33	0.35	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

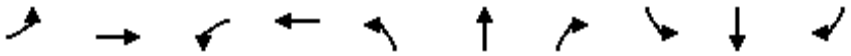
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	257	91	202	68	669	38	382
v/c Ratio	0.19	0.53	0.33	0.65	0.43	0.81	0.22	0.47
Control Delay	35.8	30.6	35.1	33.7	48.1	32.3	40.6	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	30.6	35.1	33.7	48.1	32.3	40.6	21.2
Queue Length 50th (ft)	21	51	43	71	34	304	19	139
Queue Length 95th (ft)	54	95	89	146	#89	#674	52	273
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	447	899	447	474	158	828	447	807
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.29	0.20	0.43	0.43	0.81	0.09	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	244	1222	103	680	241	409	192	116	252	124
v/c Ratio	1.00	1.26	0.53	0.78	0.99	0.69	0.24	0.58	0.46	0.16
Control Delay	101.8	158.2	51.4	40.7	98.7	37.9	6.9	53.0	32.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.8	158.2	51.4	40.7	98.7	37.9	6.9	53.0	32.2	7.7
Queue Length 50th (ft)	~159	~502	62	203	154	229	23	70	131	18
Queue Length 95th (ft)	#318	#663	114	268	#314	#377	64	126	209	51
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	244	968	244	953	244	590	855	244	543	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.26	0.42	0.71	0.99	0.69	0.22	0.48	0.46	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Heacock St & Ironwood Ave

Festival at Moreno Valley Mixed Use
Future (2035) With Project Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	179	382	170	235	838	135	506	119	66	702	333
v/c Ratio	0.77	0.42	0.33	0.95	0.90	0.64	0.41	0.13	0.39	0.67	0.41
Control Delay	64.0	31.7	8.7	89.0	48.0	55.2	27.1	5.7	48.5	34.3	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.0	31.7	8.7	89.0	48.0	55.2	27.1	5.7	48.5	34.3	12.7
Queue Length 50th (ft)	110	104	10	150	265	82	131	11	40	207	85
Queue Length 95th (ft)	#214	150	61	#304	#382	144	189	42	80	275	156
Internal Link Dist (ft)		1991			1226		695			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	248	975	544	248	970	248	1227	884	248	1049	823
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.39	0.31	0.95	0.86	0.54	0.41	0.13	0.27	0.67	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	198	62	81	9	112	693	101	16	1043	42
v/c Ratio	0.25	0.59	0.29	0.29	0.03	0.44	0.33	0.10	0.09	0.66	0.05
Control Delay	35.9	22.9	36.0	31.8	0.1	36.8	11.1	3.0	36.1	22.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	22.9	36.0	31.8	0.1	36.8	11.1	3.0	36.1	22.5	0.1
Queue Length 50th (ft)	22	39	27	34	0	48	79	0	7	214	0
Queue Length 95th (ft)	60	108	69	77	0	108	200	24	28	#410	0
Internal Link Dist (ft)		2085		364			354			592	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	355	724	355	734	694	355	2074	975	355	1586	773
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.27	0.17	0.11	0.01	0.32	0.33	0.10	0.05	0.66	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
4: Heacock St & SR 60 WB Ramp

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	319	198	320	717	1257
v/c Ratio	0.74	0.45	0.82	0.31	0.94
Control Delay	41.3	20.0	52.1	7.8	41.7
Queue Delay	0.0	0.0	2.7	0.7	3.2
Total Delay	41.3	20.0	54.9	8.5	44.9
Queue Length 50th (ft)	162	56	165	80	344
Queue Length 95th (ft)	250	116	#336	147	#588
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	688	659	423	2314	1335
Starvation Cap Reductn	0	0	40	1180	42
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.30	0.84	0.63	0.97

Intersection Summary

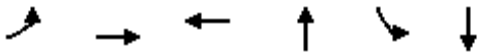
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Heacock St & SR 60 EB Ramp

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	149	148	537	872	181	1011
v/c Ratio	0.30	0.30	0.97	0.42	0.66	0.46
Control Delay	29.1	29.0	59.8	21.0	50.4	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.6
Total Delay	29.1	29.0	59.8	21.0	50.4	14.9
Queue Length 50th (ft)	76	75	271	134	110	170
Queue Length 95th (ft)	132	131	#490	188	170	216
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	505	507	562	2073	532	2175
Starvation Cap Reductn	0	0	0	0	0	1047
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.29	0.96	0.42	0.34	0.90

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

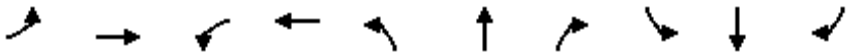


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	81	557	1291	16	186	124
v/c Ratio	1.00	0.31	0.94	0.02	0.32	0.17
Control Delay	155.2	16.4	43.7	0.1	23.8	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	155.2	16.4	43.7	0.1	23.8	3.0
Queue Length 50th (ft)	~58	115	437	0	87	0
Queue Length 95th (ft)	#155	148	#564	0	141	25
Internal Link Dist (ft)		1226	1262	148		1473
Turn Bay Length (ft)	150				40	
Base Capacity (vph)	81	1798	1394	689	574	737
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.31	0.93	0.02	0.32	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	730	310	1146	202	300	132	158	242	137
v/c Ratio	0.29	0.82	1.27	0.93	0.85	0.53	0.24	0.72	0.44	0.25
Control Delay	47.5	40.9	185.5	46.2	73.2	33.5	8.2	60.1	31.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	40.9	185.5	46.2	73.2	33.5	8.2	60.1	31.9	8.8
Queue Length 50th (ft)	27	212	~254	~393	127	163	8	97	127	10
Queue Length 95th (ft)	56	255	#384	#510	#223	229	44	153	184	48
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	245	961	245	1230	245	562	558	245	544	544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.76	1.27	0.93	0.82	0.53	0.24	0.64	0.44	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

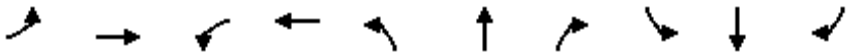
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	139	120	244	58	618	104	687
v/c Ratio	0.36	0.39	0.71	0.37	0.84	0.46	0.84
Control Delay	28.1	33.7	35.9	44.6	38.0	40.7	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	33.7	35.9	44.6	38.0	40.7	34.0
Queue Length 50th (ft)	24	55	91	29	283	50	313
Queue Length 95th (ft)	47	93	145	63	#505	90	#492
Internal Link Dist (ft)	299		2291		1240		1355
Turn Bay Length (ft)		80		145		100	
Base Capacity (vph)	893	451	478	159	732	451	817
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.27	0.51	0.36	0.84	0.23	0.84

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
15: Indian St & Sunnymead Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	642	45	585	193	415	139	115	447	171
v/c Ratio	0.54	0.71	0.28	0.73	0.78	0.61	0.16	0.55	0.76	0.21
Control Delay	49.4	32.4	45.5	37.8	61.2	32.2	5.1	49.6	40.1	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	32.4	45.5	37.8	61.2	32.2	5.1	49.6	40.1	8.3
Queue Length 50th (ft)	62	160	25	163	109	206	7	64	236	26
Queue Length 95th (ft)	121	225	61	224	#233	#377	41	124	#425	67
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	263	1069	263	1027	263	683	946	263	586	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.60	0.17	0.57	0.73	0.61	0.15	0.44	0.76	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
1: Heacock St & Ironwood Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	272	867	185	140	579	186	722	199	81	560	220
v/c Ratio	1.11	0.91	0.36	0.66	0.66	0.80	0.59	0.23	0.45	0.54	0.27
Control Delay	130.6	50.1	14.4	56.5	36.1	66.9	30.2	8.3	49.4	31.7	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.6	50.1	14.4	56.5	36.1	66.9	30.2	8.3	49.4	31.7	8.7
Queue Length 50th (ft)	~202	282	34	85	167	116	204	33	49	158	38
Queue Length 95th (ft)	#364	#402	93	148	225	#226	283	79	94	214	84
Internal Link Dist (ft)		1991			1226		585			1447	
Turn Bay Length (ft)	90		65	135		140		45	100		95
Base Capacity (vph)	245	966	516	245	959	245	1234	892	245	1039	817
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.90	0.36	0.57	0.60	0.76	0.59	0.22	0.33	0.54	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
3: Heacock St & Hemlock Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	92	424	261	113	26	164	991	264	47	814	44
v/c Ratio	0.49	0.90	1.05	0.20	0.05	0.73	0.72	0.38	0.31	0.77	0.08
Control Delay	50.1	51.4	112.9	28.3	0.2	60.5	31.0	15.6	47.5	37.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	50.1	51.4	112.9	28.3	0.2	60.5	31.6	15.6	47.5	37.5	0.3
Queue Length 50th (ft)	56	212	~189	54	0	101	302	69	29	253	0
Queue Length 95th (ft)	104	#376	#345	103	0	#189	#436	148	64	327	0
Internal Link Dist (ft)		2085		313			354			702	
Turn Bay Length (ft)	70		360		200	100		50	95		
Base Capacity (vph)	249	524	249	570	565	249	1377	686	249	1054	552
Starvation Cap Reductn	0	0	0	0	0	0	113	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.81	1.05	0.20	0.05	0.66	0.78	0.38	0.19	0.77	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	256	255	393	1216	1382
v/c Ratio	0.68	0.66	0.89	0.50	1.05
Control Delay	40.0	30.8	56.4	8.2	65.3
Queue Delay	0.0	0.0	11.3	2.1	14.0
Total Delay	40.0	30.8	67.7	10.2	79.2
Queue Length 50th (ft)	125	91	201	142	~414
Queue Length 95th (ft)	200	167	#412	251	#628
Internal Link Dist (ft)	1003			225	354
Turn Bay Length (ft)		30	200		
Base Capacity (vph)	717	678	441	2410	1319
Starvation Cap Reductn	0	0	39	1000	43
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.38	0.98	0.86	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

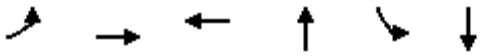
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Heacock St & SR 60 EB Ramp

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	292	296	369	1368	273	985
v/c Ratio	0.69	0.70	0.75	0.69	0.74	0.43
Control Delay	40.8	41.1	30.3	26.8	47.1	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.3	1.7
Total Delay	40.8	41.1	30.3	26.8	47.4	11.0
Queue Length 50th (ft)	166	168	132	235	155	138
Queue Length 95th (ft)	257	261	236	#387	232	209
Internal Link Dist (ft)		711		649		225
Turn Bay Length (ft)					190	
Base Capacity (vph)	536	538	593	1983	565	2309
Starvation Cap Reductn	0	0	0	0	57	1097
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.55	0.62	0.69	0.54	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

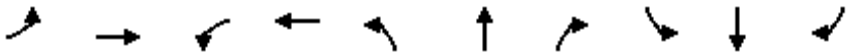


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	138	1176	813	108	98	71
v/c Ratio	1.70	0.67	0.73	0.17	0.18	0.09
Control Delay	396.1	22.4	31.1	10.5	21.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	396.1	22.4	31.1	10.5	21.3	0.2
Queue Length 50th (ft)	~141	308	242	20	42	0
Queue Length 95th (ft)	#256	362	302	52	77	0
Internal Link Dist (ft)		1226	1262	148		1473
Turn Bay Length (ft)	150				40	
Base Capacity (vph)	81	1768	1108	644	539	782
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.70	0.67	0.73	0.17	0.18	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

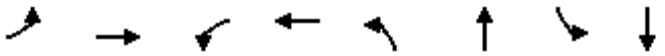


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	1039	102	615	132	287	274	85	212	98
v/c Ratio	0.62	1.02	0.51	0.70	0.61	0.43	0.42	0.45	0.37	0.17
Control Delay	53.1	69.2	49.6	35.7	52.9	28.9	15.2	48.2	29.2	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	69.2	49.6	35.7	52.9	28.9	15.2	48.2	29.2	4.7
Queue Length 50th (ft)	78	~371	60	172	77	139	58	50	103	0
Queue Length 95th (ft)	142	#530	113	239	141	238	143	97	176	29
Internal Link Dist (ft)		1262		2351		1355			1475	
Turn Bay Length (ft)	95		100		110		50	80		50
Base Capacity (vph)	260	1014	260	1012	260	660	654	260	578	570
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	1.02	0.39	0.61	0.51	0.43	0.42	0.33	0.37	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

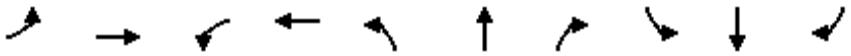
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	69	295	91	219	81	669	38	402
v/c Ratio	0.29	0.57	0.31	0.68	0.53	0.83	0.22	0.51
Control Delay	37.4	31.7	35.0	37.6	53.8	34.7	41.7	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	31.7	35.0	37.6	53.8	34.7	41.7	22.8
Queue Length 50th (ft)	34	61	43	86	42	320	19	155
Queue Length 95th (ft)	76	108	91	169	#114	#688	53	295
Internal Link Dist (ft)		299		2291		1240		1355
Turn Bay Length (ft)	150		80		145		100	
Base Capacity (vph)	438	883	438	461	154	810	438	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.33	0.21	0.48	0.53	0.83	0.09	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	244	1222	103	680	241	422	192	116	267	124
v/c Ratio	1.00	1.26	0.53	0.78	0.99	0.72	0.24	0.58	0.49	0.16
Control Delay	101.8	158.2	51.4	40.7	98.7	38.9	6.9	53.0	32.8	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.8	158.2	51.4	40.7	98.7	38.9	6.9	53.0	32.8	7.7
Queue Length 50th (ft)	~159	~502	62	203	154	238	23	70	140	18
Queue Length 95th (ft)	#318	#663	114	268	#314	#397	64	126	221	51
Internal Link Dist (ft)		683		1025		879			1240	
Turn Bay Length (ft)	90		100		145		105	90		60
Base Capacity (vph)	244	968	244	953	244	590	855	244	543	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.26	0.42	0.71	0.99	0.72	0.22	0.48	0.49	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

SimTraffic Queue Reports

Existing

SimTraffic Performance Report
Existing (2017) Weekday AM Peak Hour 12/04/2017

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Vehicles Entered	0	393	149	0	0	398	345	0	274	340	0	0
Vehicles Exited	125	155	131	125	152	271	325	113	184	230	88	49
Hourly Exit Rate	125	155	131	125	152	271	325	113	184	230	88	49

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Vehicles Entered	526	349	0	2773
Vehicles Exited	310	245	275	2776
Hourly Exit Rate	310	245	275	2776

2: Heacock St & New Project Access Performance by lane

Lane	NB	NB	SB	SB	All
Movements Served	T	TR	LT	T	
Vehicles Entered	297	333	399	433	1461
Vehicles Exited	282	350	332	495	1460
Hourly Exit Rate	282	350	332	495	1460

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Vehicles Entered	137	75	1	145	1	0	357	380	0	0	348	463
Vehicles Exited	39	171	50	79	17	95	267	308	63	17	359	439
Hourly Exit Rate	39	171	50	79	17	95	267	308	63	17	359	439

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Vehicles Entered	45	1954
Vehicles Exited	45	1949
Hourly Exit Rate	45	1949

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Vehicles Entered	422	0	1	646	222	406	554	2251
Vehicles Exited	268	155	285	328	252	459	494	2240
Hourly Exit Rate	268	155	285	328	252	459	494	2240

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Vehicles Entered	183	42	365	505	137	156	1	619	334	2342
Vehicles Exited	168	47	374	473	160	164	145	422	387	2338
Hourly Exit Rate	168	47	374	473	160	164	145	422	387	2338

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	WB	WB	NB	All
Movements Served	LT	TR	LT	TR	LTR	
Vehicles Entered	71	72	122	25	1	291
Vehicles Exited	64	79	122	24	1	290
Hourly Exit Rate	64	79	122	24	1	290

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	All
Movements Served	L	T	TR	L	TR	LTR	R	
Vehicles Entered	0	66	77	0	142	1	4	291
Vehicles Exited	10	57	78	0	142	1	4	293
Hourly Exit Rate	10	57	78	0	142	1	4	293

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Vehicles Entered	132	143	5	280
Vehicles Exited	132	144	5	280
Hourly Exit Rate	132	144	5	280

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Vehicles Entered	114	156	10	278
Vehicles Exited	114	156	9	278
Hourly Exit Rate	114	156	9	278

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Vehicles Entered	104	158	1	263
Vehicles Exited	104	158	1	263
Hourly Exit Rate	104	158	1	263

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Vehicles Entered	103	157	7	267
Vehicles Exited	102	157	7	266
Hourly Exit Rate	102	157	7	266

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	TR	T	TR	L	TR	
Vehicles Entered	0	209	231	404	422	0	213	1480
Vehicles Exited	45	170	228	386	433	131	84	1478
Hourly Exit Rate	45	170	228	386	433	131	84	1478

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Vehicles Entered	0	254	280	0	598	195	0	300	0	0	308	0
Vehicles Exited	30	208	294	90	319	384	122	128	50	89	147	71
Hourly Exit Rate	30	208	294	90	319	384	122	128	50	89	147	71

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Vehicles Entered	1935
Vehicles Exited	1932
Hourly Exit Rate	1932

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Vehicles Entered	0	77	30	0	191	0	294	0	368	960
Vehicles Exited	8	45	53	53	138	33	259	35	335	957
Hourly Exit Rate	8	45	53	53	138	33	259	35	335	957

SimTraffic Performance Report
Existing (2017) Weekday AM Peak Hour 12/04/2017

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Vehicles Entered	0	183	88	0	217	65	0	345	0	0	398	0
Vehicles Exited	48	126	96	22	164	98	82	200	63	60	254	86
Hourly Exit Rate	48	126	96	22	164	98	82	200	63	60	254	86

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Vehicles Entered	1295
Vehicles Exited	1299
Hourly Exit Rate	1299

Total Network Performance

Vehicles Entered	6077
Vehicles Exited	6053
Hourly Exit Rate	6053
Input Volume	24251
% of Volume	25

Queuing and Blocking Report
Existing (2017) Weekday AM Peak Hour

12/04/2017

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	176	150	90	160	268	266	161	181	200	70	124
Average Queue (ft)	74	79	68	45	106	143	152	76	74	98	39	49
95th Queue (ft)	120	148	132	98	178	258	257	139	148	171	88	111
Link Distance (ft)		2012	2012			1213	1213		694	694		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	10	5	11	1	7	12		2	1	31	2	1
Queuing Penalty (veh)	15	7	14	2	19	20		4	1	29	5	2

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	219	275	120
Average Queue (ft)	128	137	99
95th Queue (ft)	204	242	145
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	18	13	8
Queuing Penalty (veh)	9	34	23

Intersection: 2: Heacock St & New Project Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report
Existing (2017) Weekday AM Peak Hour

12/04/2017

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	71	142	80	99	20	123	190	199	75	89	251	279
Average Queue (ft)	25	63	31	37	7	57	70	79	26	17	111	139
95th Queue (ft)	57	116	68	79	22	113	148	155	70	56	210	238
Link Distance (ft)	2106	2106		357			350	350			592	592
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						1	3	14	0		10	
Queuing Penalty (veh)						3	3	8	0		2	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	44
Average Queue (ft)	12
95th Queue (ft)	33
Link Distance (ft)	592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	316	58	224	298	259	344	360
Average Queue (ft)	179	49	167	123	85	190	223
95th Queue (ft)	295	65	239	261	181	310	343
Link Distance (ft)	1034			257	257	350	350
Upstream Blk Time (%)				2	0	0	1
Queuing Penalty (veh)				11	1	0	2
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	55	11	7	0			
Queuing Penalty (veh)	83	28	22	1			

Queuing and Blocking Report
Existing (2017) Weekday AM Peak Hour

12/04/2017

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	177	138	208	282	240	113	186	176	198
Average Queue (ft)	96	33	101	143	68	31	89	74	72
95th Queue (ft)	157	92	173	242	164	77	158	149	157
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							0	0	
Queuing Penalty (veh)							2	0	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	17
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	255
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	NB	SB
Directions Served	L	LTR	R
Maximum Queue (ft)	20	17	25
Average Queue (ft)	1	1	3
95th Queue (ft)	10	8	17
Link Distance (ft)		157	573
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	180		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
Existing (2017) Weekday AM Peak Hour

12/04/2017

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	31	28
Average Queue (ft)	2	4
95th Queue (ft)	15	20
Link Distance (ft)	284	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	23	31
Average Queue (ft)	2	9
95th Queue (ft)	15	31
Link Distance (ft)	542	236
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hemlock Ave & West Access

Movement	SB
Directions Served	R
Maximum Queue (ft)	9
Average Queue (ft)	1
95th Queue (ft)	7
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Existing (2017) Weekday AM Peak Hour

12/04/2017

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	TR	T	TR	L	TR
Maximum Queue (ft)	110	137	160	294	322	64	141
Average Queue (ft)	42	68	83	174	198	44	45
95th Queue (ft)	88	126	144	275	305	74	116
Link Distance (ft)		1213	1213	1261	1261		1507
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150					40	
Storage Blk Time (%)	0	0				14	3
Queuing Penalty (veh)	0	0				11	4

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	83	198	207	124	271	296	132	206	74	105	219	75
Average Queue (ft)	25	85	107	70	131	155	83	75	29	62	88	37
95th Queue (ft)	69	160	189	131	221	242	139	161	72	111	182	78
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	0	6		2	14		7	16	1	10	20	1
Queuing Penalty (veh)	0	2		7	12		12	27	2	22	36	3

Queuing and Blocking Report
Existing (2017) Weekday AM Peak Hour

12/04/2017

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	33	65	72	99	141	88	204	113	216
Average Queue (ft)	6	30	28	39	65	29	80	32	95
95th Queue (ft)	25	57	58	81	118	65	155	78	181
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)				1	6		1		8
Queuing Penalty (veh)				2	3		0		4

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	93	138	96	60	131	122	113	170	107	114	269	85
Average Queue (ft)	32	54	28	17	72	44	56	69	24	47	93	37
95th Queue (ft)	67	105	64	46	117	92	97	130	64	98	194	93
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	1	2			2		0	2	0	1	12	1
Queuing Penalty (veh)	0	1			0		0	3	0	3	18	4

Network Summary

Network wide Queuing Penalty: 527

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	43.6	52.1	33.0	3.1	38.6	34.6	32.5	42.0	25.3	34.1	5.6	40.3
Vehicles Entered	0	562	217	0	0	238	228	0	432	552	0	0
Vehicles Exited	225	200	241	121	103	163	209	144	334	315	183	71
Hourly Exit Rate	225	200	241	121	103	163	209	144	334	315	183	71

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.5
Total Del/Veh (s)	28.1	28.8	9.5	30.0
Vehicles Entered	501	299	0	3029
Vehicles Exited	279	233	212	3034
Hourly Exit Rate	279	233	212	3034

2: Heacock St & New Project Access Performance by lane

Lane	NB	NB	SB	SB	SB	All
Movements Served	T	TR	LT	T	T	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	2.6	2.6	2.7	1.8	2.8	2.5
Vehicles Entered	484	553	339	237	162	1775
Vehicles Exited	459	580	294	397	48	1778
Hourly Exit Rate	459	580	294	397	48	1778

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	35.1	20.7	30.9	24.7	7.9	34.5	17.8	17.9	1.2	37.6	20.1	21.2
Vehicles Entered	178	115	0	190	0	0	539	667	0	0	315	407
Vehicles Exited	50	243	68	88	32	134	450	515	109	20	320	388
Hourly Exit Rate	50	243	68	88	32	134	450	515	109	20	320	388

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		0.0
Total Del/Veh (s)	3.3	19.9
Vehicles Entered	48	2458
Vehicles Exited	45	2463
Hourly Exit Rate	45	2463

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.2
Total Del/Veh (s)	39.3	5.3	39.5	12.4	9.5	22.8	25.2	21.0
Vehicles Entered	339	0	0	869	551	384	547	2689
Vehicles Exited	190	148	354	521	543	443	487	2686
Hourly Exit Rate	190	148	354	521	543	443	487	2686

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	46.1	27.7	11.5	28.8	19.8	10.6	39.7	10.4	10.1	21.4
Vehicles Entered	357	123	323	661	256	297	1	565	333	2916
Vehicles Exited	298	178	331	571	312	326	158	381	356	2910
Hourly Exit Rate	298	178	331	571	312	326	158	381	356	2910

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	EB	WB	NB	All
Movements Served	T	T	TR	T	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	1.5	1.4	0.5	0.3	2.8	0.8
Vehicles Entered	114	31	105	190	24	464
Vehicles Exited	107	36	108	190	24	465
Hourly Exit Rate	107	36	108	190	24	465

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									0.0
Total Del/Veh (s)	2.0	0.2	0.2	1.8	0.4	8.1	5.6	2.7	0.8
Vehicles Entered	2	116	145	7	147	3	6	38	462
Vehicles Exited	48	70	145	7	146	3	6	38	463
Hourly Exit Rate	48	70	145	7	146	3	6	38	463

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.3	0.5	3.9	0.6
Vehicles Entered	216	152	18	387
Vehicles Exited	216	151	18	385
Hourly Exit Rate	216	151	18	385

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.5	0.5	5.0	1.0
Vehicles Entered	214	148	41	403
Vehicles Exited	214	147	40	402
Hourly Exit Rate	214	147	40	402

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.5	0.3	2.0	0.4
Vehicles Entered	229	160	8	398
Vehicles Exited	229	161	8	398
Hourly Exit Rate	229	161	8	398

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.1	1.6	2.5	0.8
Vehicles Entered	227	163	8	398
Vehicles Exited	227	163	8	398
Hourly Exit Rate	227	163	8	398

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	TR	T	TR	L	TR	
Denied Del/Veh (s)								0.2
Total Del/Veh (s)	100.0	20.4	18.1	20.9	21.6	17.5	7.5	24.2
Vehicles Entered	0	281	435	220	238	0	111	1285
Vehicles Exited	75	269	366	216	237	62	49	1274
Hourly Exit Rate	75	269	366	216	237	62	49	1274

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	37.2	26.2	26.9	38.5	25.7	22.5	35.5	22.5	3.9	37.0	20.8	2.8
Vehicles Entered	0	310	364	0	346	73	0	317	0	0	213	0
Vehicles Exited	92	263	325	47	171	202	63	133	119	58	85	69
Hourly Exit Rate	92	263	325	47	171	202	63	133	119	58	85	69

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	24.4
Vehicles Entered	1624
Vehicles Exited	1628
Hourly Exit Rate	1628

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	26.3	32.3	16.7	26.8	25.9	34.1	12.1	41.6	12.2	18.3
Vehicles Entered	0	177	53	0	128	0	408	0	231	997
Vehicles Exited	33	82	113	40	88	51	358	17	216	999
Hourly Exit Rate	33	82	113	40	88	51	358	17	216	999

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	40.4	30.9	21.9	40.6	31.4	20.7	38.7	20.7	10.1	39.3	22.0	7.9
Vehicles Entered	0	529	263	0	263	82	0	375	0	0	291	0
Vehicles Exited	154	333	306	43	178	125	88	209	76	60	166	64
Hourly Exit Rate	154	333	306	43	178	125	88	209	76	60	166	64

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	26.7
Vehicles Entered	1803
Vehicles Exited	1802
Hourly Exit Rate	1802

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	58.4
Vehicles Entered	6950
Vehicles Exited	6943
Hourly Exit Rate	6943
Input Volume	27855
% of Volume	25

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	114	364	368	90	157	191	204	164	274	310	70	125
Average Queue (ft)	110	196	170	61	67	85	103	104	145	176	54	63
95th Queue (ft)	126	332	296	114	128	157	173	175	259	295	94	117
Link Distance (ft)		2012	2012			1213	1213		586	586		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	47	11	31	1	1	3		3	10	37	8	2
Queuing Penalty (veh)	103	25	37	1	2	3		10	16	69	25	6

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	231	242	120
Average Queue (ft)	126	118	81
95th Queue (ft)	198	206	141
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	16	11	3
Queuing Penalty (veh)	12	23	9

Intersection: 2: Heacock St & New Project Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	78	200	104	108	56	124	349	340	75	98	268	284
Average Queue (ft)	32	93	42	40	14	78	149	165	42	20	125	141
95th Queue (ft)	66	168	85	84	39	136	289	298	93	62	241	246
Link Distance (ft)	2106	2106		306			337	337			702	702
Upstream Blk Time (%)							0	0				
Queuing Penalty (veh)							3	2				
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						4	13	30	1		14	
Queuing Penalty (veh)						20	17	33	3		3	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	49
Average Queue (ft)	13
95th Queue (ft)	35
Link Distance (ft)	702
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	253	64	224	319	273	316	334
Average Queue (ft)	140	50	187	185	125	163	192
95th Queue (ft)	230	67	256	347	247	280	317
Link Distance (ft)	1034			257	257	337	337
Upstream Blk Time (%)				7	0	0	0
Queuing Penalty (veh)				50	3	0	1
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	55	18	16	2			
Queuing Penalty (veh)	84	37	84	5			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	386	341	195	441	329	212	188	239	225
Average Queue (ft)	191	131	90	232	160	88	100	92	91
95th Queue (ft)	317	266	162	382	292	178	168	191	186
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							0	1	
Queuing Penalty (veh)							1	1	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	40
Average Queue (ft)	14
95th Queue (ft)	36
Link Distance (ft)	238
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	LT	R
Maximum Queue (ft)	48	20	24	26	49
Average Queue (ft)	5	1	2	5	16
95th Queue (ft)	26	9	12	20	35
Link Distance (ft)		285	155	572	572
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	180				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	29	33
Average Queue (ft)	2	12
95th Queue (ft)	14	35
Link Distance (ft)	285	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	34	39
Average Queue (ft)	3	23
95th Queue (ft)	19	45
Link Distance (ft)	542	236
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hemlock Ave & West Access

Movement	EB	SB
Directions Served	LT	R
Maximum Queue (ft)	10	23
Average Queue (ft)	1	5
95th Queue (ft)	8	21
Link Distance (ft)	622	328
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	TR	T	TR	L	TR
Maximum Queue (ft)	174	270	252	176	197	63	88
Average Queue (ft)	86	117	130	88	96	31	27
95th Queue (ft)	162	222	221	153	163	66	67
Link Distance (ft)		1213	1213	1261	1261		1507
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150					40	
Storage Blk Time (%)	5	3				8	2
Queuing Penalty (veh)	16	3				4	1

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	119	231	240	97	152	161	116	173	75	99	146	75
Average Queue (ft)	69	123	140	33	71	82	47	59	45	44	46	31
95th Queue (ft)	122	215	229	73	117	135	95	134	84	85	104	70
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	2	13		0	2		0	12	3	3	8	1
Queuing Penalty (veh)	4	11		0	1		1	23	6	4	10	1

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	70	93	97	81	115	120	206	56	153
Average Queue (ft)	23	47	50	29	52	43	94	17	69
95th Queue (ft)	58	79	87	67	96	91	179	46	127
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)				0	3		2		3
Queuing Penalty (veh)				0	1		1		0

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	313	263	113	176	147	152	187	130	109	195	85
Average Queue (ft)	97	173	135	34	87	57	66	89	40	50	73	37
95th Queue (ft)	136	279	230	82	142	116	115	156	98	97	139	93
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	21	24		0	6		0	5	0	2	12	1
Queuing Penalty (veh)	55	37		0	3		0	8	0	3	15	2

Network Summary

Network wide Queuing Penalty: 900

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	38.0	32.2	30.7	6.4	40.5	33.1	33.3	37.6	21.5	25.6	6.6	43.5
Vehicles Entered	0	410	156	0	0	415	347	0	281	341	0	0
Vehicles Exited	136	153	144	129	167	274	323	101	196	228	98	47
Hourly Exit Rate	136	153	144	129	167	274	323	101	196	228	98	47

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.5
Total Del/Veh (s)	26.0	32.4	10.2	27.4
Vehicles Entered	535	354	0	2838
Vehicles Exited	322	251	269	2838
Hourly Exit Rate	322	251	269	2838

2: Heacock St & New Project Access Performance by lane

Lane	WB	NB	NB	SB	SB	All
Movements Served	LR	T	TR	LT	T	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	4.3	1.8	1.8	2.9	2.1	2.1
Vehicles Entered	8	312	332	419	450	1521
Vehicles Exited	8	293	349	347	521	1517
Hourly Exit Rate	8	293	349	347	521	1517

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	31.0	16.7	30.0	7.4	3.3	29.6	10.3	10.2	1.2	34.9	13.7	16.0
Vehicles Entered	132	70	0	258	0	0	366	408	0	0	363	484
Vehicles Exited	38	162	44	211	3	93	285	320	79	15	368	461
Hourly Exit Rate	38	162	44	211	3	93	285	320	79	15	368	461

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		0.0
Total Del/Veh (s)	2.0	13.6
Vehicles Entered	45	2127
Vehicles Exited	44	2123
Hourly Exit Rate	44	2123

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.3
Total Del/Veh (s)	39.7	2.4	37.9	11.2	8.9	25.5	28.2	23.4
Vehicles Entered	416	0	2	622	237	410	576	2262
Vehicles Exited	251	163	254	337	271	469	521	2265
Hourly Exit Rate	251	163	254	337	271	469	521	2265

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	32.9	26.5	12.5	15.7	11.4	4.3	37.2	8.3	7.7	14.4
Vehicles Entered	183	49	353	483	139	144	1	624	353	2327
Vehicles Exited	166	56	361	452	167	153	155	432	392	2333
Hourly Exit Rate	166	56	361	452	167	153	155	432	392	2333

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	WB	WB	NB	All
Movements Served	LT	TR	LT	TR	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	1.5	0.6	0.2	0.3	2.8	0.5
Vehicles Entered	76	74	169	96	1	416
Vehicles Exited	76	75	174	91	1	416
Hourly Exit Rate	76	75	174	91	1	416

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									0.1
Total Del/Veh (s)	2.3	0.5	0.3	1.6	0.2	5.6	6.1	2.7	1.1
Vehicles Entered	54	183	105	3	190	31	3	53	622
Vehicles Exited	97	137	107	3	189	31	3	53	620
Hourly Exit Rate	97	137	107	3	189	31	3	53	620

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.5	0.4	2.7	0.5
Vehicles Entered	205	194	4	403
Vehicles Exited	205	195	4	402
Hourly Exit Rate	205	195	4	402

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	1.8	0.7	4.2	1.8
Vehicles Entered	191	171	75	436
Vehicles Exited	189	171	75	435
Hourly Exit Rate	189	171	75	435

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	0.4	0.7	3.6	4.8	1.0
Vehicles Entered	112	210	16	20	358
Vehicles Exited	112	210	16	20	358
Hourly Exit Rate	112	210	16	20	358

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.2	1.4	2.3	0.8
Vehicles Entered	137	137	6	280
Vehicles Exited	138	136	6	280
Hourly Exit Rate	138	136	6	280

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	LT	TR	LTR	L	TR	
Denied Del/Veh (s)									0.3
Total Del/Veh (s)	54.4	17.1	17.9	27.0	28.1	7.4	12.5	12.5	23.4
Vehicles Entered	0	211	257	421	435	17	0	212	1554
Vehicles Exited	45	179	249	407	446	17	128	82	1554
Hourly Exit Rate	45	179	249	407	446	17	128	82	1554

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	47.0	24.7	24.9	42.7	26.6	26.6	37.8	27.5	2.4	39.6	26.0	4.9
Vehicles Entered	0	267	296	0	593	196	0	306	0	0	300	0
Vehicles Exited	32	222	307	85	327	376	122	129	55	75	146	80
Hourly Exit Rate	32	222	307	85	327	376	122	129	55	75	146	80

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	26.8
Vehicles Entered	1957
Vehicles Exited	1956
Hourly Exit Rate	1956

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)									0.1
Total Del/Veh (s)	14.7	14.1	24.9	20.5	30.2	12.1	29.7	11.9	15.6
Vehicles Entered	109	28	0	176	0	293	0	363	967
Vehicles Exited	91	47	47	128	33	261	47	315	969
Hourly Exit Rate	91	47	47	128	33	261	47	315	969

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	33.6	23.5	10.7	35.1	26.0	15.6	29.4	14.2	6.2	34.1	19.5	6.3
Vehicles Entered	0	191	91	0	226	59	0	340	0	0	374	0
Vehicles Exited	48	134	100	22	165	97	74	202	64	52	235	88
Hourly Exit Rate	48	134	100	22	165	97	74	202	64	52	235	88

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	19.4
Vehicles Entered	1282
Vehicles Exited	1281
Hourly Exit Rate	1281

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	51.0
Vehicles Entered	6519
Vehicles Exited	6515
Hourly Exit Rate	6515
Input Volume	25503
% of Volume	26

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	222	179	90	160	298	293	162	191	217	71	124
Average Queue (ft)	80	86	76	51	109	149	159	69	84	109	43	48
95th Queue (ft)	128	162	144	101	180	272	271	128	156	192	93	108
Link Distance (ft)		2012	2012			1213	1213		694	694		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	13	6	16	2	9	10		1	1	30	5	1
Queuing Penalty (veh)	18	7	20	3	23	16		1	2	28	12	3

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	225	264	120
Average Queue (ft)	132	141	95
95th Queue (ft)	199	231	148
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	18	14	7
Queuing Penalty (veh)	10	37	19

Intersection: 2: Heacock St & New Project Access

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	7
95th Queue (ft)	27
Link Distance (ft)	461
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	58	146	61	86	20	119	190	190	75	69	259	292
Average Queue (ft)	25	60	29	30	1	54	69	81	30	13	113	139
95th Queue (ft)	53	114	59	65	10	108	145	159	76	43	209	241
Link Distance (ft)	2106	2106		357			350	350			592	592
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						1	2	14	0		8	
Queuing Penalty (veh)						4	2	11	1		1	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	35
Average Queue (ft)	9
95th Queue (ft)	26
Link Distance (ft)	592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	319	57	222	284	198	352	374
Average Queue (ft)	181	49	148	107	76	200	231
95th Queue (ft)	294	63	230	226	156	336	358
Link Distance (ft)	1034			257	257	350	350
Upstream Blk Time (%)				1	0	0	1
Queuing Penalty (veh)				6	0	1	4
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	55	11	5	0			
Queuing Penalty (veh)	88	29	15	0			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	168	133	203	291	216	100	185	208	204
Average Queue (ft)	92	40	94	137	67	27	96	87	82
95th Queue (ft)	150	96	161	234	154	62	157	180	176
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							0	0	
Queuing Penalty (veh)							1	1	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	17
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	255
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	TR	LTR	LT	R
Maximum Queue (ft)	60	9	11	5	2	48	28	52
Average Queue (ft)	12	0	0	0	0	15	3	23
95th Queue (ft)	39	7	8	4	2	36	17	43
Link Distance (ft)		222	222	284	284	157	573	573
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	180							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	44	27
Average Queue (ft)	3	3
95th Queue (ft)	21	18
Link Distance (ft)	284	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	69	4	62
Average Queue (ft)	15	0	31
95th Queue (ft)	48	3	52
Link Distance (ft)	542	620	236
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hemlock Ave & West Access

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	12	38	35	28
Average Queue (ft)	1	4	13	12
95th Queue (ft)	8	23	38	31
Link Distance (ft)	620	105	225	328
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	118	156	174	336	372	44	64	152
Average Queue (ft)	39	65	91	184	204	8	44	41
95th Queue (ft)	82	131	159	300	331	31	74	109
Link Distance (ft)		1213	1213	1261	1261	182		1507
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150						40	
Storage Blk Time (%)	0	0					14	4
Queuing Penalty (veh)	0	0					11	5

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	114	206	218	124	298	322	134	251	76	105	238	76
Average Queue (ft)	28	91	116	65	137	156	82	79	27	58	77	40
95th Queue (ft)	75	175	197	125	241	258	140	171	73	102	164	83
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	0	9		2	14		7	17	1	6	19	2
Queuing Penalty (veh)	1	3		6	12		12	29	1	13	34	5

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	56	65	90	176	96	185	123	204
Average Queue (ft)	28	24	33	65	29	71	40	90
95th Queue (ft)	53	53	70	126	74	151	90	167
Link Distance (ft)	318	318		2337		1227		1353
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			80		145		100	
Storage Blk Time (%)			1	5		1	0	7
Queuing Penalty (veh)			1	3		1	1	3

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	79	122	86	86	157	133	102	188	111	104	273	85
Average Queue (ft)	31	57	30	20	72	41	53	73	27	44	93	39
95th Queue (ft)	65	104	64	61	130	95	92	145	81	91	195	93
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	0	2		0	3			3	0	1	13	1
Queuing Penalty (veh)	0	1		0	1			4	0	3	19	4

Network Summary

Network wide Queuing Penalty: 537

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	46.3	73.6	36.4	4.5	44.7	29.2	28.0	44.8	29.4	40.2	4.6	42.4
Vehicles Entered	0	578	224	0	0	213	246	0	489	561	0	0
Vehicles Exited	228	197	245	132	91	161	215	172	353	325	194	71
Hourly Exit Rate	228	197	245	132	91	161	215	172	353	325	194	71

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.5
Total Del/Veh (s)	28.9	30.9	10.5	33.0
Vehicles Entered	510	299	0	3121
Vehicles Exited	294	235	207	3120
Hourly Exit Rate	294	235	207	3120

2: Heacock St & New Project Access Performance by lane

Lane	WB	NB	NB	SB	SB	All
Movements Served	LR	T	TR	LT	T	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	9.0	3.0	2.8	2.8	2.2	2.8
Vehicles Entered	33	563	503	361	392	1851
Vehicles Exited	32	514	558	330	425	1859
Hourly Exit Rate	32	514	558	330	425	1859

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	32.7	28.2	72.8	10.3	9.5	46.0	32.8	41.5	1.5	43.0	29.0	32.1
Vehicles Entered	208	122	0	662	0	0	584	774	0	0	353	387
Vehicles Exited	64	267	245	398	18	125	528	467	237	48	324	370
Hourly Exit Rate	64	267	245	398	18	125	528	467	237	48	324	370

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		0.0
Total Del/Veh (s)	3.3	31.4
Vehicles Entered	48	3138
Vehicles Exited	47	3137
Hourly Exit Rate	47	3137

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.3
Total Del/Veh (s)	48.0	8.3	45.0	16.8	16.0	34.8	37.9	28.5
Vehicles Entered	408	0	0	829	672	495	618	3021
Vehicles Exited	201	209	342	559	598	549	561	3021
Hourly Exit Rate	201	209	342	559	598	549	561	3021

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	64.2	43.9	11.7	45.9	36.0	21.5	37.6	12.6	11.2	31.0
Vehicles Entered	376	164	321	624	295	305	2	677	325	3087
Vehicles Exited	297	227	333	531	343	357	236	391	375	3090
Hourly Exit Rate	297	227	333	531	343	357	236	391	375	3090

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	WB	WB	NB	All
Movements Served	LT	TR	LT	TR	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	1.2	0.8	6.6	8.4	3.6	4.9
Vehicles Entered	197	221	351	328	22	1118
Vehicles Exited	199	218	414	260	22	1114
Hourly Exit Rate	199	218	414	260	22	1114

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									2.1
Total Del/Veh (s)	3.7	0.8	0.7	3.7	1.6	51.5	21.5	7.8	9.5
Vehicles Entered	111	326	298	32	295	192	38	237	1530
Vehicles Exited	272	173	291	33	294	189	34	241	1528
Hourly Exit Rate	272	173	291	33	294	189	34	241	1528

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.7	0.5	6.7	0.8
Vehicles Entered	364	322	20	706
Vehicles Exited	364	321	20	705
Hourly Exit Rate	364	321	20	705

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.1
Total Del/Veh (s)	2.8	1.4	11.2	5.6
Vehicles Entered	361	189	320	868
Vehicles Exited	360	189	320	868
Hourly Exit Rate	360	189	320	868

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	1.2	1.6	5.6	8.6	2.9
Vehicles Entered	260	338	115	99	812
Vehicles Exited	261	338	115	100	813
Hourly Exit Rate	261	338	115	100	813

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.4	1.7	4.3	0.9
Vehicles Entered	398	213	11	622
Vehicles Exited	397	214	10	620
Hourly Exit Rate	397	214	10	620

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	LT	TR	LTR	L	TR	
Denied Del/Veh (s)									0.2
Total Del/Veh (s)	67.4	18.9	20.1	31.9	24.2	8.1	10.8	6.1	23.4
Vehicles Entered	0	277	455	229	219	97	0	110	1387
Vehicles Exited	83	289	352	202	243	97	58	52	1375
Hourly Exit Rate	83	289	352	202	243	97	58	52	1375

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	41.1	24.3	25.1	39.1	25.3	23.8	36.9	25.0	4.0	37.3	19.5	3.0
Vehicles Entered	0	336	363	0	355	74	0	334	0	0	206	0
Vehicles Exited	86	277	339	50	179	202	54	152	127	59	89	57
Hourly Exit Rate	86	277	339	50	179	202	54	152	127	59	89	57

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	24.3
Vehicles Entered	1667
Vehicles Exited	1670
Hourly Exit Rate	1670

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	25.3	15.7	15.8	26.6	29.3	35.4	14.5	34.4	12.9	18.3
Vehicles Entered	0	286	111	0	143	0	417	0	226	1183
Vehicles Exited	60	187	150	35	109	62	356	18	208	1184
Hourly Exit Rate	60	187	150	35	109	62	356	18	208	1184

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	40.9	30.6	20.4	41.1	29.9	19.7	38.7	20.9	9.5	40.8	20.2	8.0
Vehicles Entered	0	520	274	0	271	85	0	376	0	0	275	0
Vehicles Exited	158	320	314	43	187	128	91	212	71	57	157	61
Hourly Exit Rate	158	320	314	43	187	128	91	212	71	57	157	61

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	26.2
Vehicles Entered	1801
Vehicles Exited	1799
Hourly Exit Rate	1799

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	64.5
Vehicles Entered	8673
Vehicles Exited	8670
Hourly Exit Rate	8670
Input Volume	34011
% of Volume	25

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	462	425	90	150	188	197	165	314	335	71	125
Average Queue (ft)	109	233	187	63	62	81	95	124	165	194	50	67
95th Queue (ft)	128	450	387	116	124	154	167	188	301	333	96	130
Link Distance (ft)		2012	2012			1213	1213		694	694		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	51	9	32	1	1	1		9	14	40	6	2
Queuing Penalty (veh)	114	20	42	2	2	1		32	23	75	21	5

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	230	272	120
Average Queue (ft)	132	128	87
95th Queue (ft)	211	226	145
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	19	14	5
Queuing Penalty (veh)	14	30	12

Intersection: 2: Heacock St & New Project Access

Movement	WB
Directions Served	LR
Maximum Queue (ft)	59
Average Queue (ft)	22
95th Queue (ft)	51
Link Distance (ft)	461
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	114	244	306	274	33	124	371	388	75	120	289	326
Average Queue (ft)	38	119	188	109	8	95	272	292	60	49	159	171
95th Queue (ft)	83	203	337	328	25	149	416	416	99	116	276	288
Link Distance (ft)	2106	2106		357			350	350			592	592
Upstream Blk Time (%)			1	6			4	5				
Queuing Penalty (veh)			0	38			24	34				
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)			1			9	29	46	3	1	22	
Queuing Penalty (veh)			1			42	39	107	14	4	10	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	48
Average Queue (ft)	13
95th Queue (ft)	33
Link Distance (ft)	592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	329	61	225	321	280	371	377
Average Queue (ft)	181	52	198	219	178	261	280
95th Queue (ft)	288	64	262	372	314	390	405
Link Distance (ft)	1034			257	257	350	350
Upstream Blk Time (%)				11	3	2	4
Queuing Penalty (veh)				80	20	12	24
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	49	36	18	5			
Queuing Penalty (veh)	102	72	104	17			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	401	361	210	505	478	319	214	294	264
Average Queue (ft)	227	175	85	294	219	140	143	110	104
95th Queue (ft)	423	369	152	461	403	268	225	244	228
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)								1	0
Queuing Penalty (veh)								5	2
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							4	1	
Queuing Penalty (veh)							15	4	

Intersection: 6: Hemlock Ave & New Project Access

Movement	WB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	74	67	35
Average Queue (ft)	25	25	15
95th Queue (ft)	137	138	39
Link Distance (ft)	222	222	255
Upstream Blk Time (%)	3	3	
Queuing Penalty (veh)	10	8	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	LT	R
Maximum Queue (ft)	98	11	38	42	191	67	135
Average Queue (ft)	38	0	9	7	107	24	55
95th Queue (ft)	77	5	30	46	196	52	103
Link Distance (ft)		222	284	284	157	573	573
Upstream Blk Time (%)					21		
Queuing Penalty (veh)					0		
Storage Bay Dist (ft)	180						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	44	32
Average Queue (ft)	4	14
95th Queue (ft)	22	37
Link Distance (ft)	284	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	98	18	218
Average Queue (ft)	37	1	85
95th Queue (ft)	78	9	164
Link Distance (ft)	542	620	236
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hemlock Ave & West Access

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	99	85	76
Average Queue (ft)	3	29	40	34
95th Queue (ft)	17	77	69	62
Link Distance (ft)	620	105	225	328
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	9
95th Queue (ft)	33
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	163	271	237	217	218	90	62	82
Average Queue (ft)	78	109	122	110	112	33	23	21
95th Queue (ft)	146	205	199	180	187	71	55	56
Link Distance (ft)		1213	1213	1261	1261	182		1507
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150						40	
Storage Blk Time (%)	1	2					3	1
Queuing Penalty (veh)	4	2					1	1

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	119	211	225	117	169	185	128	220	75	98	124	74
Average Queue (ft)	61	105	126	38	75	85	44	76	52	45	46	29
95th Queue (ft)	116	197	216	88	133	151	98	164	91	83	94	71
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	4	13		0	3		0	17	4	3	8	1
Queuing Penalty (veh)	10	11		0	2		1	33	8	4	10	1

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	92	100	139	97	154	169	278	66	180
Average Queue (ft)	37	51	59	32	68	51	109	18	71
95th Queue (ft)	74	86	106	80	127	111	214	50	137
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)				0	8	0	4		3
Queuing Penalty (veh)				0	3	0	2		1

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	314	288	119	189	144	150	234	130	106	174	83
Average Queue (ft)	93	173	131	35	90	58	67	91	34	47	65	36
95th Queue (ft)	138	276	232	83	152	115	127	168	91	92	130	89
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	21	23		0	6		0	5	0	2	10	1
Queuing Penalty (veh)	53	35		0	3		1	8	0	4	12	2

Network Summary

Network wide Queuing Penalty: 1397

Near Term Year (2022)

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	39.7	32.6	31.6	6.8	49.1	35.4	35.0	43.4	24.4	27.7	5.8	44.7
Vehicles Entered	0	426	183	0	0	467	384	0	322	408	0	0
Vehicles Exited	145	161	147	154	185	308	355	125	239	266	100	60
Hourly Exit Rate	145	161	147	154	185	308	355	125	239	266	100	60

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.5
Total Del/Veh (s)	30.1	37.7	10.3	30.2
Vehicles Entered	596	407	0	3193
Vehicles Exited	357	299	291	3191
Hourly Exit Rate	357	299	291	3191

2: Heacock St & New Project Access Performance by lane

Lane	NB	NB	SB	SB	All
Movements Served	T	TR	LT	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	2.4	2.2	6.4	6.1	4.5
Vehicles Entered	347	413	466	530	1756
Vehicles Exited	333	427	415	574	1750
Hourly Exit Rate	333	427	415	574	1750

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	33.8	37.6	76.6	25.3	4.8	34.7	18.6	17.2	1.4	40.0	66.8	74.5
Vehicles Entered	163	99	1	168	0	0	402	490	0	0	431	534
Vehicles Exited	42	220	53	91	25	122	315	380	69	17	463	471
Hourly Exit Rate	42	220	53	91	25	122	315	380	69	17	463	471

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		2.5
Total Del/Veh (s)	5.1	43.3
Vehicles Entered	51	2339
Vehicles Exited	50	2318
Hourly Exit Rate	50	2318

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.6
Total Del/Veh (s)	47.5	3.3	45.9	19.8	13.8	48.1	52.3	37.7
Vehicles Entered	522	0	2	707	342	520	644	2738
Vehicles Exited	353	172	333	365	352	580	573	2727
Hourly Exit Rate	353	172	333	365	352	580	573	2727

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	48.5	25.8	21.7	34.0	18.7	8.2	45.5	9.7	8.6	21.6
Vehicles Entered	200	58	483	610	177	202	0	779	397	2907
Vehicles Exited	172	67	502	531	239	218	176	532	472	2909
Hourly Exit Rate	172	67	502	531	239	218	176	532	472	2909

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	WB	WB	NB	All
Movements Served	LT	TR	LT	TR	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	2.1	0.7	0.1	0.2	2.7	0.7
Vehicles Entered	71	82	135	34	2	324
Vehicles Exited	67	87	138	31	2	325
Hourly Exit Rate	67	87	138	31	2	325

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	All
Movements Served	L	T	TR	L	TR	LTR	R	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	2.3	0.1	0.1	0.0	0.2	5.1	2.1	0.3
Vehicles Entered	0	67	86	1	156	3	9	321
Vehicles Exited	12	56	86	1	156	3	9	322
Hourly Exit Rate	12	56	86	1	156	3	9	322

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.6	0.4	2.7	0.5
Vehicles Entered	140	159	6	305
Vehicles Exited	140	159	6	305
Hourly Exit Rate	140	159	6	305

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.4	0.6	4.8	0.6
Vehicles Entered	124	174	9	308
Vehicles Exited	124	174	9	308
Hourly Exit Rate	124	174	9	308

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.3	0.2	1.7	0.2
Vehicles Entered	115	179	1	296
Vehicles Exited	115	179	1	295
Hourly Exit Rate	115	179	1	295

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.1	1.4	2.7	1.0
Vehicles Entered	113	177	7	297
Vehicles Exited	113	176	7	296
Hourly Exit Rate	113	176	7	296

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	TR	T	TR	L	TR	
Denied Del/Veh (s)								0.3
Total Del/Veh (s)	53.5	18.3	16.8	28.0	31.0	12.9	13.4	24.9
Vehicles Entered	0	219	263	463	465	0	226	1636
Vehicles Exited	53	177	253	452	474	140	89	1637
Hourly Exit Rate	53	177	253	452	474	140	89	1637

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	44.3	24.8	26.6	43.7	29.0	30.2	41.3	28.4	3.4	41.9	32.7	4.7
Vehicles Entered	0	271	309	0	660	226	0	337	0	0	381	0
Vehicles Exited	36	237	307	107	370	412	126	143	67	103	189	89
Hourly Exit Rate	36	237	307	107	370	412	126	143	67	103	189	89

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	29.3
Vehicles Entered	2185
Vehicles Exited	2186
Hourly Exit Rate	2186

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	29.5	33.7	14.8	23.8	24.9	33.0	14.6	36.9	15.7	19.3
Vehicles Entered	0	86	33	0	223	0	377	0	436	1157
Vehicles Exited	8	49	63	77	145	42	335	47	386	1153
Hourly Exit Rate	8	49	63	77	145	42	335	47	386	1153

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	32.9	23.2	12.3	39.6	29.8	18.6	33.7	16.3	8.8	38.4	27.5	6.3
Vehicles Entered	0	266	129	0	241	66	0	380	0	0	497	0
Vehicles Exited	115	142	139	22	177	108	97	218	64	61	265	171
Hourly Exit Rate	115	142	139	22	177	108	97	218	64	61	265	171

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	22.2
Vehicles Entered	1579
Vehicles Exited	1578
Hourly Exit Rate	1578

Total Network Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	74.2
Vehicles Entered	7198
Vehicles Exited	7168
Hourly Exit Rate	7168
Input Volume	28411
% of Volume	25

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	196	198	90	160	352	340	164	261	275	70	125
Average Queue (ft)	84	94	85	57	126	164	173	93	104	117	37	63
95th Queue (ft)	128	172	165	105	187	308	304	161	212	224	88	131
Link Distance (ft)		2012	2012			1213	1213		694	694		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	16	6	15	2	14	13		4	5	32	4	2
Queuing Penalty (veh)	25	9	25	3	41	23		9	7	33	9	6

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	294	351	120
Average Queue (ft)	160	182	105
95th Queue (ft)	251	298	148
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	25	22	9
Queuing Penalty (veh)	15	65	27

Intersection: 2: Heacock St & New Project Access

Movement	SB	SB
Directions Served	LT	T
Maximum Queue (ft)	152	161
Average Queue (ft)	25	29
95th Queue (ft)	133	153
Link Distance (ft)	694	694
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	73	256	127	106	32	124	277	284	76	119	519	545
Average Queue (ft)	30	114	50	44	9	79	122	130	36	19	335	357
95th Queue (ft)	65	233	120	87	26	134	249	248	87	71	644	656
Link Distance (ft)	2106	2106		357			350	350			592	592
Upstream Blk Time (%)							0	0			5	7
Queuing Penalty (veh)							1	0			17	23
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						5	9	25	1	0	45	
Queuing Penalty (veh)						18	11	16	2	1	9	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	62
Average Queue (ft)	16
95th Queue (ft)	47
Link Distance (ft)	592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	488	61	225	324	275	380	376
Average Queue (ft)	263	48	201	220	144	322	340
95th Queue (ft)	415	64	254	370	268	416	418
Link Distance (ft)	1034			257	257	350	350
Upstream Blk Time (%)				11	1	11	20
Queuing Penalty (veh)				59	3	65	116
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	55	14	22	2			
Queuing Penalty (veh)	93	47	76	6			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	211	180	315	393	365	163	208	251	223
Average Queue (ft)	115	59	176	242	158	55	117	100	93
95th Queue (ft)	215	157	285	368	308	118	191	208	201
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								1	0
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							1	1	
Queuing Penalty (veh)							4	2	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	24
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	255
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	NB	SB
Directions Served	L	LTR	R
Maximum Queue (ft)	21	22	26
Average Queue (ft)	2	2	6
95th Queue (ft)	11	12	24
Link Distance (ft)		157	573
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	180		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	35	28
Average Queue (ft)	2	5
95th Queue (ft)	16	22
Link Distance (ft)	284	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	12	31
Average Queue (ft)	1	9
95th Queue (ft)	8	32
Link Distance (ft)	542	236
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hemlock Ave & West Access

Movement	SB
Directions Served	R
Maximum Queue (ft)	9
Average Queue (ft)	0
95th Queue (ft)	6
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	TR	T	TR	L	TR
Maximum Queue (ft)	105	174	181	357	366	64	164
Average Queue (ft)	46	69	89	210	228	46	47
95th Queue (ft)	92	141	156	330	345	76	117
Link Distance (ft)		1213	1213	1261	1261		1507
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150					40	
Storage Blk Time (%)	0	1				17	4
Queuing Penalty (veh)	0	0				15	5

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	119	206	245	124	318	329	133	229	75	104	361	75
Average Queue (ft)	34	95	122	85	167	182	85	81	33	74	122	42
95th Queue (ft)	87	178	212	147	271	284	137	173	77	118	260	86
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	0	10		5	20		6	19	1	16	26	2
Queuing Penalty (veh)	0	4		20	24		13	39	3	44	51	6

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	43	56	94	104	178	168	273	124	303
Average Queue (ft)	6	32	33	51	78	39	104	42	123
95th Queue (ft)	27	55	72	97	141	101	216	95	233
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)				2	10		4	1	11
Queuing Penalty (veh)				2	8		2	2	6

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	112	168	117	93	155	141	162	199	112	114	308	85
Average Queue (ft)	63	64	43	20	85	50	68	85	29	57	129	63
95th Queue (ft)	111	128	88	56	139	103	123	158	78	111	246	109
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	7	2			5		0	3	0	1	19	4
Queuing Penalty (veh)	6	3			1		1	6	0	5	44	13

Network Summary

Network wide Queuing Penalty: 1190

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	49.9	106.0	105.8	11.7	90.1	92.1	33.6	51.0	30.5	39.9	4.2	46.4
Vehicles Entered	0	632	293	0	0	252	264	0	437	490	0	0
Vehicles Exited	238	227	264	173	102	168	234	186	298	282	168	70
Hourly Exit Rate	238	227	264	173	102	168	234	186	298	282	168	70

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				12.8
Total Del/Veh (s)	161.6	168.1	9.0	73.2
Vehicles Entered	531	330	0	3228
Vehicles Exited	278	268	197	3154
Hourly Exit Rate	278	268	197	3154

2: Heacock St & New Project Access Performance by lane

Lane	NB	NB	SB	SB	SB	All
Movements Served	T	TR	LT	T	T	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	3.3	3.5	106.7	123.2	119.9	54.9
Vehicles Entered	487	482	334	269	218	1790
Vehicles Exited	460	513	335	316	137	1762
Hourly Exit Rate	460	513	335	316	137	1762

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	231.7	239.7	1085.0	308.0	7.3	56.3	47.1	49.9	0.9	57.2	228.1	247.6
Vehicles Entered	238	139	0	82	0	0	520	651	0	0	344	322
Vehicles Exited	59	264	28	32	11	163	453	459	96	25	351	338
Hourly Exit Rate	59	264	28	32	11	163	453	459	96	25	351	338

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		12.8
Total Del/Veh (s)	143.6	156.4
Vehicles Entered	140	2437
Vehicles Exited	48	2328
Hourly Exit Rate	48	2328

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								26.8
Total Del/Veh (s)	137.0	10.7	71.1	38.2	31.9	72.4	74.5	63.1
Vehicles Entered	477	0	0	665	660	449	578	2829
Vehicles Exited	301	163	314	486	526	518	511	2819
Hourly Exit Rate	301	163	314	486	526	518	511	2819

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										246.6
Total Del/Veh (s)	310.3	209.9	39.5	183.8	153.0	143.2	75.8	24.0	24.0	117.4
Vehicles Entered	270	188	391	454	395	402	0	693	316	3108
Vehicles Exited	215	186	420	450	349	438	135	463	405	3061
Hourly Exit Rate	215	186	420	450	349	438	135	463	405	3061

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	EB	WB	NB	All
Movements Served	T	T	TR	T	LTR	
Denied Del/Veh (s)						14.7
Total Del/Veh (s)	1.7	1.5	0.6	363.1	2.8	98.6
Vehicles Entered	115	27	94	95	23	354
Vehicles Exited	109	33	95	83	23	343
Hourly Exit Rate	109	33	95	83	23	343

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									7.0
Total Del/Veh (s)	2.0	0.2	0.2	2.3	307.3	467.3	46.1	790.8	149.8
Vehicles Entered	1	119	129	3	94	4	10	34	393
Vehicles Exited	41	79	128	3	82	2	8	12	355
Hourly Exit Rate	41	79	128	3	82	2	8	12	355

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.4	367.0	487.5	156.1
Vehicles Entered	215	121	23	359
Vehicles Exited	215	97	13	326
Hourly Exit Rate	215	97	13	326

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				5.3
Total Del/Veh (s)	0.5	198.4	218.8	95.0
Vehicles Entered	209	135	44	388
Vehicles Exited	209	112	38	358
Hourly Exit Rate	209	112	38	358

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.5	18.3	60.2	8.7
Vehicles Entered	221	153	7	380
Vehicles Exited	221	150	7	379
Hourly Exit Rate	221	150	7	379

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				2.2
Total Del/Veh (s)	0.1	34.3	62.0	15.8
Vehicles Entered	221	156	12	389
Vehicles Exited	221	149	10	381
Hourly Exit Rate	221	149	10	381

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	TR	T	TR	L	TR	
Denied Del/Veh (s)								0.2
Total Del/Veh (s)	162.4	33.5	17.8	22.2	21.9	17.8	8.1	31.5
Vehicles Entered	0	307	446	237	258	0	128	1375
Vehicles Exited	88	274	392	232	264	70	58	1378
Hourly Exit Rate	88	274	392	232	264	70	58	1378

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	41.2	28.1	29.7	39.1	26.3	23.2	39.4	30.0	4.9	38.7	27.7	3.2
Vehicles Entered	0	317	397	0	430	96	0	390	0	0	255	0
Vehicles Exited	100	281	334	104	189	232	57	162	172	60	123	68
Hourly Exit Rate	100	281	334	104	189	232	57	162	172	60	123	68

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	26.7
Vehicles Entered	1887
Vehicles Exited	1881
Hourly Exit Rate	1881

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.3
Total Del/Veh (s)	26.4	32.2	17.9	26.1	68.0	59.9	18.6	39.1	38.8	30.5
Vehicles Entered	0	171	51	0	214	0	574	0	328	1336
Vehicles Exited	31	80	109	108	93	43	520	16	306	1306
Hourly Exit Rate	31	80	109	108	93	43	520	16	306	1306

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	55.0	636.1	73.0	40.0	32.5	22.4	39.8	22.3	10.5	41.4	43.4	8.3
Vehicles Entered	0	353	486	0	293	105	0	449	0	0	457	0
Vehicles Exited	278	117	440	42	205	151	129	240	86	57	146	256
Hourly Exit Rate	278	117	440	42	205	151	129	240	86	57	146	256

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	212.9
Total Del/Veh (s)	79.4
Vehicles Entered	2144
Vehicles Exited	2147
Hourly Exit Rate	2147

Total Network Performance

Denied Del/Veh (s)	176.1
Total Del/Veh (s)	212.5
Vehicles Entered	8021
Vehicles Exited	7623
Hourly Exit Rate	7623
Input Volume	35589
% of Volume	21

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	842	840	90	160	476	414	165	350	330	71	125
Average Queue (ft)	111	395	368	71	102	201	177	124	154	161	48	75
95th Queue (ft)	132	854	857	118	174	545	441	208	323	323	95	149
Link Distance (ft)		2012	2012			1213	1213		586	586		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	63	11	41	12	21	12		14	11	35	5	4
Queuing Penalty (veh)	153	27	81	28	36	13		55	28	72	21	13

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	855	897	120
Average Queue (ft)	421	434	93
95th Queue (ft)	1174	1186	163
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)	7	7	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			95
Storage Blk Time (%)	45	42	5
Queuing Penalty (veh)	37	95	15

Intersection: 2: Heacock St & New Project Access

Movement	SB	SB	SB
Directions Served	LT	T	T
Maximum Queue (ft)	536	541	519
Average Queue (ft)	305	310	271
95th Queue (ft)	722	723	690
Link Distance (ft)	586	586	586
Upstream Blk Time (%)	16	15	12
Queuing Penalty (veh)	48	46	38
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	943	1201	305	356	122	125	363	378	75	120	740	747
Average Queue (ft)	245	563	264	286	7	102	296	300	35	34	661	666
95th Queue (ft)	1090	1481	354	453	43	170	476	484	92	100	843	843
Link Distance (ft)	2106	2106		306			337	337			702	702
Upstream Blk Time (%)	3	4	28	80			16	17			44	51
Queuing Penalty (veh)	0	0	0	170			120	132			135	156
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)			28	0		28	27	44	0	1	78	
Queuing Penalty (veh)			32	0		166	61	53	2	3	20	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	733
Average Queue (ft)	433
95th Queue (ft)	954
Link Distance (ft)	702
Upstream Blk Time (%)	8
Queuing Penalty (veh)	23
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	731	59	225	321	311	376	376
Average Queue (ft)	421	45	219	283	220	360	365
95th Queue (ft)	854	74	246	354	377	388	380
Link Distance (ft)	1034			257	257	337	337
Upstream Blk Time (%)	11			39	17	44	48
Queuing Penalty (veh)	0			356	158	265	290
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	61	35	45	18			
Queuing Penalty (veh)	106	123	304	81			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	671	664	684	736	721	720	201	254	236
Average Queue (ft)	530	423	368	659	626	587	119	149	140
95th Queue (ft)	974	945	854	825	825	856	210	294	278
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)	50	25	13	59	22	27		12	12
Queuing Penalty (veh)	0	0	0	0	0	0		80	75
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							13	14	
Queuing Penalty (veh)							64	26	

Intersection: 6: Hemlock Ave & New Project Access

Movement	WB	NB
Directions Served	T	LTR
Maximum Queue (ft)	296	34
Average Queue (ft)	220	16
95th Queue (ft)	397	38
Link Distance (ft)	272	238
Upstream Blk Time (%)	67	
Queuing Penalty (veh)	137	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	TR	LTR	LT	R
Maximum Queue (ft)	23	5	295	46	249	509
Average Queue (ft)	2	0	190	11	22	191
95th Queue (ft)	13	3	406	44	177	497
Link Distance (ft)		285	285	155	572	572
Upstream Blk Time (%)			57		1	6
Queuing Penalty (veh)			49		0	0
Storage Bay Dist (ft)	180					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	19	553	253
Average Queue (ft)	1	291	84
95th Queue (ft)	11	712	242
Link Distance (ft)	285	542	380
Upstream Blk Time (%)		39	
Queuing Penalty (veh)		65	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	29	544	232
Average Queue (ft)	1	187	87
95th Queue (ft)	13	603	229
Link Distance (ft)	542	622	236
Upstream Blk Time (%)		16	16
Queuing Penalty (veh)		26	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hemlock Ave & West Access

Movement	WB	SB
Directions Served	TR	R
Maximum Queue (ft)	71	45
Average Queue (ft)	21	6
95th Queue (ft)	90	25
Link Distance (ft)	106	328
Upstream Blk Time (%)	14	
Queuing Penalty (veh)	25	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Hemlock Ave & Nita Dr

Movement	WB	SB
Directions Served	TR	R
Maximum Queue (ft)	199	62
Average Queue (ft)	39	13
95th Queue (ft)	199	46
Link Distance (ft)	318	253
Upstream Blk Time (%)	6	
Queuing Penalty (veh)	9	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	TR	T	TR	L	TR
Maximum Queue (ft)	174	335	302	190	215	60	81
Average Queue (ft)	123	170	160	98	110	30	26
95th Queue (ft)	209	368	329	179	202	63	66
Link Distance (ft)		1213	1213	1261	1261		1507
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150					40	
Storage Blk Time (%)	32	3				9	2
Queuing Penalty (veh)	111	3				5	1

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	120	259	274	124	189	205	123	229	75	95	227	74
Average Queue (ft)	74	131	144	68	84	94	50	91	58	46	67	33
95th Queue (ft)	136	237	243	118	152	163	107	188	92	90	163	75
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	6	16		4	4		1	17	8	3	18	1
Queuing Penalty (veh)	16	16		7	4		2	47	20	7	25	2

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	62	108	130	104	340	168	488	98	466
Average Queue (ft)	22	47	50	61	92	54	160	17	153
95th Queue (ft)	54	86	96	107	333	129	386	60	524
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)							0		2
Queuing Penalty (veh)							2		6
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)		0		6	9	3	8	0	14
Queuing Penalty (veh)		0		6	9	18	4	0	2

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	767	734	118	185	173	163	232	130	114	323	85
Average Queue (ft)	114	732	681	37	100	71	91	107	47	49	124	71
95th Queue (ft)	115	778	876	90	163	141	157	202	118	103	257	110
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)		95	11									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	86	2		0	10		1	7	0	2	12	13
Queuing Penalty (veh)	248	8		0	5		4	16	1	10	40	29

Network Summary

Network wide Queuing Penalty: 4793

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	39.0	32.3	31.4	6.7	46.3	35.2	33.4	45.1	21.9	24.1	5.9	45.6
Vehicles Entered	0	437	183	0	0	466	390	0	321	393	0	0
Vehicles Exited	145	159	150	161	182	307	361	134	213	262	98	56
Hourly Exit Rate	145	159	150	161	182	307	361	134	213	262	98	56

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.5
Total Del/Veh (s)	31.2	37.7	10.9	29.5
Vehicles Entered	581	402	0	3174
Vehicles Exited	346	291	294	3160
Hourly Exit Rate	346	291	294	3160

2: Heacock St & New Project Access Performance by lane

Lane	WB	NB	NB	SB	SB	All
Movements Served	LR	T	TR	LT	T	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	5.3	2.3	2.2	3.5	2.7	2.7
Vehicles Entered	10	352	382	456	524	1724
Vehicles Exited	9	331	402	383	591	1715
Hourly Exit Rate	9	331	402	383	591	1715

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	33.0	29.9	76.1	8.4	3.8	35.2	19.4	18.9	1.2	38.2	43.8	51.0
Vehicles Entered	157	85	0	273	0	0	403	487	0	0	397	547
Vehicles Exited	42	201	52	215	7	125	319	368	83	18	454	476
Hourly Exit Rate	42	201	52	215	7	125	319	368	83	18	454	476

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		0.2
Total Del/Veh (s)	3.6	31.4
Vehicles Entered	55	2406
Vehicles Exited	54	2415
Hourly Exit Rate	54	2415

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.6
Total Del/Veh (s)	53.2	3.2	46.7	21.1	15.7	45.7	49.7	37.9
Vehicles Entered	534	0	3	708	340	520	640	2743
Vehicles Exited	360	178	337	367	342	581	578	2743
Hourly Exit Rate	360	178	337	367	342	581	578	2743

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	45.2	25.5	24.9	35.7	18.4	7.6	42.1	8.6	7.7	21.6
Vehicles Entered	210	65	494	597	175	199	0	784	405	2929
Vehicles Exited	187	66	520	515	238	216	176	541	472	2929
Hourly Exit Rate	187	66	520	515	238	216	176	541	472	2929

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	WB	WB	NB	All
Movements Served	LT	TR	LT	TR	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	1.5	0.6	0.2	0.2	1.9	0.5
Vehicles Entered	73	80	177	103	1	434
Vehicles Exited	72	81	183	97	1	434
Hourly Exit Rate	72	81	183	97	1	434

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									0.1
Total Del/Veh (s)	2.1	0.5	0.2	1.7	0.3	7.1	6.7	2.6	1.1
Vehicles Entered	55	185	107	4	201	30	4	54	641
Vehicles Exited	95	143	108	4	201	30	4	54	640
Hourly Exit Rate	95	143	108	4	201	30	4	54	640

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.6	0.4	2.7	0.5
Vehicles Entered	217	202	5	424
Vehicles Exited	217	203	5	425
Hourly Exit Rate	217	203	5	425

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	1.8	0.8	4.3	1.8
Vehicles Entered	199	186	73	459
Vehicles Exited	198	186	74	458
Hourly Exit Rate	198	186	74	458

10: West Access/West Access & Hemlock Ave Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	0.5	0.7	3.3	5.1	1.0
Vehicles Entered	129	230	17	21	397
Vehicles Exited	129	230	17	21	397
Hourly Exit Rate	129	230	17	21	397

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.2	1.6	2.7	0.9
Vehicles Entered	155	153	7	315
Vehicles Exited	155	154	7	316
Hourly Exit Rate	155	154	7	316

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	LT	TR	LTR	L	TR	
Denied Del/Veh (s)									0.3
Total Del/Veh (s)	58.4	18.7	17.8	28.6	30.2	8.3	14.4	17.7	25.3
Vehicles Entered	0	222	268	471	474	15	0	252	1702
Vehicles Exited	50	182	259	460	491	15	155	94	1705
Hourly Exit Rate	50	182	259	460	491	15	155	94	1705

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	48.4	26.1	27.0	44.2	29.0	29.9	40.4	32.2	3.4	40.4	31.0	5.2
Vehicles Entered	0	283	321	0	656	243	0	350	0	0	359	0
Vehicles Exited	40	242	327	116	369	419	134	149	67	100	166	94
Hourly Exit Rate	40	242	327	116	369	419	134	149	67	100	166	94

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	29.5
Vehicles Entered	2211
Vehicles Exited	2223
Hourly Exit Rate	2223

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)		14.7	14.0	25.9	23.7	33.2	13.2	35.4	13.5	17.1
Vehicles Entered	0	121	33	0	212	0	387	0	438	1189
Vehicles Exited	0	101	54	73	138	41	347	45	395	1193
Hourly Exit Rate	0	101	54	73	138	41	347	45	395	1193

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	32.4	23.3	12.5	38.3	29.9	17.4	35.7	18.4	10.6	39.0	31.2	6.6
Vehicles Entered	0	272	142	0	242	68	0	384	0	0	500	0
Vehicles Exited	119	146	148	24	180	107	102	221	63	63	268	167
Hourly Exit Rate	119	146	148	24	180	107	102	221	63	63	268	167

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	23.5
Vehicles Entered	1607
Vehicles Exited	1607
Hourly Exit Rate	1607

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	66.5
Vehicles Entered	7702
Vehicles Exited	7715
Hourly Exit Rate	7715
Input Volume	29889
% of Volume	26

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	210	178	90	160	291	297	164	258	231	70	125
Average Queue (ft)	84	93	79	59	123	158	165	94	94	108	39	58
95th Queue (ft)	129	173	151	106	187	277	273	163	197	197	90	124
Link Distance (ft)		2012	2012			1213	1213		694	694		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	15	6	16	2	14	12		5	2	30	4	3
Queuing Penalty (veh)	24	9	25	4	43	22		12	3	31	11	8

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	292	358	120
Average Queue (ft)	161	178	108
95th Queue (ft)	249	291	144
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	25	20	10
Queuing Penalty (veh)	15	58	33

Intersection: 2: Heacock St & New Project Access

Movement	WB	SB	SB
Directions Served	LR	LT	T
Maximum Queue (ft)	31	24	57
Average Queue (ft)	8	1	3
95th Queue (ft)	30	22	42
Link Distance (ft)	461	694	694
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	85	228	158	101	20	124	320	321	75	119	501	524
Average Queue (ft)	29	92	46	38	3	80	131	141	35	22	246	276
95th Queue (ft)	66	188	119	79	14	142	268	266	88	76	486	510
Link Distance (ft)	2106	2106		357			350	350			592	592
Upstream Blk Time (%)							0	0			0	1
Queuing Penalty (veh)							1	0			1	2
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						7	10	25	0	0	36	
Queuing Penalty (veh)						24	12	21	2	1	7	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	155
Average Queue (ft)	19
95th Queue (ft)	80
Link Distance (ft)	592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	542	58	225	321	268	390	378
Average Queue (ft)	280	48	205	227	146	317	336
95th Queue (ft)	460	65	260	373	266	422	415
Link Distance (ft)	1034			257	257	350	350
Upstream Blk Time (%)				12	0	11	16
Queuing Penalty (veh)				62	2	64	94
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	58	13	23	3			
Queuing Penalty (veh)	103	46	82	9			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	253	207	437	460	362	172	199	242	215
Average Queue (ft)	124	53	193	241	154	54	106	87	77
95th Queue (ft)	212	148	349	408	309	129	175	188	173
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							0	1	
Queuing Penalty (veh)							2	1	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	17
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	255
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	TR	LTR	LT	R
Maximum Queue (ft)	45	10	3	46	28	54
Average Queue (ft)	12	0	0	14	3	24
95th Queue (ft)	34	5	2	36	17	42
Link Distance (ft)		284	284	157	573	573
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	180					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	44	28
Average Queue (ft)	3	4
95th Queue (ft)	21	21
Link Distance (ft)	284	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	69	57
Average Queue (ft)	14	30
95th Queue (ft)	47	52
Link Distance (ft)	542	236
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: West Access/West Access & Hemlock Ave

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	41	34	28
Average Queue (ft)	3	12	12
95th Queue (ft)	22	37	31
Link Distance (ft)	105	235	328
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	144	174	198	352	373	35	64	211
Average Queue (ft)	48	77	94	213	233	7	50	62
95th Queue (ft)	102	150	168	341	361	29	75	153
Link Distance (ft)		1213	1213	1261	1261	182		1507
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150						40	
Storage Blk Time (%)	0	1					22	5
Queuing Penalty (veh)	0	0					19	7

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	120	201	239	124	292	313	134	233	75	105	294	75
Average Queue (ft)	40	102	128	88	172	185	89	95	41	72	106	47
95th Queue (ft)	102	182	213	145	268	280	147	196	91	118	223	91
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	1	11		7	20		8	24	1	14	24	3
Queuing Penalty (veh)	1	4		23	24		18	49	3	38	47	10

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	6	67	71	105	187	144	244	124	226
Average Queue (ft)	0	31	27	49	67	38	99	43	117
95th Queue (ft)	4	59	59	96	130	90	201	100	209
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)				3	8		3	1	10
Queuing Penalty (veh)				4	6		1	2	5

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	110	178	126	124	168	136	132	187	130	114	334	85
Average Queue (ft)	66	66	47	23	86	46	68	91	35	61	156	62
95th Queue (ft)	111	139	96	70	145	102	116	162	91	117	293	114
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	7	2			6		0	5	0	2	24	5
Queuing Penalty (veh)	7	3			1		0	8	0	9	58	15

Network Summary

Network wide Queuing Penalty: 1197

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	51.9	176.8	73.5	3.7	48.5	36.2	33.3	60.4	38.7	34.1	4.0	47.5
Vehicles Entered	0	649	294	0	0	244	288	0	475	537	0	0
Vehicles Exited	253	186	304	194	107	185	237	225	298	332	163	77
Hourly Exit Rate	253	186	304	194	107	185	237	225	298	332	163	77

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.6
Total Del/Veh (s)	88.6	95.4	9.8	56.3
Vehicles Entered	576	363	0	3427
Vehicles Exited	315	291	224	3389
Hourly Exit Rate	315	291	224	3389

2: Heacock St & New Project Access Performance by lane

Lane	WB	NB	NB	SB	SB	SB	All
Movements Served	LR	T	TR	LT	T	T	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	11.5	3.4	3.3	70.4	74.0	72.9	35.3
Vehicles Entered	40	528	494	389	283	236	1969
Vehicles Exited	40	489	528	373	378	131	1938
Hourly Exit Rate	40	489	528	373	378	131	1938

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	527.5	509.2	643.4	122.0	3.9	54.2	45.7	50.2	1.5	58.2	172.8	188.1
Vehicles Entered	357	64	0	163	0	0	599	747	0	0	388	381
Vehicles Exited	50	255	59	91	7	178	501	479	190	42	402	388
Hourly Exit Rate	50	255	59	91	7	178	501	479	190	42	402	388

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		5.3
Total Del/Veh (s)	91.0	171.6
Vehicles Entered	136	2833
Vehicles Exited	53	2696
Hourly Exit Rate	53	2696

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								3.0
Total Del/Veh (s)	166.5	11.2	51.9	29.8	31.4	62.6	66.0	59.2
Vehicles Entered	580	0	0	721	738	526	631	3196
Vehicles Exited	345	227	335	553	566	587	573	3187
Hourly Exit Rate	345	227	335	553	566	587	573	3187

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										303.3
Total Del/Veh (s)	72.5	47.1	23.6	209.9	191.7	170.3	41.2	8.2	6.4	85.1
Vehicles Entered	617	407	109	364	409	391	0	785	362	3444
Vehicles Exited	288	284	546	432	326	408	222	483	439	3429
Hourly Exit Rate	288	284	546	432	326	408	222	483	439	3429

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	EB	WB	NB	All
Movements Served	LT	T	TR	TR	LTR	
Denied Del/Veh (s)						34.5
Total Del/Veh (s)	1.2	1.6	0.6	236.8	3.3	76.9
Vehicles Entered	162	45	139	169	27	541
Vehicles Exited	164	44	137	165	27	537
Hourly Exit Rate	164	44	137	165	27	537

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									541.1
Total Del/Veh (s)	4.7	0.6	0.6	13.7	253.3	1211.9	993.7	2054.8	178.8
Vehicles Entered	106	310	251	16	155	15	14	29	897
Vehicles Exited	238	182	247	15	151	14	8	15	869
Hourly Exit Rate	238	182	247	15	151	14	8	15	869

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	EB	WB	SB	All
Movements Served	LT	T	TR	LR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	4.1	5.3	355.2	849.6	165.7
Vehicles Entered	190	114	187	20	512
Vehicles Exited	186	117	172	11	487
Hourly Exit Rate	186	117	172	11	487

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				352.1
Total Del/Veh (s)	4.7	274.1	207.9	128.4
Vehicles Entered	298	178	140	615
Vehicles Exited	296	163	133	592
Hourly Exit Rate	296	163	133	592

10: West Access/West Access & Hemlock Ave Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					73.5
Total Del/Veh (s)	1.3	19.4	102.2	150.2	47.5
Vehicles Entered	181	317	119	105	720
Vehicles Exited	181	315	115	102	712
Hourly Exit Rate	181	315	115	102	712

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				7.8
Total Del/Veh (s)	0.6	68.0	155.1	28.1
Vehicles Entered	332	201	8	540
Vehicles Exited	332	197	9	538
Hourly Exit Rate	332	197	9	538

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	LT	TR	LTR	L	TR	
Denied Del/Veh (s)									0.2
Total Del/Veh (s)	163.8	29.5	19.2	31.2	23.8	13.0	17.4	7.9	31.5
Vehicles Entered	0	269	492	241	271	99	0	122	1494
Vehicles Exited	87	277	394	229	282	100	67	55	1492
Hourly Exit Rate	87	277	394	229	282	100	67	55	1492

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	44.2	28.8	33.4	47.3	40.0	25.1	40.7	33.4	4.2	39.7	31.7	3.0
Vehicles Entered	0	328	410	0	448	114	0	392	0	0	278	0
Vehicles Exited	96	302	340	129	191	238	56	162	174	66	134	79
Hourly Exit Rate	96	302	340	129	191	238	56	162	174	66	134	79

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	30.3
Vehicles Entered	1969
Vehicles Exited	1967
Hourly Exit Rate	1967

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.7
Total Del/Veh (s)	30.6	16.6	18.6	28.3	161.9	136.4	58.7	39.6	104.7	69.3
Vehicles Entered	0	232	98	0	215	0	544	0	362	1452
Vehicles Exited	52	153	125	101	109	52	481	19	330	1423
Hourly Exit Rate	52	153	125	101	109	52	481	19	330	1423

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	57.2	1037.4	311.9	43.4	29.4	30.4	40.9	52.8	9.0	43.5	62.8	7.9
Vehicles Entered	0	619	369	0	328	70	0	453	0	0	467	0
Vehicles Exited	260	147	486	49	161	187	132	230	87	68	153	245
Hourly Exit Rate	260	147	486	49	161	187	132	230	87	68	153	245

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	37.8
Total Del/Veh (s)	203.5
Vehicles Entered	2307
Vehicles Exited	2205
Hourly Exit Rate	2205

Total Network Performance

Denied Del/Veh (s)	221.1
Total Del/Veh (s)	235.4
Vehicles Entered	9570
Vehicles Exited	9115
Hourly Exit Rate	9115
Input Volume	41743
% of Volume	22

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	689	672	90	159	251	229	165	378	384	71	125
Average Queue (ft)	114	415	385	68	84	103	113	145	195	180	45	79
95th Queue (ft)	117	713	685	119	153	197	190	194	388	356	94	146
Link Distance (ft)		2012	2012			1213	1213		586	586		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	72	5	45	4	5	5		31	7	36	5	5
Queuing Penalty (veh)	181	12	94	9	8	5		123	18	75	18	16

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	652	663	120
Average Queue (ft)	302	311	101
95th Queue (ft)	908	904	155
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)	2	2	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			95
Storage Blk Time (%)	35	32	5
Queuing Penalty (veh)	29	71	15

Intersection: 2: Heacock St & New Project Access

Movement	WB	SB	SB	SB
Directions Served	LR	LT	T	T
Maximum Queue (ft)	57	408	408	389
Average Queue (ft)	25	231	233	209
95th Queue (ft)	53	664	663	623
Link Distance (ft)	602	586	586	586
Upstream Blk Time (%)		3	3	1
Queuing Penalty (veh)		9	8	2
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	1804	2131	306	377	28	125	367	383	75	120	708	713
Average Queue (ft)	756	1199	288	332	2	109	333	337	58	58	604	615
95th Queue (ft)	2333	2651	327	406	13	151	402	408	99	131	861	867
Link Distance (ft)	2940	2940		306			336	336			702	702
Upstream Blk Time (%)	3	3	52	89			16	18			29	35
Queuing Penalty (veh)	0	0	0	617			131	149			91	108
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)			52	2		28	30	48	2	2	71	
Queuing Penalty (veh)			68	5		163	68	118	12	9	35	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	603
Average Queue (ft)	319
95th Queue (ft)	853
Link Distance (ft)	702
Upstream Blk Time (%)	8
Queuing Penalty (veh)	25
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	1186	70	225	323	298	376	382
Average Queue (ft)	601	53	217	281	259	359	368
95th Queue (ft)	1192	64	264	330	325	379	379
Link Distance (ft)	2390			259	259	336	336
Upstream Blk Time (%)				22	15	37	46
Queuing Penalty (veh)				212	144	255	314
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	57	48	25	16			
Queuing Penalty (veh)	131	170	182	71			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	481	456	410	743	725	722	210	240	242
Average Queue (ft)	232	200	190	703	687	632	128	84	69
95th Queue (ft)	530	460	346	724	754	807	210	206	177
Link Distance (ft)	2919	2919	2919	684	684	684		259	259
Upstream Blk Time (%)				87	36	24		1	0
Queuing Penalty (veh)				0	0	0		6	0
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							4	0	
Queuing Penalty (veh)							18	1	

Intersection: 6: Hemlock Ave & New Project Access

Movement	WB	NB
Directions Served	TR	LTR
Maximum Queue (ft)	302	38
Average Queue (ft)	274	16
95th Queue (ft)	343	38
Link Distance (ft)	272	238
Upstream Blk Time (%)	84	
Queuing Penalty (veh)	579	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	TR	LTR	LT	R
Maximum Queue (ft)	121	5	8	67	313	172	476	592
Average Queue (ft)	32	0	0	8	277	154	410	547
95th Queue (ft)	91	4	5	40	390	183	824	722
Link Distance (ft)		272	272	295	295	157	572	572
Upstream Blk Time (%)					77	96	70	89
Queuing Penalty (veh)					133	0	0	0
Storage Bay Dist (ft)	180							
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	102	79	558	226
Average Queue (ft)	9	7	453	111
95th Queue (ft)	73	64	758	288
Link Distance (ft)	295	295	542	380
Upstream Blk Time (%)	0	0	62	3
Queuing Penalty (veh)	0	0	215	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	244	568	268
Average Queue (ft)	31	350	209
95th Queue (ft)	148	799	322
Link Distance (ft)	542	620	236
Upstream Blk Time (%)	0	32	74
Queuing Penalty (veh)	0	64	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: West Access/West Access & Hemlock Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	57	126	210	258
Average Queue (ft)	3	59	109	124
95th Queue (ft)	24	142	252	343
Link Distance (ft)	620	105	214	328
Upstream Blk Time (%)		30	29	20
Queuing Penalty (veh)		68	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Hemlock Ave & Nita Dr

Movement	WB	SB
Directions Served	TR	R
Maximum Queue (ft)	263	65
Average Queue (ft)	106	15
95th Queue (ft)	341	56
Link Distance (ft)	318	253
Upstream Blk Time (%)	19	
Queuing Penalty (veh)	37	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	174	374	374	225	243	102	61	96
Average Queue (ft)	125	175	164	118	121	42	31	26
95th Queue (ft)	210	350	313	205	216	88	63	64
Link Distance (ft)		1213	1213	1260	1260	1123		1507
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150						40	
Storage Blk Time (%)	34	4					8	2
Queuing Penalty (veh)	113	4					4	1

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	120	303	329	124	332	305	132	231	75	102	280	75
Average Queue (ft)	77	147	165	84	116	114	49	97	56	53	82	40
95th Queue (ft)	137	263	276	135	308	289	110	209	95	97	209	80
Link Distance (ft)		1260	1260		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	7	16		13	3		0	21	7	3	19	1
Queuing Penalty (veh)	19	16		23	4		2	59	18	7	27	2

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	103	112	173	105	598	170	894	110	971
Average Queue (ft)	36	48	54	61	183	84	328	25	342
95th Queue (ft)	80	92	119	118	565	185	955	84	1024
Link Distance (ft)		318	318		2337		1228		1353
Upstream Blk Time (%)							6		3
Queuing Penalty (veh)							40		11
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)	0	0		9	27	17	11		32
Queuing Penalty (veh)	0	0		10	28	91	8		6

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	2470	2474	117	152	159	163	550	130	114	513	85
Average Queue (ft)	113	1844	1811	40	79	93	97	165	47	56	162	68
95th Queue (ft)	124	2842	2834	87	130	146	167	490	121	116	449	113
Link Distance (ft)		2433	2433		2328	2328		913			1228	
Upstream Blk Time (%)		32	23					1				
Queuing Penalty (veh)		0	0					0				
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	85	6		0	3		2	13	0	5	14	12
Queuing Penalty (veh)	246	21		0	1		5	29	0	23	48	29

Network Summary

Network wide Queuing Penalty: 5786

General Plan (2035)

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	41.8	35.0	34.2	6.7	51.6	42.6	42.4	41.1	23.8	29.4	7.3	44.5
Vehicles Entered	0	481	200	0	0	552	440	0	320	401	0	0
Vehicles Exited	165	184	169	162	211	373	409	130	227	248	112	60
Hourly Exit Rate	165	184	169	162	211	373	409	130	227	248	112	60

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.5
Total Del/Veh (s)	33.1	42.2	10.1	33.2
Vehicles Entered	602	426	0	3421
Vehicles Exited	359	297	314	3419
Hourly Exit Rate	359	297	314	3419

2: Heacock St & New Project Access Performance by lane

Lane	NB	NB	SB	SB	All
Movements Served	T	TR	LT	T	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	2.2	2.2	3.6	2.8	2.7
Vehicles Entered	353	396	482	546	1778
Vehicles Exited	334	415	410	620	1778
Hourly Exit Rate	334	415	410	620	1778

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	29.5	27.7	50.7	24.6	5.1	33.4	17.6	17.3	1.2	40.4	39.4	47.4
Vehicles Entered	155	88	1	187	1	0	396	462	0	0	429	588
Vehicles Exited	44	201	66	99	22	110	322	363	72	17	490	514
Hourly Exit Rate	44	201	66	99	22	110	322	363	72	17	490	514

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		0.1
Total Del/Veh (s)	4.1	31.0
Vehicles Entered	45	2352
Vehicles Exited	44	2362
Hourly Exit Rate	44	2362

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.4
Total Del/Veh (s)	45.3	2.7	40.3	15.5	12.1	43.4	46.1	33.8
Vehicles Entered	483	0	3	698	280	549	663	2676
Vehicles Exited	306	176	301	365	314	599	610	2672
Hourly Exit Rate	306	176	301	365	314	599	610	2672

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	30.9	22.1	26.1	25.4	15.6	6.1	42.0	10.8	9.8	19.8
Vehicles Entered	227	69	514	542	149	164	1	778	387	2831
Vehicles Exited	208	64	536	487	194	172	175	523	470	2828
Hourly Exit Rate	208	64	536	487	194	172	175	523	470	2828

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	WB	WB	NB	All
Movements Served	LT	TR	LT	TR	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	2.0	0.6	0.1	0.2	2.3	0.6
Vehicles Entered	70	83	154	36	1	345
Vehicles Exited	64	90	155	35	1	345
Hourly Exit Rate	64	90	155	35	1	345

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	All
Movements Served	L	T	TR	L	TR	LTR	R	
Denied Del/Veh (s)								0.0
Total Del/Veh (s)	2.3	0.1	0.1	0.1	0.3	5.0	2.2	0.3
Vehicles Entered	0	67	85	1	183	1	5	342
Vehicles Exited	9	58	86	1	184	1	5	344
Hourly Exit Rate	9	58	86	1	184	1	5	344

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.5	0.5	2.6	0.5
Vehicles Entered	142	189	5	336
Vehicles Exited	142	188	5	335
Hourly Exit Rate	142	188	5	335

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.5	0.6	4.1	0.6
Vehicles Entered	126	209	9	344
Vehicles Exited	126	209	9	344
Hourly Exit Rate	126	209	9	344

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.3	0.1	2.0	0.2
Vehicles Entered	120	211	2	333
Vehicles Exited	120	211	2	333
Hourly Exit Rate	120	211	2	333

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.1	1.5	3.0	1.0
Vehicles Entered	119	207	7	333
Vehicles Exited	119	208	7	334
Hourly Exit Rate	119	208	7	334

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	TR	T	TR	L	TR	
Denied Del/Veh (s)								0.3
Total Del/Veh (s)	88.6	18.2	16.6	29.9	34.5	14.7	21.3	28.4
Vehicles Entered	0	243	295	518	575	0	284	1915
Vehicles Exited	72	190	278	541	551	172	111	1916
Hourly Exit Rate	72	190	278	541	551	172	111	1916

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	44.4	28.9	30.8	61.1	229.1	170.9	46.6	55.5	2.1	43.2	43.7	5.6
Vehicles Entered	0	296	350	0	853	380	0	554	0	0	447	0
Vehicles Exited	40	262	344	242	404	522	171	263	123	134	199	109
Hourly Exit Rate	40	262	344	242	404	522	171	263	123	134	199	109

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	93.5
Vehicles Entered	2879
Vehicles Exited	2813
Hourly Exit Rate	2813

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.4
Total Del/Veh (s)	32.3	33.4	18.3	23.6	26.1	37.1	41.9	37.0	22.0	30.5
Vehicles Entered	0	90	34	0	311	0	552	0	615	1602
Vehicles Exited	7	54	62	93	217	45	507	84	531	1601
Hourly Exit Rate	7	54	62	93	217	45	507	84	531	1601

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	40.0	28.2	18.5	40.5	31.3	22.2	45.3	35.2	11.5	44.8	56.2	5.8
Vehicles Entered	0	404	272	0	401	147	0	652	0	0	640	0
Vehicles Exited	98	277	301	35	283	227	166	368	118	90	402	150
Hourly Exit Rate	98	277	301	35	283	227	166	368	118	90	402	150

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	32.7
Vehicles Entered	2515
Vehicles Exited	2515
Hourly Exit Rate	2515

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	92.7
Vehicles Entered	8518
Vehicles Exited	8462
Hourly Exit Rate	8462
Input Volume	32688
% of Volume	26

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	243	233	90	160	429	441	164	232	245	70	125
Average Queue (ft)	92	117	101	63	142	237	237	95	109	134	42	63
95th Queue (ft)	133	209	192	111	188	421	408	168	200	226	91	132
Link Distance (ft)		2012	2012			1213	1213		694	694		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	23	10	20	2	22	19		3	4	33	6	2
Queuing Penalty (veh)	42	17	33	4	81	43		8	5	36	14	5

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	311	366	120
Average Queue (ft)	173	196	103
95th Queue (ft)	270	315	149
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	29	24	9
Queuing Penalty (veh)	18	74	31

Intersection: 2: Heacock St & New Project Access

Movement	SB	SB
Directions Served	LT	T
Maximum Queue (ft)	26	31
Average Queue (ft)	2	3
95th Queue (ft)	25	33
Link Distance (ft)	694	694
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	77	233	127	114	29	124	284	285	75	119	472	478
Average Queue (ft)	28	94	50	47	9	72	121	133	30	20	263	288
95th Queue (ft)	65	182	104	98	26	132	242	251	79	71	472	488
Link Distance (ft)	2106	2106		357			350	350			592	592
Upstream Blk Time (%)								0			1	1
Queuing Penalty (veh)								0			2	3
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						3	9	23	0	0	39	
Queuing Penalty (veh)						11	10	18	1	0	7	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	107
Average Queue (ft)	17
95th Queue (ft)	81
Link Distance (ft)	592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	390	60	225	314	250	379	382
Average Queue (ft)	229	49	179	170	108	320	339
95th Queue (ft)	354	65	258	318	209	424	420
Link Distance (ft)	1034			257	257	350	350
Upstream Blk Time (%)				3	0	8	13
Queuing Penalty (veh)				15	0	51	80
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	56	13	11	2			
Queuing Penalty (veh)	101	39	36	6			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	209	174	422	320	252	142	214	264	252
Average Queue (ft)	113	45	201	182	102	35	117	117	107
95th Queue (ft)	183	116	358	283	216	83	194	237	233
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								2	1
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							1	2	
Queuing Penalty (veh)							3	4	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	12
Average Queue (ft)	1
95th Queue (ft)	7
Link Distance (ft)	255
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	NB	SB
Directions Served	L	LTR	R
Maximum Queue (ft)	20	13	26
Average Queue (ft)	1	1	4
95th Queue (ft)	8	8	19
Link Distance (ft)		157	573
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	180		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	30	28
Average Queue (ft)	3	4
95th Queue (ft)	18	21
Link Distance (ft)	284	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	25	31
Average Queue (ft)	1	8
95th Queue (ft)	10	29
Link Distance (ft)	542	236
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hemlock Ave & West Access

Movement	SB
Directions Served	R
Maximum Queue (ft)	18
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	TR	T	TR	L	TR
Maximum Queue (ft)	147	200	207	382	428	64	246
Average Queue (ft)	72	77	95	257	281	52	77
95th Queue (ft)	138	173	175	386	414	73	184
Link Distance (ft)		1213	1213	1261	1261		1507
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150					40	
Storage Blk Time (%)	4	1				23	7
Queuing Penalty (veh)	10	0				25	11

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	119	258	294	124	1574	1558	134	539	75	105	378	75
Average Queue (ft)	34	114	142	123	908	893	114	234	47	87	162	51
95th Queue (ft)	85	204	246	137	1801	1761	162	437	95	125	318	97
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	0	13		66	23		21	36	1	24	33	4
Queuing Penalty (veh)	1	5		273	62		78	105	5	79	83	15

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	39	78	93	105	244	169	762	125	388
Average Queue (ft)	7	35	34	60	106	62	268	71	200
95th Queue (ft)	28	62	71	114	202	164	624	134	335
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)				4	16	0	25	2	25
Queuing Penalty (veh)				9	16	0	12	12	21

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	258	210	124	234	213	170	496	130	114	560	85
Average Queue (ft)	70	129	109	40	138	111	125	207	76	82	298	56
95th Queue (ft)	123	222	191	106	210	190	195	411	157	133	509	115
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	7	20		0	19		7	22	0	7	46	3
Queuing Penalty (veh)	15	20		0	8		36	67	2	41	118	12

Network Summary

Network wide Queuing Penalty: 1943

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	53.1	452.0	358.1	1.8	44.2	37.4	37.3	48.9	31.6	43.5	4.9	46.0
Vehicles Entered	0	770	456	0	0	354	343	0	478	579	0	0
Vehicles Exited	231	323	407	151	124	265	305	165	371	331	196	83
Hourly Exit Rate	231	323	407	151	124	265	305	165	371	331	196	83

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				6.8
Total Del/Veh (s)	32.2	33.0	11.4	116.6
Vehicles Entered	535	317	0	3835
Vehicles Exited	296	260	215	3723
Hourly Exit Rate	296	260	215	3723

2: Heacock St & New Project Access Performance by lane

Lane	NB	NB	SB	SB	SB	All
Movements Served	T	TR	LT	T	T	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	3.0	3.0	2.8	1.9	2.7	2.7
Vehicles Entered	535	565	363	277	191	1931
Vehicles Exited	502	602	319	465	47	1935
Hourly Exit Rate	502	602	319	465	47	1935

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	37.2	69.6	62.3	27.8	7.1	47.4	27.7	29.7	1.5	47.7	39.1	44.5
Vehicles Entered	296	187	1	220	0	0	554	726	0	0	339	476
Vehicles Exited	93	390	94	95	32	158	483	504	133	25	376	406
Hourly Exit Rate	93	390	94	95	32	158	483	504	133	25	376	406

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		0.1
Total Del/Veh (s)	5.3	38.8
Vehicles Entered	47	2846
Vehicles Exited	43	2830
Hourly Exit Rate	43	2830

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.3
Total Del/Veh (s)	53.2	6.9	48.3	17.5	13.6	40.2	44.3	32.0
Vehicles Entered	436	0	0	818	645	474	656	3028
Vehicles Exited	234	193	373	518	571	561	569	3019
Hourly Exit Rate	234	193	373	518	571	561	569	3019

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	68.8	33.4	14.0	53.9	31.3	19.1	46.3	13.8	12.3	31.0
Vehicles Entered	378	133	354	655	274	350	1	697	374	3216
Vehicles Exited	289	206	367	529	356	405	182	460	428	3221
Hourly Exit Rate	289	206	367	529	356	405	182	460	428	3221

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	EB	WB	NB	All
Movements Served	T	T	TR	T	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	1.9	1.9	0.6	0.3	2.9	1.0
Vehicles Entered	142	48	136	221	24	571
Vehicles Exited	130	54	141	221	24	571
Hourly Exit Rate	130	54	141	221	24	571

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									0.0
Total Del/Veh (s)	2.2	0.2	0.2	2.0	0.4	7.7	7.4	2.9	0.8
Vehicles Entered	1	140	196	5	178	5	5	38	568
Vehicles Exited	53	88	196	5	178	5	5	38	568
Hourly Exit Rate	53	88	196	5	178	5	5	38	568

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.4	0.5	5.0	0.6
Vehicles Entered	285	180	18	483
Vehicles Exited	285	181	18	483
Hourly Exit Rate	285	181	18	483

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.7	0.5	5.3	1.0
Vehicles Entered	282	175	39	496
Vehicles Exited	282	174	39	495
Hourly Exit Rate	282	174	39	495

10: Hemlock Ave & West Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.6	0.3	2.5	0.5
Vehicles Entered	283	191	10	484
Vehicles Exited	283	191	10	484
Hourly Exit Rate	283	191	10	484

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.1	1.4	2.8	0.7
Vehicles Entered	283	190	7	480
Vehicles Exited	283	190	7	480
Hourly Exit Rate	283	190	7	480

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	SB	SB	All
Movements Served	L	T	TR	T	TR	L	TR	
Denied Del/Veh (s)								1.5
Total Del/Veh (s)	216.0	122.8	49.6	24.3	25.8	18.7	11.5	61.7
Vehicles Entered	0	413	625	337	351	0	150	1875
Vehicles Exited	98	354	559	328	354	89	60	1843
Hourly Exit Rate	98	354	559	328	354	89	60	1843

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	49.2	39.4	43.3	41.7	28.1	27.5	44.1	40.0	5.1	43.4	30.7	3.8
Vehicles Entered	0	407	560	0	506	138	0	589	0	0	355	0
Vehicles Exited	111	423	439	86	257	304	108	259	222	73	187	95
Hourly Exit Rate	111	423	439	86	257	304	108	259	222	73	187	95

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	33.5
Vehicles Entered	2554
Vehicles Exited	2564
Hourly Exit Rate	2564

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	30.3	32.7	19.6	27.9	27.7	40.5	27.1	42.3	19.1	26.0
Vehicles Entered	0	209	75	0	286	0	654	0	381	1603
Vehicles Exited	45	97	143	93	193	60	588	32	351	1602
Hourly Exit Rate	45	97	143	93	193	60	588	32	351	1602

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	56.9	185.7	177.6	44.3	35.9	27.8	62.3	105.1	8.9	45.7	38.3	10.5
Vehicles Entered	0	614	521	0	521	223	0	790	0	0	491	0
Vehicles Exited	188	452	503	104	332	312	223	386	172	99	265	122
Hourly Exit Rate	188	452	503	104	332	312	223	386	172	99	265	122

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	166.0
Total Del/Veh (s)	90.2
Vehicles Entered	3162
Vehicles Exited	3157
Hourly Exit Rate	3157

Total Network Performance

Denied Del/Veh (s)	61.0
Total Del/Veh (s)	132.4
Vehicles Entered	9609
Vehicles Exited	9456
Hourly Exit Rate	9456
Input Volume	37764
% of Volume	25

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	2058	2053	90	160	299	287	165	356	372	70	125
Average Queue (ft)	112	1479	1455	61	101	144	160	125	184	208	50	74
95th Queue (ft)	129	2370	2333	121	174	263	268	194	333	360	96	135
Link Distance (ft)		2012	2012			1213	1213		586	586		
Upstream Blk Time (%)		20	16									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	66	18	67	1	5	14		7	16	44	7	5
Queuing Penalty (veh)	279	48	113	4	13	20		23	27	85	25	13

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	240	254	120
Average Queue (ft)	146	144	90
95th Queue (ft)	227	238	147
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	23	18	5
Queuing Penalty (veh)	18	38	13

Intersection: 2: Heacock St & New Project Access

Movement	SB
Directions Served	T
Maximum Queue (ft)	6
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	586
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	194	619	204	155	46	125	361	365	75	119	367	387
Average Queue (ft)	61	286	76	50	12	99	227	238	56	31	201	223
95th Queue (ft)	137	595	166	117	34	156	382	383	98	91	385	403
Link Distance (ft)	2106	2106		306			337	337			702	702
Upstream Blk Time (%)							2	3			0	0
Queuing Penalty (veh)							13	18			0	0
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						17	20	42	1	0	33	
Queuing Penalty (veh)						86	32	57	6	0	8	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	146
Average Queue (ft)	19
95th Queue (ft)	111
Link Distance (ft)	702
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	474	59	225	320	278	368	379
Average Queue (ft)	203	50	210	249	169	286	309
95th Queue (ft)	391	67	256	378	306	419	432
Link Distance (ft)	1034			257	257	337	337
Upstream Blk Time (%)	0			17	1	6	13
Queuing Penalty (veh)	0			125	10	34	75
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	55	28	29	3			
Queuing Penalty (veh)	103	70	160	11			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	434	385	223	606	544	312	214	285	271
Average Queue (ft)	235	178	106	318	248	137	135	134	123
95th Queue (ft)	424	362	187	539	464	283	222	274	250
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)				1	0			3	0
Queuing Penalty (veh)				0	0			16	2
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							5	3	
Queuing Penalty (veh)							25	6	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	35
Average Queue (ft)	15
95th Queue (ft)	36
Link Distance (ft)	238
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	TR	LTR	LT	R
Maximum Queue (ft)	32	21	3	23	30	41
Average Queue (ft)	6	1	0	3	4	16
95th Queue (ft)	24	11	2	15	21	35
Link Distance (ft)		285	285	155	572	572
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	180					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	32	32
Average Queue (ft)	2	14
95th Queue (ft)	21	37
Link Distance (ft)	285	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	48	49
Average Queue (ft)	4	23
95th Queue (ft)	23	46
Link Distance (ft)	542	236
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hemlock Ave & West Access

Movement	SB
Directions Served	R
Maximum Queue (ft)	24
Average Queue (ft)	6
95th Queue (ft)	23
Link Distance (ft)	328
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	TR	T	TR	L	TR
Maximum Queue (ft)	174	883	880	269	279	63	120
Average Queue (ft)	158	487	481	143	159	40	33
95th Queue (ft)	212	1043	1039	244	262	71	85
Link Distance (ft)		1213	1213	1261	1261		1507
Upstream Blk Time (%)		1	1				
Queuing Penalty (veh)		6	7				
Storage Bay Dist (ft)	150					40	
Storage Blk Time (%)	69	5				14	2
Queuing Penalty (veh)	342	6				9	2

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	120	440	444	124	219	228	134	375	75	104	272	75
Average Queue (ft)	86	230	240	70	116	131	88	176	64	59	115	45
95th Queue (ft)	145	401	412	129	187	201	148	317	94	111	220	88
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	12	31		2	11		5	32	11	9	29	2
Queuing Penalty (veh)	49	38		4	9		23	117	39	23	49	5

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	84	109	108	105	202	170	467	125	262
Average Queue (ft)	31	53	62	62	101	73	238	36	129
95th Queue (ft)	67	89	106	114	183	164	416	96	220
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)				7	15	0	23	0	14
Queuing Penalty (veh)				13	13	0	15	2	5

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	762	762	124	308	267	170	820	130	114	330	85
Average Queue (ft)	111	733	734	94	185	158	159	516	85	86	170	65
95th Queue (ft)	124	747	748	151	273	243	197	975	171	138	291	112
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)		76	77					10				
Queuing Penalty (veh)		0	0					0				
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	53	47		5	29		34	32	1	11	31	4
Queuing Penalty (veh)	254	110		14	29		194	131	6	40	70	15

Network Summary

Network wide Queuing Penalty: 3215

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	42.5	37.2	32.8	7.2	52.1	44.7	43.9	43.2	24.5	28.0	6.0	47.4
Vehicles Entered	0	478	193	0	0	540	428	0	316	375	0	0
Vehicles Exited	166	177	176	154	205	362	401	126	209	241	112	59
Hourly Exit Rate	166	177	176	154	205	362	401	126	209	241	112	59

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				0.5
Total Del/Veh (s)	33.1	40.0	10.3	33.8
Vehicles Entered	613	411	0	3352
Vehicles Exited	360	307	297	3353
Hourly Exit Rate	360	307	297	3353

2: Heacock St & New Project Access Performance by lane

Lane	WB	NB	NB	SB	SB	All
Movements Served	LR	T	TR	LT	T	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	4.5	2.4	2.3	11.8	10.4	7.5
Vehicles Entered	10	341	361	478	548	1737
Vehicles Exited	10	322	379	438	588	1738
Hourly Exit Rate	10	322	379	438	588	1738

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	34.7	33.8	65.7	9.0	5.6	33.5	17.9	18.1	1.4	36.1	65.0	71.9
Vehicles Entered	148	90	0	288	0	0	383	467	0	0	454	557
Vehicles Exited	45	190	61	214	11	106	307	340	96	14	490	500
Hourly Exit Rate	45	190	61	214	11	106	307	340	96	14	490	500

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		2.1
Total Del/Veh (s)	4.3	40.6
Vehicles Entered	44	2430
Vehicles Exited	43	2419
Hourly Exit Rate	43	2419

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								0.4
Total Del/Veh (s)	50.0	2.9	41.4	14.9	11.4	45.2	50.0	35.4
Vehicles Entered	485	0	2	669	291	539	648	2635
Vehicles Exited	295	190	305	345	311	596	588	2630
Hourly Exit Rate	295	190	305	345	311	596	588	2630

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										0.2
Total Del/Veh (s)	31.8	24.5	22.9	26.6	17.4	6.9	42.6	10.6	9.5	19.6
Vehicles Entered	230	73	502	508	154	171	1	768	368	2774
Vehicles Exited	209	73	527	458	194	179	170	511	452	2772
Hourly Exit Rate	209	73	527	458	194	179	170	511	452	2772

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	WB	WB	NB	All
Movements Served	LT	TR	LT	TR	LTR	
Denied Del/Veh (s)						0.0
Total Del/Veh (s)	1.5	0.6	0.2	0.3	3.5	0.5
Vehicles Entered	80	90	183	113	1	466
Vehicles Exited	81	89	192	103	1	466
Hourly Exit Rate	81	89	192	103	1	466

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									0.1
Total Del/Veh (s)	2.1	0.5	0.3	0.9	0.2	7.7	8.1	2.8	1.2
Vehicles Entered	63	195	115	4	210	32	4	59	682
Vehicles Exited	111	146	116	4	211	32	4	59	683
Hourly Exit Rate	111	146	116	4	211	32	4	59	683

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.6	0.4	3.0	0.5
Vehicles Entered	228	214	6	448
Vehicles Exited	227	214	6	447
Hourly Exit Rate	227	214	6	447

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	1.7	0.9	4.6	1.8
Vehicles Entered	210	204	68	482
Vehicles Exited	211	204	68	483
Hourly Exit Rate	211	204	68	483

10: West Access/West Access & Hemlock Ave Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	0.5	0.7	2.9	5.1	0.9
Vehicles Entered	139	253	16	16	425
Vehicles Exited	139	254	16	16	425
Hourly Exit Rate	139	254	16	16	425

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.2	1.5	3.0	0.9
Vehicles Entered	158	180	6	344
Vehicles Exited	157	179	6	342
Hourly Exit Rate	157	179	6	342

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	LT	TR	LTR	L	TR	
Denied Del/Veh (s)									0.3
Total Del/Veh (s)	89.2	19.2	17.6	29.2	34.0	8.2	15.8	19.1	28.4
Vehicles Entered	0	245	306	506	577	14	0	264	1913
Vehicles Exited	74	201	273	533	539	13	161	103	1897
Hourly Exit Rate	74	201	273	533	539	13	161	103	1897

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	49.0	28.9	31.0	63.0	322.3	224.7	48.7	56.5	2.7	43.4	46.5	6.2
Vehicles Entered	0	302	339	0	846	398	0	544	0	0	434	0
Vehicles Exited	34	270	342	251	385	525	165	253	124	126	190	116
Hourly Exit Rate	34	270	342	251	385	525	165	253	124	126	190	116

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	119.2
Vehicles Entered	2863
Vehicles Exited	2780
Hourly Exit Rate	2780

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)									0.1
Total Del/Veh (s)	16.8	18.2	22.7	24.5	33.6	28.7	35.3	22.3	25.1
Vehicles Entered	122	35	0	289	0	562	0	615	1623
Vehicles Exited	100	58	94	195	46	514	84	532	1623
Hourly Exit Rate	100	58	94	195	46	514	84	532	1623

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	44.5	29.8	19.4	43.3	31.6	22.9	44.3	33.0	10.7	47.7	68.3	6.4
Vehicles Entered	0	416	256	0	413	145	0	672	0	0	643	0
Vehicles Exited	102	279	290	40	289	231	174	375	125	92	420	133
Hourly Exit Rate	102	279	290	40	289	231	174	375	125	92	420	133

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	35.4
Vehicles Entered	2544
Vehicles Exited	2551
Hourly Exit Rate	2551

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	100.4
Vehicles Entered	8947
Vehicles Exited	8847
Hourly Exit Rate	8847
Input Volume	33934
% of Volume	26

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	254	235	90	160	428	446	159	189	221	70	125
Average Queue (ft)	92	121	104	63	137	229	230	86	93	118	46	62
95th Queue (ft)	135	224	194	113	189	402	402	153	175	211	94	125
Link Distance (ft)		2012	2012			1213	1213		694	694		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	24	8	21	3	24	22		3	3	32	5	1
Queuing Penalty (veh)	44	14	34	6	88	48		8	4	36	12	5

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	314	354	120
Average Queue (ft)	175	194	106
95th Queue (ft)	272	313	150
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	28	24	9
Queuing Penalty (veh)	18	77	30

Intersection: 2: Heacock St & New Project Access

Movement	WB	SB	SB
Directions Served	LR	LT	T
Maximum Queue (ft)	35	179	191
Average Queue (ft)	9	50	53
95th Queue (ft)	31	226	239
Link Distance (ft)	461	694	694
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	72	237	154	96	20	124	289	292	75	103	519	534
Average Queue (ft)	31	90	51	39	5	70	117	125	38	20	337	362
95th Queue (ft)	63	185	123	80	18	130	238	238	87	74	639	646
Link Distance (ft)	2106	2106		357			350	350			592	592
Upstream Blk Time (%)							0	0			8	11
Queuing Penalty (veh)							0	0			29	37
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)						3	9	24	1	0	44	
Queuing Penalty (veh)						10	10	24	2	0	7	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	103
Average Queue (ft)	14
95th Queue (ft)	59
Link Distance (ft)	592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	476	66	225	305	256	375	374
Average Queue (ft)	234	50	178	153	109	319	334
95th Queue (ft)	413	64	257	316	222	428	423
Link Distance (ft)	1034			257	257	350	350
Upstream Blk Time (%)				5	0	11	18
Queuing Penalty (veh)				23	1	64	106
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	55	14	12	1			
Queuing Penalty (veh)	104	43	42	4			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	210	170	343	335	264	142	213	261	254
Average Queue (ft)	114	52	186	182	103	41	123	116	103
95th Queue (ft)	183	121	313	304	218	94	209	241	229
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)								1	0
Queuing Penalty (veh)								4	2
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							1	2	
Queuing Penalty (veh)							4	4	

Intersection: 6: Hemlock Ave & New Project Access

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	23
Average Queue (ft)	1
95th Queue (ft)	11
Link Distance (ft)	255
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	TR	LTR	LT	R
Maximum Queue (ft)	53	5	3	54	33	51
Average Queue (ft)	13	0	0	17	4	24
95th Queue (ft)	37	4	2	41	19	41
Link Distance (ft)		284	284	157	573	573
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	180					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	49	28
Average Queue (ft)	6	5
95th Queue (ft)	29	22
Link Distance (ft)	284	380
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	58	4	55
Average Queue (ft)	17	0	30
95th Queue (ft)	47	3	51
Link Distance (ft)	542	620	236
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: West Access/West Access & Hemlock Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	6	48	34	29
Average Queue (ft)	0	5	13	9
95th Queue (ft)	4	27	37	28
Link Distance (ft)	620	105	235	328
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Hemlock Ave & Nita Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	253
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	172	198	203	428	434	44	64	203
Average Queue (ft)	79	86	98	252	275	7	51	70
95th Queue (ft)	155	172	181	390	422	31	76	158
Link Distance (ft)		1213	1213	1261	1261	182		1507
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150						40	
Storage Blk Time (%)	2	1					24	6
Queuing Penalty (veh)	6	1					26	10

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	119	263	284	124	1899	1866	134	477	75	105	409	75
Average Queue (ft)	36	129	155	124	1205	1183	114	228	48	84	165	48
95th Queue (ft)	94	225	258	128	2238	2196	160	444	95	122	346	90
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)					2	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	0	15		74	20		22	36	2	24	31	5
Queuing Penalty (veh)	1	6		303	54		83	102	9	78	78	16

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	76	84	105	276	169	490	125	441
Average Queue (ft)	34	32	57	94	55	222	73	192
95th Queue (ft)	62	65	107	190	142	421	137	350
Link Distance (ft)	318	318		2337		1227		1353
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			80		145		100	
Storage Blk Time (%)			3	12	0	20	2	23
Queuing Penalty (veh)			7	12	0	10	9	20

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	238	204	124	225	198	170	462	130	114	749	85
Average Queue (ft)	75	137	112	42	139	112	128	214	78	81	351	56
95th Queue (ft)	132	213	190	107	204	187	194	389	159	131	664	115
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	9	23		0	21		6	22	1	8	50	3
Queuing Penalty (veh)	20	23		0	8		31	67	4	42	127	14

Network Summary

Network wide Queuing Penalty: 2111

1: Heacock St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Movements Served	L	T	T	R	L	T	TR	L	T	T	R	L
Denied Del/Veh (s)												
Total Del/Veh (s)	53.9	500.1	395.6	2.8	46.7	36.1	34.7	56.8	25.1	32.9	3.5	44.7
Vehicles Entered	0	709	502	0	0	318	426	0	464	540	0	0
Vehicles Exited	230	317	405	150	141	269	326	164	334	331	176	75
Hourly Exit Rate	230	317	405	150	141	269	326	164	334	331	176	75

1: Heacock St & Ironwood Ave Performance by lane

Lane	SB	SB	SB	All
Movements Served	T	T	R	
Denied Del/Veh (s)				13.4
Total Del/Veh (s)	39.4	40.6	11.0	126.7
Vehicles Entered	519	310	0	3787
Vehicles Exited	287	249	210	3666
Hourly Exit Rate	287	249	210	3666

2: Heacock St & New Project Access Performance by lane

Lane	WB	NB	NB	SB	SB	SB	All
Movements Served	LR	T	TR	LT	T	T	
Denied Del/Veh (s)							0.0
Total Del/Veh (s)	9.9	3.3	3.2	15.7	13.0	23.7	8.5
Vehicles Entered	36	539	479	369	268	189	1881
Vehicles Exited	36	484	534	333	425	58	1870
Hourly Exit Rate	36	484	534	333	425	58	1870

3: Heacock St & Hemlock Ave Performance by lane

Lane	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Movements Served	L	TR	L	T	R	L	T	T	R	L	T	T
Denied Del/Veh (s)												
Total Del/Veh (s)	362.9	496.7	197.6	33.7	7.0	55.5	45.7	55.7	1.9	48.9	65.1	68.6
Vehicles Entered	303	184	0	521	0	0	560	765	0	0	348	436
Vehicles Exited	81	330	184	317	16	140	495	439	256	46	355	381
Hourly Exit Rate	81	330	184	317	16	140	495	439	256	46	355	381

3: Heacock St & Hemlock Ave Performance by lane

Lane	SB	All
Movements Served	R	
Denied Del/Veh (s)		4.2
Total Del/Veh (s)	13.9	123.2
Vehicles Entered	59	3175
Vehicles Exited	48	3087
Hourly Exit Rate	48	3087

4: Heacock St & SR 60 WB Ramp Performance by lane

Lane	WB	WB	NB	NB	NB	SB	SB	All
Movements Served	LT	R	L	T	T	T	TR	
Denied Del/Veh (s)								1.5
Total Del/Veh (s)	125.1	10.8	55.1	27.1	25.7	56.9	57.0	47.8
Vehicles Entered	486	0	0	723	707	502	635	3052
Vehicles Exited	234	242	343	521	564	550	578	3033
Hourly Exit Rate	234	242	343	521	564	550	578	3033

5: Heacock St & SR 60 EB Ramp Performance by lane

Lane	EB	EB	EB	NB	NB	NB	SB	SB	SB	All
Movements Served	L	LT	R	T	T	TR	L	T	T	
Denied Del/Veh (s)										24.7
Total Del/Veh (s)	111.4	72.5	17.8	149.5	131.8	113.9	42.9	13.2	10.7	75.2
Vehicles Entered	375	188	349	517	336	355	2	693	352	3168
Vehicles Exited	303	248	365	421	341	412	224	419	402	3135
Hourly Exit Rate	303	248	365	421	341	412	224	419	402	3135

6: Hemlock Ave & New Project Access Performance by lane

Lane	EB	EB	EB	WB	NB	All
Movements Served	T	T	TR	T	LTR	
Denied Del/Veh (s)						1.1
Total Del/Veh (s)	1.3	1.7	0.6	41.9	3.4	22.8
Vehicles Entered	203	60	190	538	22	1013
Vehicles Exited	201	63	190	530	22	1007
Hourly Exit Rate	201	63	190	530	22	1007

7: Davis St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	LTR	LT	R	
Denied Del/Veh (s)									165.2
Total Del/Veh (s)	6.0	0.9	0.7	5.0	35.1	252.0	151.4	280.2	67.3
Vehicles Entered	110	336	315	28	317	94	52	165	1415
Vehicles Exited	273	191	296	28	309	91	27	163	1378
Hourly Exit Rate	273	191	296	28	309	91	27	163	1378

8: Hemlock Ave & IHOP Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.8	28.9	82.9	16.1
Vehicles Entered	386	353	21	759
Vehicles Exited	387	343	20	750
Hourly Exit Rate	387	343	20	750

9: Hemlock Ave & Middle Access Performance by lane

Lane	EB	WB	SB	All
Movements Served	LT	TR	LR	
Denied Del/Veh (s)				11.8
Total Del/Veh (s)	2.9	11.6	22.5	11.8
Vehicles Entered	382	219	319	918
Vehicles Exited	382	217	318	917
Hourly Exit Rate	382	217	318	917

10: West Access/West Access & Hemlock Ave Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	1.4	1.8	6.0	9.7	3.1
Vehicles Entered	298	372	117	98	884
Vehicles Exited	299	371	117	98	884
Hourly Exit Rate	299	371	117	98	884

11: Hemlock Ave & Nita Dr Performance by lane

Lane	EB	WB	SB	All
Movements Served	T	TR	R	
Denied Del/Veh (s)				0.0
Total Del/Veh (s)	0.4	1.8	4.0	0.9
Vehicles Entered	444	249	8	701
Vehicles Exited	444	248	8	700
Hourly Exit Rate	444	248	8	700

12: Driveway/Davis St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	SB	SB	All
Movements Served	L	T	TR	LT	TR	LTR	L	TR	
Denied Del/Veh (s)									0.3
Total Del/Veh (s)	190.0	102.2	42.9	44.1	26.0	15.5	17.4	11.1	54.9
Vehicles Entered	0	411	606	357	356	93	0	142	1965
Vehicles Exited	94	371	540	296	416	94	83	60	1955
Hourly Exit Rate	94	371	540	296	416	94	83	60	1955

13: Indian St & Ironwood Ave Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	50.0	38.7	43.3	42.9	27.2	26.7	45.0	44.0	4.8	43.4	31.8	4.0
Vehicles Entered	0	430	553	0	523	148	0	601	0	0	361	0
Vehicles Exited	99	432	453	94	272	306	114	256	233	77	194	88
Hourly Exit Rate	99	432	453	94	272	306	114	256	233	77	194	88

13: Indian St & Ironwood Ave Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	33.8
Vehicles Entered	2613
Vehicles Exited	2618
Hourly Exit Rate	2618

14: Indian St & Hemlock Ave Performance by lane

Lane	EB	EB	EB	WB	WB	NB	NB	SB	SB	All
Movements Served	L	T	TR	L	TR	L	TR	L	TR	
Denied Del/Veh (s)										0.1
Total Del/Veh (s)	30.4	16.6	19.6	27.3	32.3	46.7	30.7	42.8	20.7	26.8
Vehicles Entered	0	311	130	0	297	0	664	0	403	1804
Vehicles Exited	66	200	176	86	211	68	588	31	370	1796
Hourly Exit Rate	66	200	176	86	211	68	588	31	370	1796

15: Indian St & Sunnymead Blvd Performance by lane

Lane	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Movements Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Denied Del/Veh (s)												
Total Del/Veh (s)	56.7	184.6	179.3	48.6	36.2	28.3	64.0	139.1	8.6	46.9	42.8	8.8
Vehicles Entered	0	607	524	0	528	223	0	833	0	0	492	0
Vehicles Exited	184	453	494	98	338	319	230	395	192	105	276	111
Hourly Exit Rate	184	453	494	98	338	319	230	395	192	105	276	111

15: Indian St & Sunnymead Blvd Performance by lane

Lane	All
Movements Served	
Denied Del/Veh (s)	151.2
Total Del/Veh (s)	94.6
Vehicles Entered	3208
Vehicles Exited	3195
Hourly Exit Rate	3195

Total Network Performance

Denied Del/Veh (s)	82.0
Total Del/Veh (s)	175.3
Vehicles Entered	11003
Vehicles Exited	10640
Hourly Exit Rate	10640
Input Volume	43914
% of Volume	24

Intersection: 1: Heacock St & Ironwood Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	115	2062	2050	90	160	334	308	164	269	281	71	125
Average Queue (ft)	113	1595	1574	59	106	149	161	117	113	125	39	72
95th Queue (ft)	120	2408	2394	117	180	278	273	182	239	243	92	135
Link Distance (ft)		2012	2012			1213	1213		586	586		
Upstream Blk Time (%)		39	34									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	90			65	135			140			45	100
Storage Blk Time (%)	68	16	67	2	6	13		12	6	45	4	2
Queuing Penalty (veh)	288	44	121	11	16	17		42	11	88	15	6

Intersection: 1: Heacock St & Ironwood Ave

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	361	383	120
Average Queue (ft)	159	161	95
95th Queue (ft)	295	313	150
Link Distance (ft)	1480	1480	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			95
Storage Blk Time (%)	27	20	6
Queuing Penalty (veh)	21	44	16

Intersection: 2: Heacock St & New Project Access

Movement	WB	SB	SB	SB
Directions Served	LR	LT	T	T
Maximum Queue (ft)	68	128	133	127
Average Queue (ft)	26	36	36	31
95th Queue (ft)	56	258	258	238
Link Distance (ft)	602	586	586	586
Upstream Blk Time (%)		2	1	1
Queuing Penalty (veh)		5	3	2
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Heacock St & Hemlock Ave

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	T	T
Maximum Queue (ft)	1896	1973	306	371	111	125	375	377	75	120	543	546
Average Queue (ft)	885	1402	276	297	8	98	321	333	65	55	284	299
95th Queue (ft)	2080	2357	350	464	54	157	416	403	97	125	544	551
Link Distance (ft)	2106	2106		306			337	337			702	702
Upstream Blk Time (%)	12	18	21	50			13	16			5	6
Queuing Penalty (veh)	0	0	0	355			89	116			14	16
Storage Bay Dist (ft)			360		200	100			50	95		
Storage Blk Time (%)			21	1		18	33	50	4	1	45	
Queuing Penalty (veh)			29	2		88	54	131	19	5	21	

Intersection: 3: Heacock St & Hemlock Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	181
Average Queue (ft)	55
95th Queue (ft)	313
Link Distance (ft)	702
Upstream Blk Time (%)	1
Queuing Penalty (veh)	2
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Heacock St & SR 60 WB Ramp

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	686	63	225	319	291	374	386
Average Queue (ft)	353	52	218	279	224	349	363
95th Queue (ft)	766	68	251	355	345	386	394
Link Distance (ft)	1034			257	257	337	337
Upstream Blk Time (%)	4			26	10	20	28
Queuing Penalty (veh)	0			202	77	132	187
Storage Bay Dist (ft)		30	200				
Storage Blk Time (%)	50	49	33	11			
Queuing Penalty (veh)	124	120	194	40			

Intersection: 5: Heacock St & SR 60 EB Ramp

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	575	530	338	724	710	659	212	277	255
Average Queue (ft)	330	268	132	549	507	437	133	110	96
95th Queue (ft)	680	624	361	851	856	848	218	264	227
Link Distance (ft)	742	742	742	685	685	685		257	257
Upstream Blk Time (%)	9	4	1	32	18	18		6	1
Queuing Penalty (veh)	0	0	0	0	0	0		34	5
Storage Bay Dist (ft)							190		
Storage Blk Time (%)							8	2	
Queuing Penalty (veh)							36	6	

Intersection: 6: Hemlock Ave & New Project Access

Movement	WB	NB
Directions Served	T	LTR
Maximum Queue (ft)	299	36
Average Queue (ft)	205	14
95th Queue (ft)	396	36
Link Distance (ft)	272	238
Upstream Blk Time (%)	33	
Queuing Penalty (veh)	236	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Davis St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	TR	LTR	LT	R
Maximum Queue (ft)	151	9	20	34	285	188	590	595
Average Queue (ft)	48	0	1	9	109	161	269	370
95th Queue (ft)	105	6	9	30	307	196	724	756
Link Distance (ft)		272	272	285	285	155	572	572
Upstream Blk Time (%)					15	85	39	45
Queuing Penalty (veh)					27	0	0	0
Storage Bay Dist (ft)	180							
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Intersection: 8: Hemlock Ave & IHOP Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	69	364	67
Average Queue (ft)	6	83	24
95th Queue (ft)	40	379	75
Link Distance (ft)	285	542	380
Upstream Blk Time (%)		6	
Queuing Penalty (veh)		22	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Hemlock Ave & Middle Access

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	87	177	226
Average Queue (ft)	34	24	105
95th Queue (ft)	76	172	217
Link Distance (ft)	542	620	236
Upstream Blk Time (%)			11
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: West Access/West Access & Hemlock Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	59	107	100	70
Average Queue (ft)	4	31	41	32
95th Queue (ft)	25	85	74	59
Link Distance (ft)	620	105	214	328
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Hemlock Ave & Nita Dr

Movement	WB	SB
Directions Served	TR	R
Maximum Queue (ft)	15	31
Average Queue (ft)	1	7
95th Queue (ft)	15	28
Link Distance (ft)	318	253
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Driveway/Davis St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	LT	TR	LTR	L	TR
Maximum Queue (ft)	174	688	705	299	316	92	63	116
Average Queue (ft)	149	425	425	177	182	42	39	31
95th Queue (ft)	219	913	903	289	294	87	69	80
Link Distance (ft)		1213	1213	1261	1261	182		1507
Upstream Blk Time (%)		0	0					
Queuing Penalty (veh)		1	2					
Storage Bay Dist (ft)	150						40	
Storage Blk Time (%)	54	8					11	3
Queuing Penalty (veh)	267	9					7	2

Intersection: 13: Indian St & Ironwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	120	438	444	122	223	225	134	391	75	105	300	75
Average Queue (ft)	81	234	254	73	119	132	96	186	63	64	119	49
95th Queue (ft)	144	412	434	137	193	202	158	350	94	114	222	92
Link Distance (ft)		1261	1261		2384	2384		1353			1508	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	95			100			110		50	80		50
Storage Blk Time (%)	8	31		5	10		7	32	11	9	31	2
Queuing Penalty (veh)	33	38		11	10		34	120	41	26	53	6

Intersection: 14: Indian St & Hemlock Ave

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	103	121	148	105	271	170	462	124	297
Average Queue (ft)	41	57	71	63	118	82	258	33	145
95th Queue (ft)	83	95	121	119	219	177	438	85	253
Link Distance (ft)		318	318		2337		1227		1353
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150			80		145		100	
Storage Blk Time (%)		0		4	22	0	26	0	19
Queuing Penalty (veh)		0		9	19	1	20	0	7

Intersection: 15: Indian St & Sunnymead Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	772	770	124	279	266	170	951	130	114	385	85
Average Queue (ft)	109	735	736	87	184	160	161	651	82	81	193	60
95th Queue (ft)	130	752	754	152	261	230	195	1114	174	132	343	112
Link Distance (ft)		715	715		1059	1059		913			1227	
Upstream Blk Time (%)		76	76					19				
Queuing Penalty (veh)		0	0					0				
Storage Bay Dist (ft)	90			100			145		105	90		60
Storage Blk Time (%)	50	47		5	31		37	32	2	13	34	2
Queuing Penalty (veh)	240	110		14	31		215	132	11	50	78	8

Network Summary

Network wide Queuing Penalty: 4736

Intersection Warrant Analysis

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	Heacock St/Project Access
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Project Access	North/South Street	Heacock St
File Name	Heacock St & Project Access.xhy	Major Street	North-South

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	775	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	0	0	0	0	1	0	1	0	0	1	0
Lane usage						R		TR			LT	
Vehicle Volume Averages (vph)	196	239	112	26	201	26	119	850	0	0	668	174
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐

1.t

7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☑
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 5:05 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	Heacock St/Project Access
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Project Access	North/South Street	Heacock St
File Name	Heacock St & Project Access.xhy	Major Street	North-South

Project Description *Festival at Moreno Valley*

Warrant 1

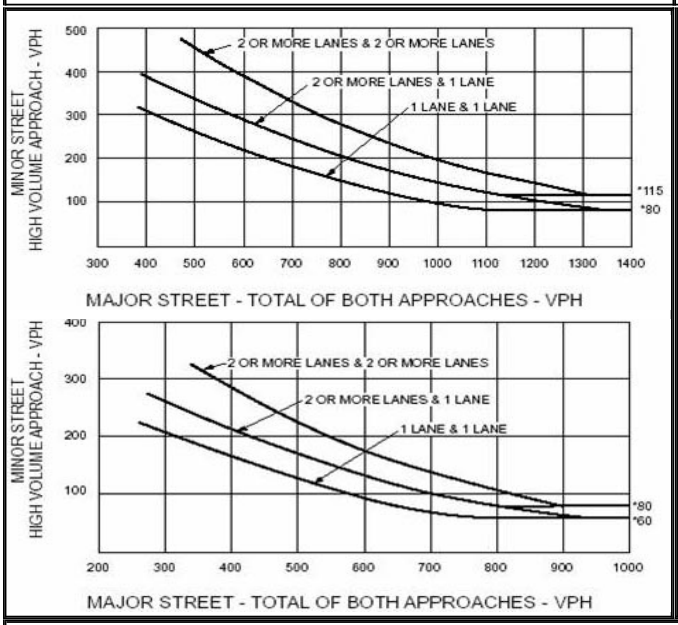
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

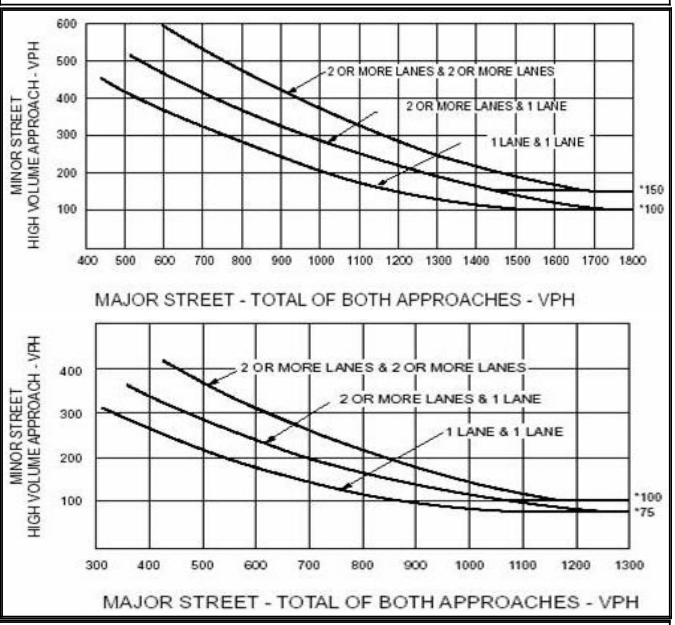
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 1 **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	1695	30	1725	No	No	No	No	No	No	No
08-09	1261	22	1283	No	No	No	No	No	No	No
09-10	1064	16	1080	No	No	No	No	No	No	No
10-11	1123	20	1143	No	No	No	No	No	No	No
11-12	1306	23	1329	No	No	No	No	No	No	No
12-13	1712	30	1742	No	No	No	No	No	No	No
13-14	1469	26	1495	No	No	No	No	No	No	No
14-15	1611	28	1639	No	No	No	No	No	No	No
15-16	2089	37	2126	No	No	No	No	No	No	No
16-17	2125	38	2163	No	No	No	No	No	No	No
17-18	1573	28	1601	No	No	No	No	No	No	No
18-19	1203	21	1224	No	No	No	No	No	No	No
Totals	18231	319	18550	0	0	0	0	0	0	0

HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 5:06 PM

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	Project Access/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Project Access (Int 6)
File Name	Project Access & Hemlock Ave.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	400	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	3	0	0	1	0	0	1	0	0	1	0
Lane usage		LTR			LTR			LTR			LTR	
Vehicle Volume Averages (vph)	0	310	14	0	522	0	0	0	18	0	0	0
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐

1.t

7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 5:18 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	Project Access/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Project Access (Int 6)
File Name	Project Access & Hemlock Ave.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

Warrant 1

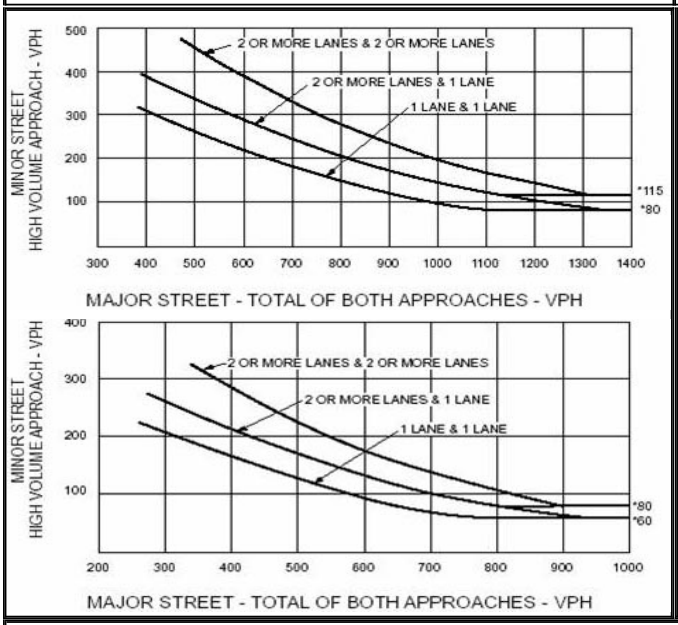
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

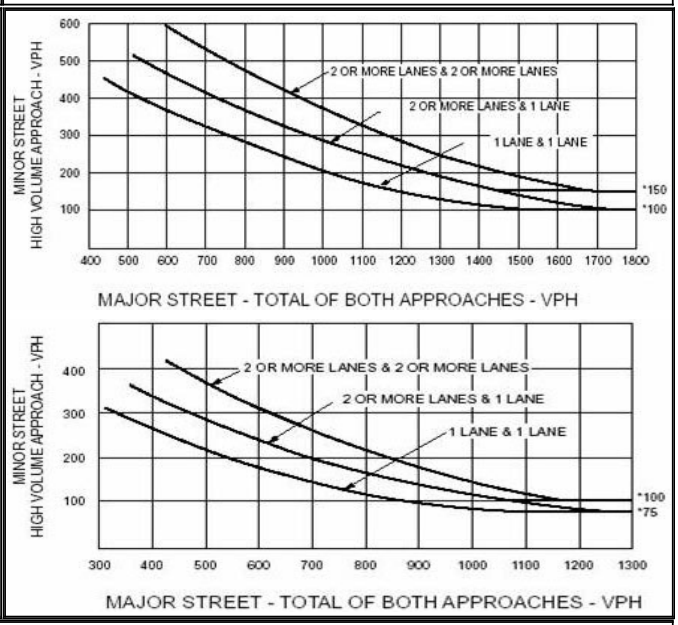
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	895	19	914	No	No	No	No	No	No	No
08-09	666	14	680	No	No	No	No	No	No	No
09-10	595	14	609	No	No	No	No	No	No	No
10-11	593	13	606	No	No	No	No	No	No	No
11-12	690	15	705	No	No	No	No	No	No	No
12-13	904	19	923	No	No	No	No	No	No	No
13-14	776	16	792	No	No	No	No	No	No	No
14-15	851	18	869	No	No	No	No	No	No	No
15-16	1103	23	1126	No	No	No	No	No	No	No
16-17	1135	24	1159	No	No	No	No	No	No	No
17-18	1122	24	1146	No	No	No	No	No	No	No
18-19	831	18	849	No	No	No	No	No	No	No
Totals	10161	217	10378	0	0	0	0	0	0	0

HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 5:17 PM

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	Davis Street/Hemlock Avenue
Agency/Co	City of Moreno Valley		
Date Performed	11/20/2017	Jurisdiction	Moreno Valley
Project ID	Festival at Moreno Valley	Units	U.S. Customary
East/West Street	Hemlock Avenue	Time Period Analyzed	PM Peak Hour
File Name	Hemlock Ave & Davis St.xhy	North/South Street	Davis Street
		Major Street	East-West

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	600	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	1	2	0	1	1	0	0	1	0	0	1	0
Lane usage	L	TR		L	TR			LTR			LTR	
Vehicle Volume Averages (vph)	196	239	112	20	201	26	119	1	17	27	0	174
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☑
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☑
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☑
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☑
Warrant 3: Peak Hour	☑
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☑
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐

1.t

7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☑
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 3:42 PM

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	Davis Street/Hemlock Avenue
Agency/Co	City of Moreno Valley		
Date Performed	11/20/2017	Jurisdiction	Moreno Valley
Project ID	Festival at Moreno Valley	Units	U.S. Customary
East/West Street	Hemlock Avenue	Time Period Analyzed	PM Peak Hour
File Name	Hemlock Ave & Davis St.xhy	North/South Street	Davis Street
		Major Street	East-West

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	600	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	1	2	0	1	1	0	0	1	0	0	1	0
Lane usage	L	TR		L	TR			LTR			LTR	
Vehicle Volume Averages (vph)	196	239	112	20	201	26	119	1	17	27	0	174
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☑
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☑
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☑
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☑
Warrant 3: Peak Hour	☑
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☑
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐

1.t

7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☑
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 3:42 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	Davis Street/Hemlock Avenue
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	11/20/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Avenue	North/South Street	Davis Street
File Name	Hemlock Ave & Davis St.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

Warrant 1

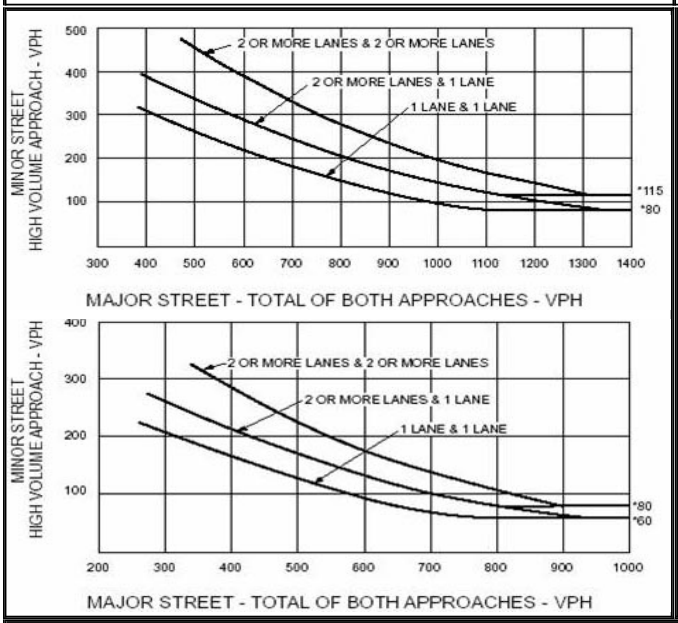
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

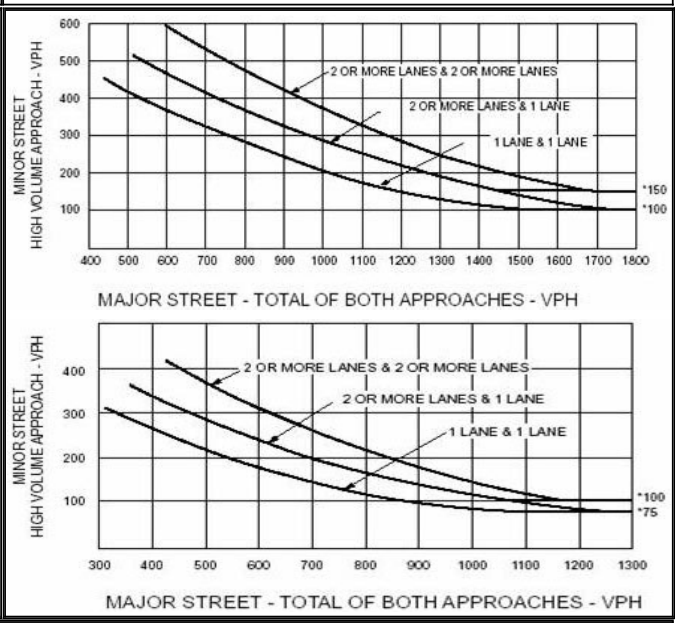
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	868	221	1240	Yes	Yes	No	Yes	Yes	No	No
08-09	646	164	922	Yes	Yes	No	No	No	No	No
09-10	467	119	667	No	No	No	No	No	No	No
10-11	577	147	824	No	Yes	No	No	No	No	No
11-12	670	170	956	Yes	Yes	No	No	No	No	No
12-13	877	223	1252	Yes	Yes	No	Yes	Yes	No	No
13-14	753	191	1074	Yes	Yes	No	Yes	No	No	No
14-15	825	209	1177	Yes	Yes	No	Yes	Yes	No	No
15-16	1070	272	1527	Yes	Yes	Yes	Yes	Yes	No	Yes
16-17	1101	277	1569	Yes	Yes	Yes	Yes	Yes	No	Yes
17-18	1089	277	1555	Yes	Yes	Yes	Yes	Yes	No	Yes
18-19	616	156	878	Yes	Yes	No	No	No	No	No
Totals	9559	2426	13641	10	11	3	7	6	0	3

HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 3:54 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	Davis Street/Hemlock Avenue
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	11/20/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Avenue	North/South Street	Davis Street
File Name	Hemlock Ave & Davis St.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

Warrant 1

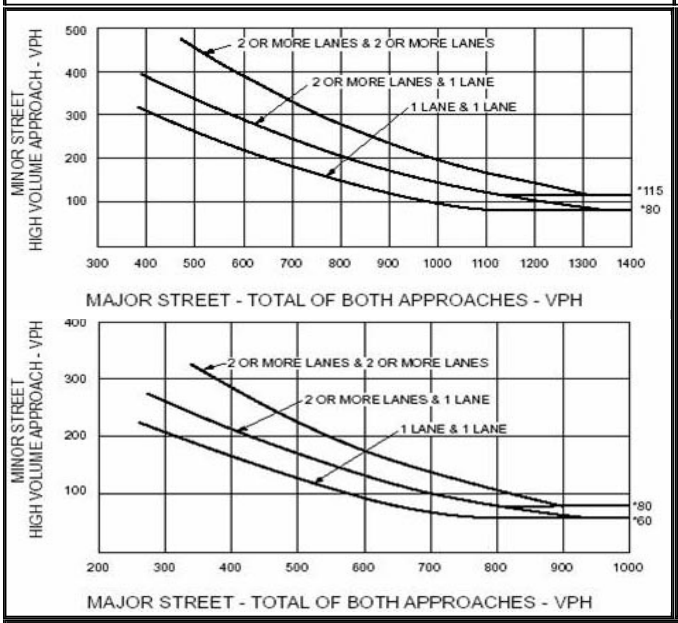
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

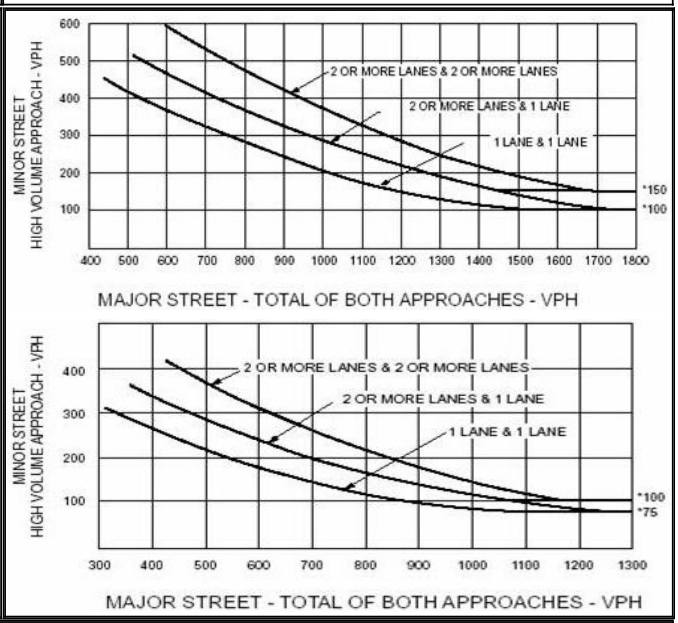
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	868	221	1240	Yes	Yes	No	Yes	Yes	No	No
08-09	646	164	922	Yes	Yes	No	No	No	No	No
09-10	467	119	667	No	No	No	No	No	No	No
10-11	577	147	824	No	Yes	No	No	No	No	No
11-12	670	170	956	Yes	Yes	No	No	No	No	No
12-13	877	223	1252	Yes	Yes	No	Yes	Yes	No	No
13-14	753	191	1074	Yes	Yes	No	Yes	No	No	No
14-15	825	209	1177	Yes	Yes	No	Yes	Yes	No	No
15-16	1070	272	1527	Yes	Yes	Yes	Yes	Yes	No	Yes
16-17	1101	277	1569	Yes	Yes	Yes	Yes	Yes	No	Yes
17-18	1089	277	1555	Yes	Yes	Yes	Yes	Yes	No	Yes
18-19	616	156	878	Yes	Yes	No	No	No	No	No
Totals	9559	2426	13641	10	11	3	7	6	0	3

HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 3:54 PM

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	Project Access/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Project Access (IHOP - Int 8)
File Name	8_Project Access & Hemlock.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	400	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	0	0	1	0	0	0	0	0	0	0
Lane usage		LT			TR						LR	
Vehicle Volume Averages (vph)	8	281	0	0	245	5	0	0	0	8	0	8
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐

1.t

7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 5:31 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	Project Access/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Project Access (IHOP - Int 8)
File Name	8_Project Access & Hemlock.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

Warrant 1

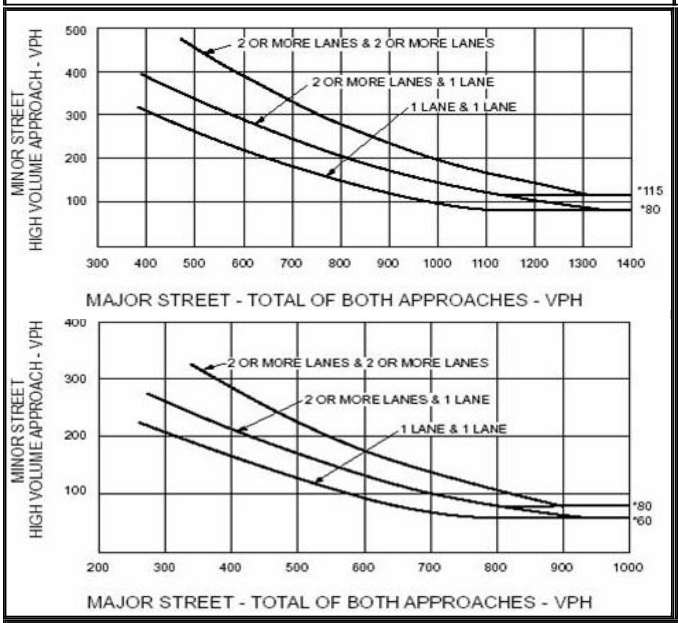
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

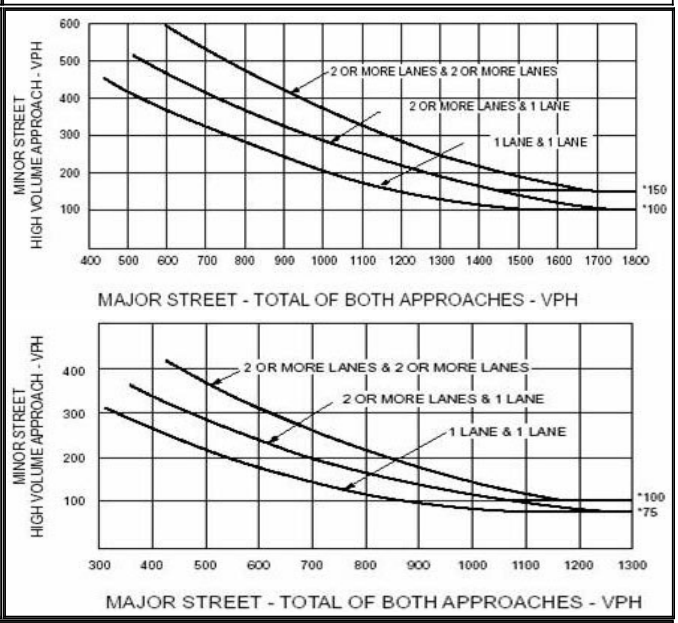
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 1 **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	578	18	596	No	No	No	No	No	No	No
08-09	431	12	443	No	No	No	No	No	No	No
09-10	311	10	321	No	No	No	No	No	No	No
10-11	384	12	396	No	No	No	No	No	No	No
11-12	446	14	460	No	No	No	No	No	No	No
12-13	584	18	602	No	No	No	No	No	No	No
13-14	501	16	517	No	No	No	No	No	No	No
14-15	550	16	566	No	No	No	No	No	No	No
15-16	714	22	736	No	No	No	No	No	No	No
16-17	734	22	756	No	No	No	No	No	No	No
17-18	726	16	742	No	No	No	No	No	No	No
18-19	538	16	554	No	No	No	No	No	No	No
Totals	6497	192	6689	0	0	0	0	0	0	0

HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 5:31 PM

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	MiddProject Access/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Middle Project Access (Int 9)
File Name	9_Middle Project Access & Hemlock.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	1700	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	0	0	1	0	0	0	0	0	0	0
Lane usage		LT			TR						LR	
Vehicle Volume Averages (vph)	151	136	0	0	88	75	0	0	0	75	0	164
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐

1.t

7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☑
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 8:25 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	MiddProject Access/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Middle Project Access (Int 9)
File Name	9_Middle Project Access & Hemlock.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

Warrant 1

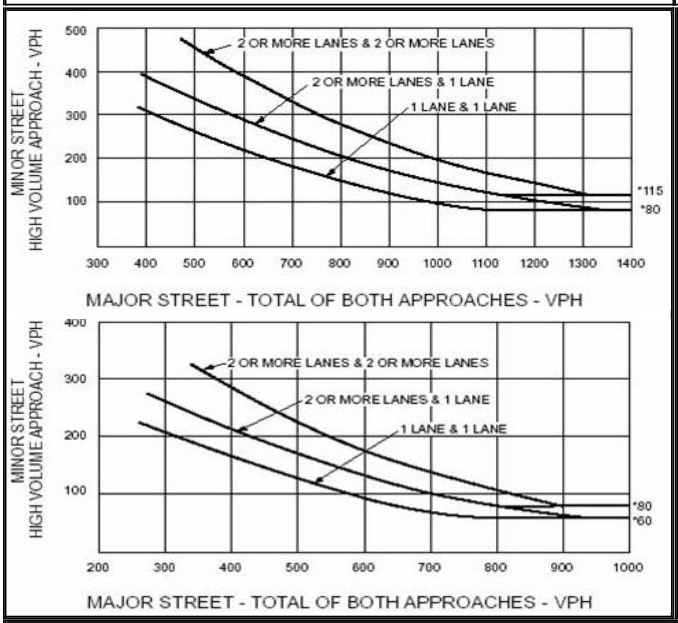
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

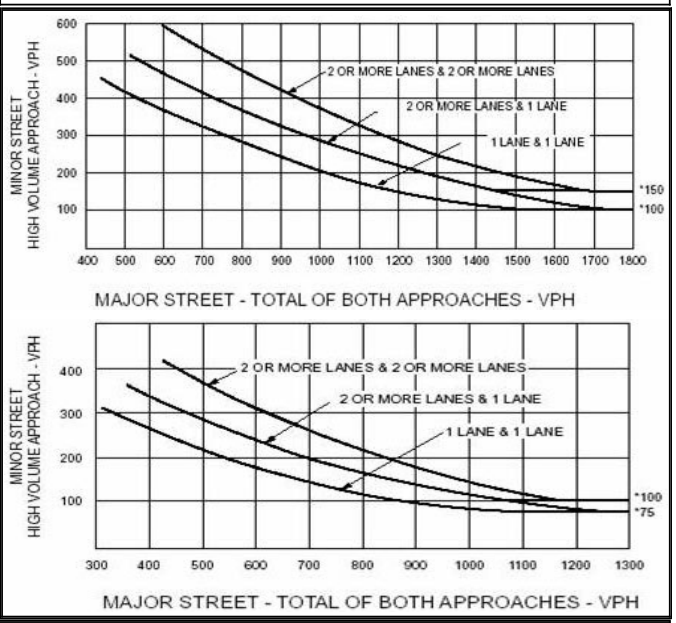
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 1 **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	466	256	722	No	Yes	No	No	No	No	No
08-09	346	191	537	No	No	No	No	No	No	No
09-10	251	138	389	No	No	No	No	No	No	No
10-11	309	170	479	No	No	No	No	No	No	No
11-12	432	198	630	No	Yes	No	No	No	No	No
12-13	470	259	729	No	Yes	No	No	No	No	No
13-14	404	222	626	No	Yes	No	No	No	No	No
14-15	443	243	686	No	Yes	No	No	No	No	No
15-16	574	316	890	Yes	Yes	No	No	Yes	No	No
16-17	590	325	915	Yes	Yes	No	No	Yes	No	No
17-18	703	322	1025	Yes	Yes	No	Yes	Yes	No	No
18-19	432	238	670	No	Yes	No	No	No	No	No
Totals	5420	2878	8298	3	9	0	1	3	0	0

HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 8:26 PM

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	West Access/Hemlock Avenue
Agency/Co	City of Moreno Valley		
Date Performed	12/4/2017	Jurisdiction	Moreno Valley
Project ID	Festival at Moreno Valley	Units	U.S. Customary
East/West Street	Hemlock Avenue	Time Period Analyzed	PM Peak Hour
File Name	10_West Project Access & Hemlock.xhy	North/South Street	West Project Access
		Major Street	East-West

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	500	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	0	0	1	0	0	1	0	0	1	0
Lane usage		LTR			LTR			LTR			LTR	
Vehicle Volume Averages (vph)	35	158	46	64	115	75	17	0	68	61	0	14
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐

1.t

7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 8:36 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	West Access/Hemlock Avenue
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Avenue	North/South Street	West Project Access
File Name	10_West Project Access & Hemlock.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

Warrant 1

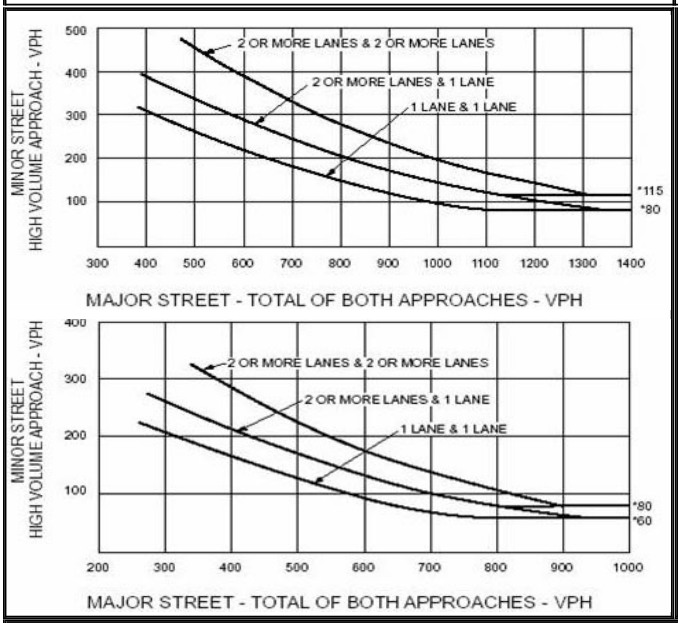
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

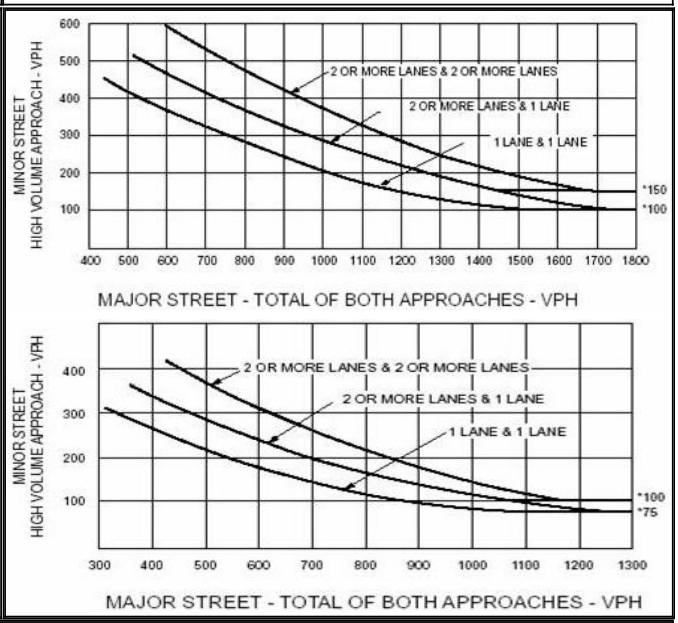
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 1 **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	498	92	672	No	No	No	No	No	No	No
08-09	534	69	664	No	No	No	No	No	No	No
09-10	268	49	361	No	No	No	No	No	No	No
10-11	332	62	448	No	No	No	No	No	No	No
11-12	503	93	679	No	No	No	No	No	No	No
12-13	433	80	584	No	No	No	No	No	No	No
13-14	474	88	640	No	No	No	No	No	No	No
14-15	623	117	844	No	No	No	Yes	No	No	No
15-16	633	117	853	No	No	No	Yes	No	No	No
16-17	630	116	849	No	No	No	Yes	No	No	No
17-18	665	86	827	No	No	No	Yes	No	No	No
18-19	353	65	476	No	No	No	No	No	No	No
Totals	5946	1034	7897	0	0	0	4	0	0	0

HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 8:36 PM

1.t

Warrants Summary

Information			
Analyst	Transpo	Intersection	Nita Drive/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Nita Drive (Int 11)
File Name	11_Nita & Hemlock.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

General				Roadway Network	
Major Street Speed (mph)	30	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	400	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	2

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	0	0	1	0	0	0	0	0	0	1
Lane usage		T			TR							R
Vehicle Volume Averages (vph)	0	314	0	0	159	6	0	0	0	0	0	7
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐
7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐

1.t

Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

 HCS7™ Warrants Version 7.2.1 Generated: 12/4/2017 8:43 PM

1.t

Warrants Volume

Information

Analyst	Transpo	Intersection	Nita Drive/Hemlock Ave
Agency/Co	City of Moreno Valley	Jurisdiction	Moreno Valley
Date Performed	12/4/2017	Units	U.S. Customary
Project ID	Festival at Moreno Valley	Time Period Analyzed	PM Peak Hour
East/West Street	Hemlock Ave	North/South Street	Nita Drive (Int 11)
File Name	11_Nita & Hemlock.xhy	Major Street	East-West

Project Description *Festival at Moreno Valley*

Warrant 1

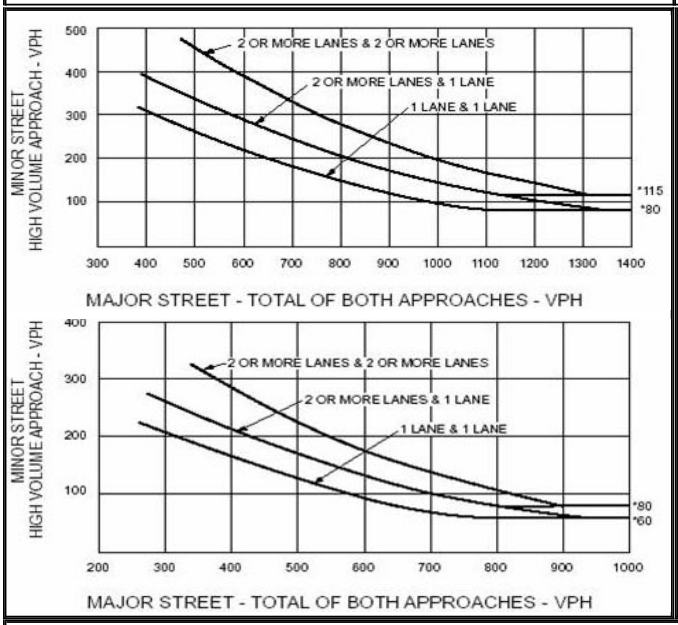
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

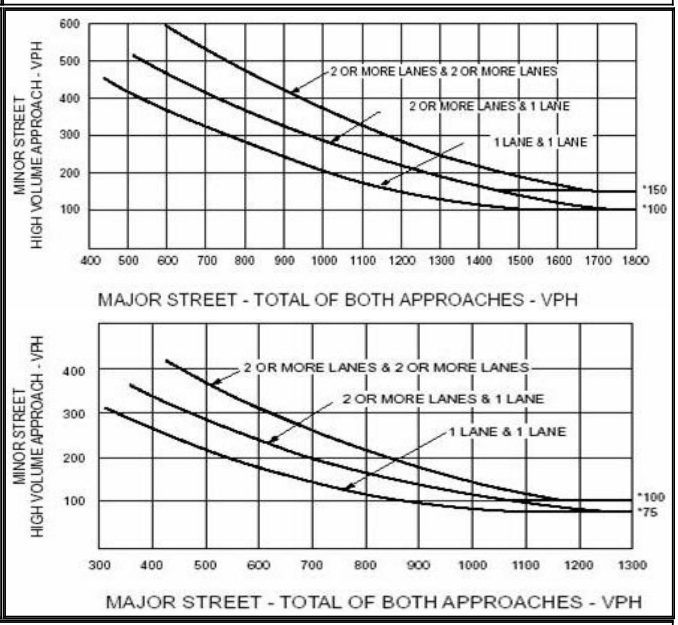
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 1 **Minor Street Lanes** 1 **Speed** 30 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	514	8	522	No	No	No	No	No	No	No
08-09	382	6	388	No	No	No	No	No	No	No
09-10	277	4	281	No	No	No	No	No	No	No
10-11	341	5	346	No	No	No	No	No	No	No
11-12	396	6	402	No	No	No	No	No	No	No
12-13	519	8	527	No	No	No	No	No	No	No
13-14	446	7	453	No	No	No	No	No	No	No
14-15	489	7	496	No	No	No	No	No	No	No
15-16	634	10	644	No	No	No	No	No	No	No
16-17	652	10	662	No	No	No	No	No	No	No
17-18	645	7	652	No	No	No	No	No	No	No
18-19	475	7	482	No	No	No	No	No	No	No
Totals	5770	85	5855	0	0	0	0	0	0	0

Mitigation Measures SIDRA Output

MOVEMENT SUMMARY

Site: Davis Street/Hemlock Avenue

Future (2022) With-Project PM
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Driveway											
3	L2	178	2.0	0.309	14.4	LOS B	1.7	44.1	0.73	0.88	32.0
8	T1	2	2.0	0.309	9.9	LOS A	1.7	44.1	0.73	0.88	32.1
18	R2	26	2.0	0.309	9.7	LOS A	1.7	44.1	0.73	0.88	31.5
Approach		207	2.0	0.309	13.7	LOS B	1.7	44.1	0.73	0.88	31.9
East: Hemlock Ave											
1	L2	30	2.0	0.462	13.1	LOS B	3.0	76.3	0.69	0.80	34.2
6	T1	303	2.0	0.462	8.6	LOS A	3.0	76.3	0.69	0.80	34.4
16	R2	39	2.0	0.462	8.5	LOS A	3.0	76.3	0.69	0.80	33.6
Approach		373	2.0	0.462	9.0	LOS A	3.0	76.3	0.69	0.80	34.3
North: Davis St											
7	L2	41	2.0	0.404	12.7	LOS B	2.4	61.8	0.70	0.81	34.3
4	T1	1	2.0	0.404	8.2	LOS A	2.4	61.8	0.70	0.81	34.4
14	R2	264	2.0	0.404	8.1	LOS A	2.4	61.8	0.70	0.81	33.6
Approach		307	2.0	0.404	8.7	LOS A	2.4	61.8	0.70	0.81	33.7
West: Hemlock Ave											
5	L2	310	2.0	0.334	9.5	LOS A	2.2	56.5	0.29	0.59	34.3
2	T1	377	2.0	0.334	5.0	LOS A	2.2	56.8	0.28	0.51	35.5
12	R2	177	2.0	0.334	5.1	LOS A	2.2	56.8	0.28	0.48	35.0
Approach		865	2.0	0.334	6.7	LOS A	2.2	56.8	0.28	0.54	35.0
All Vehicles		1751	2.0	0.462	8.3	LOS A	3.0	76.3	0.50	0.68	34.2

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

1. INTRODUCTION

The following section is summarized from the *Study of Historical and Archaeological Resources for the Revised General Plan, City of Moreno Valley* prepared by Archaeological Associates, Inc. (Revised August, 2003), and the *Cultural Resources Survey for the City of Moreno Valley, Riverside County, California* prepared by the Archaeological Research Unit (ARU) of the University of California at Riverside (October, 1987). The full text of these studies is contained in Volume II Appendix F of this EIR.

2. HISTORY OF MORENO VALLEY

Human occupation of Southern California may date as far back as 10,000 years. However, there is no evidence of human activity in the Moreno Valley region prior to about 2,300 years ago. By the time the Spanish began to explore California, descendents of the Shoshonean people, the Luiseño, held the territory that currently includes the Moreno Valley planning area. However, other groups such as the Serrano and Cahuilla were also in the area. The most important habitation sites in Moreno Valley and the western San Jacinto Valley were at Perris Reservoir.

Development of the planning area began in 1890 as the Town of Moreno was founded. However, the absence of a reliable water supply prompted most of the residents to leave by the end of the decade. Neighboring townships, Sunnymead and Edgemont, were more successful and established rural communities drawing on well water. The three towns finally incorporated into the City of Moreno Valley in 1984, with a population of nearly 47,000.

3. HISTORIC AND ARCHAEOLOGICAL RESOURCES

A state inventory, the California Register of Historic Resources (CRHR) includes properties of importance at the state level. All properties listed in the National Register of Historic Places (NRHP) are automatically included in the CPHR. The State of California also maintains an historic resources inventory which is administered by eleven regional offices. Riverside County records are kept at the Eastern Information Center (EIC), University of California at Riverside.

In the early 1980s, the Riverside County Historical Commission conducted a historical survey of the Moreno Valley Region. For the most part, these recorded buildings are modest residences built during the first half of the twentieth century. Many of the buildings have since been destroyed; however, a few have survived. **Table 1** summarizes the City's inventory of existing old houses. **Figure 1** depicts the locations of the homes.

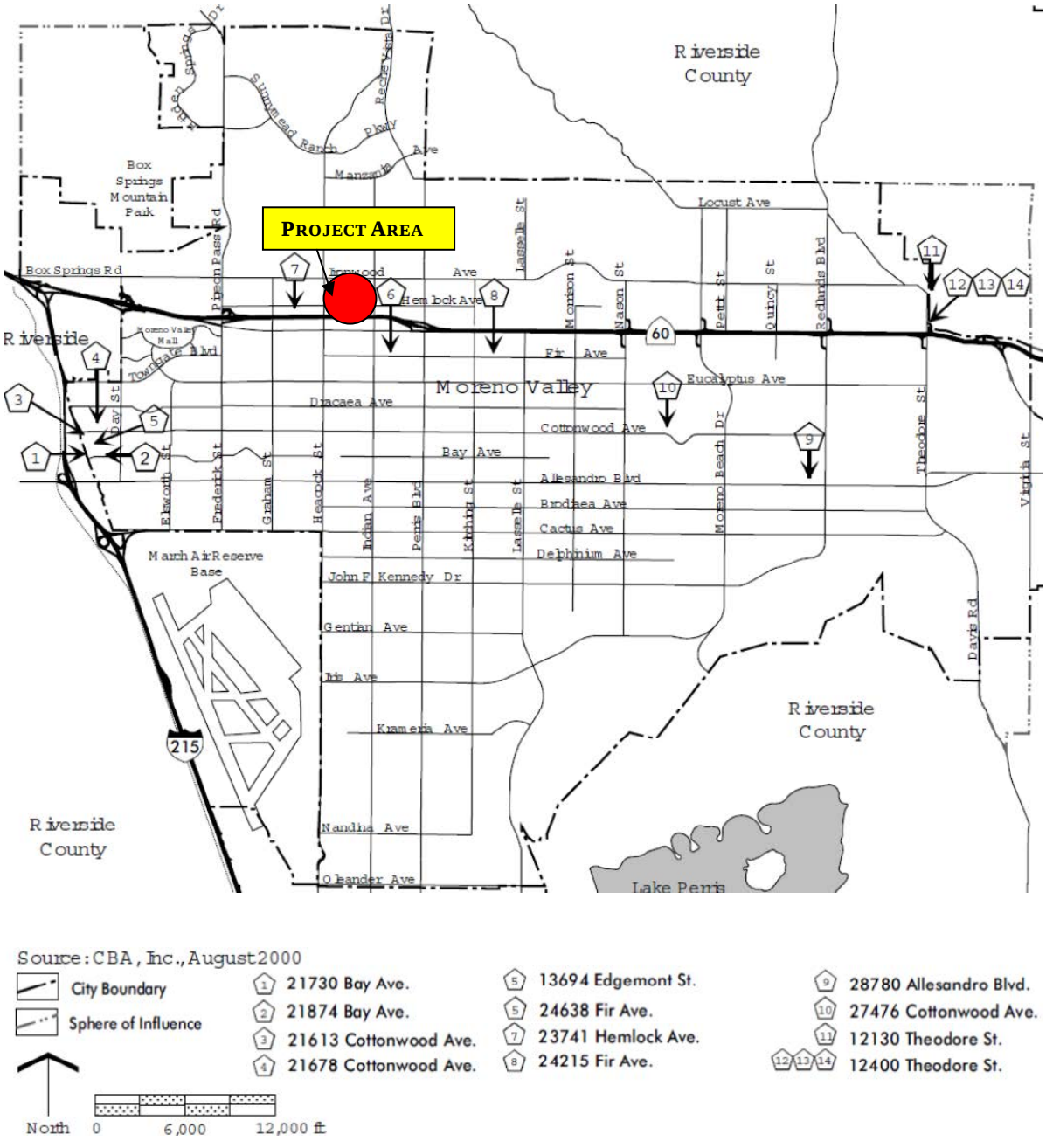


FIGURE 1
HISTORIC RESOURCES IN THE CITY OF MORENO VALLEY
Source: City of Moreno Valley General Plan

TABLE 1
LISTED HISTORIC RESOURCE INVENTORY STRUCTURES IN MORENO VALLEY

Address	Map Location	Approximate Year Built	Style/ Comment
Edgemont			
21730 Bay Ave.	1	1947	Bungalow
21874 Bay Ave.	2	1938	Vernacular
21613 Cottonwood Ave.	3	1930	Vernacular
21678 Cottonwood Ave.	4	1941	Moorish
13694 Edgemont St.	5	1920	Vernacular
Sunnymead			
24638 Fir Ave.	6	~1915	Vernacular
23741 Hemlock Ave.	7	~1910	Vernacular
24215 Fir Ave.	8	1891	n.a.
Moreno			
28780 Allesandro Blvd.	9	1928	Mission Revival
Southeastern Sector			
27476 Cottonwood Ave.	10	~1928	Adobe
Eastern Sector			
12130 Theodore St.	11	1920	Vernacular
12400 Theodore St.	12	~1915	Vernacular Stone
12400 Theodore St.	13	~1915	Vernacular Wood
12400 Theodore St.	14	~1915	Stone

Source: Archaeological Associates, 2003 and City of Moreno Valley, 2003.

As depicted in **Table 1**, the homes are listed under the communities the homes are located in. The communities include Edgemont, Sunnymead, Moreno, Southeastern Sector, and Eastern Sector. Description of the homes within each community is provided below.

- *Edgemont.* Five residences in the Edgemont area have been previously evaluated. All lie in the vicinity of the "Old Interstate 215 Frontage Road" on the south side of the community. Only one, a vernacular built in 1920, is old enough to date to the original formation of the community. A "Moorish" themed house built in 1941 is arguably the most interesting example of domestic architecture within the City. This house appears eligible for listing in the California Register of Historical Resources.

- *Sunnymead.* The Riverside County Historical Commission identified eight old houses in the Sunnymead portion of Moreno Valley; however, four have been destroyed since the survey in the 1980's. One of these houses, constructed in the 1880's, may have been the last structure in Moreno Valley dating to the 19th century. Of the surviving homes, none is architecturally distinctive. However, three structures are interesting as one resembles a miniature barn and the others, dating to around 1910 and 1920 respectively, are in good condition. In addition, the New England style First Congregational Church located at 24215 Fir Avenue, thought to have been built in 1891, is considered to have local historical significance.

- *Moreno.* Only one historic structure survived in Moreno, namely the mission revival style old Moreno School at 28780 Alessandro Boulevard. The wood frame stucco school was built in 1928 on the same site as the original school built back in the early 1890's. The school is the only public building in Moreno Valley which dates to before World War II. It is also the only California Point of Historical Interest (#53) within the City and therefore may be eligible for the California Register of Historical Resources. The building was planned for restoration as a private residence as of January 2003.

- *Southeastern Sector.* The area bounded by Alessandro Boulevard on the south, Moreno Beach Drive on the east, Perris Boulevard on the west and Highway 60 on the north, is referred to as the "Southeastern Sector" and contains only one of the six recorded structures, as the others have since been demolished. The surviving structure belonged to "Doc" Atwood, a locally renowned physician who used the building as a home and office. This structure can be described as a classic California adobe and dates to around 1925.

- *Eastern Sector.* This sector is defined by the area east of Redlands Boulevard. Four old structures survive in this area. One, a vernacular wood-framed house was built in 1920, while the remaining three structures are a part of the Anco Ranch, which was built sometime around 1915.

4. HISTORIC SITES AND HISTORIC ARCHAEOLOGY

The current status of many of the sites and features itemized below is unknown. In cases where there is reason to believe that a site has been destroyed, this is mentioned. Where no more specific information is known, sites are referred to as though they exist.

- *Jackrabbit Trail.* Jackrabbit Trail's origins may go back to prehistoric time because its route across The Badlands connects the San Jacinto Valley with the San Gorgonio Pass and Coachella Valley. In 1897, it was declared a public highway by the Riverside Board of Supervisors and called the Beaumont and Moreno Road. In 1915, the County rebuilt the trail into a two lane road, naming it the "Jackrabbit Trail" because its alignment was reminiscent of the erratic running of a jackrabbit.

- *Riverside International Raceway (RIR).* Located just east and south of the intersection of I-215 and Highway 60, the Riverside International Raceway (RIR) was once among the most famous American automobile racing tracks. RIR was originally a 9-turn grand prix course which opened about 1960. For many years, RIR was used principally as a sports car track and was the home of the LA Times Grand Prix CanAm event. During the late 1960's and 1970's, RIR became a NASCAR site. Championship Auto Racing Team (CART) raced at RIR between 1981 and 1983 and NASCAR and International Motor Sports Association (IMSA) continued to be regular visitors. RIR was closed in 1988 and the site is now occupied by the Moreno Valley Mall at Towngate, the Towngate Memorial Park, and other development.

- *Old Moreno.* Only one of the original old Moreno structures has survived. The First Congregational Church, constructed in 1891, was relocated from old Moreno to 24215 Fir Avenue. The main intersection of town at Alessandro and Redlands Boulevards has remained largely undeveloped since the original late 19th century brick buildings (hotel, etc.) were demolished and the northwestern and southeastern corners remain vacant. As of December 2001, these locations were strewn with brick fragments. The southeastern corner also contains glazed tile and a cluster of old farm equipment. These corners represent historical archaeological sites which may have considerable research potential.

- *Adobe Buildings.* Aside from Dr. Atwood's house, described earlier, there are no intact adobe buildings in Moreno Valley. However there are at least three adobe ruins in outlying areas of the City. These are small, single room structures which lack distinctive architectural features but are of great interest from a historical archaeological perspective.

- *Webb's House.* Webb's house was discovered in 1991 in the Box Springs Mountains and is believed to have been constructed in the mid-1800's. The site consisted of field stone walls and a three-room stone house foundation. All were built with dry-laid local field stone. The remains may have since been destroyed by development.

- *Water-Related Remains.* There are two cisterns of historic and or archeological significance located in the planning area. The first is a bee-hived shaped brick and concrete cistern 14 feet deep and 13.5 feet in diameter and located near the intersection of Dracaea Avenue and Nason Street. The second, located ¼ mile east of the intersection of Laselle Street and Alessandro Boulevard, is a cylindrical brick and concrete cistern measuring 8 feet deep below ground surface and 5.5 feet in diameter. Both are believed to have been residential cisterns.

- *Historic Dump.* This small dump is situated on the west side of Pigeon Pass Valley near a spring. Believed to date to the 1920's, the dump contains bottle glass and ceramic shards, one of which bore the trademark "Douglass Stoneware L.A. Cal."

- *Military Target Range.* Located just north of the intersection of Box Springs Road and Clark Street in the northwestern corner of Moreno Valley, this property has been developed since the site was recorded in 1987. The range consisted of two target bunkers, 320 and 465 feet long. A series of earthen mounds formed rows south of the bunkers.

5. PREHISTORIC ARCHAEOLOGY

At least 190 prehistoric archaeological locations have been reported within the City of Moreno Valley. The vast majority are milling stations where bedrock metates (more or less flat grinding surfaces), commonly referred to as "slicks," and bedrock mortars are found. Naturally, these locations are generally situated around valley edges where suitable rock outcrops occur. Slicks were used in conjunction with a hand-held muller, or *mano* whereas mortars were used in conjunction with a wood or stone pestle. The former are generally regarded as having been used to grind chaparral seeds such as chia while the latter are generally associated with acorn grinding. The great majority (about three-quarters) of the bedrock milling surfaces in Moreno Valley are slicks. This suggests that chaparral seed processing was the dominant milling activity as opposed to acorn processing--probably because oak stands were not widespread in the vicinity during prehistoric times.

The Late Prehistoric Luiseño and Cahuilla peoples who occupied the region were generally believed to be semi-sedentary, meaning that they wintered in villages, then spread out in family groups during the spring and summer months to harvest seeds and acorns. Thus, smaller occupational locations tend to be associated with areas where plentiful milling stations are found. Milling stations are indicated by the presence of bedrock mortars and slicks. Rock art is also found within several complexes. This consists of "pictographs" or painted images and "petroglyphs" or rock engravings. Most of the so-called petroglyphs in Moreno Valley consist of boulders with "cupules" or cup- shaped holes, pecked into them.

In order to organize the recorded archaeological sites into some kind of meaningful pattern, the City's sites are divided into topographically distinct regions. The sites in these regions, referred to as "complexes" often contain one or more habitation areas accompanied by plentiful scattered milling stations. **Figure 2** shows the location of these Prehistoric Site Complexes within the planning area.

- *Box Springs Mountains Complex.* The Box Springs Complex includes the southwestern corner of the Box Springs Mountains overlooking the entrance to Box Springs Canyon. No doubt this area was much traveled during prehistoric time since it was along a natural route to the Los Angeles Basin. The presence of perennial springs encouraged semi-sedentary use of the place. The Moreno Valley portion of the complex includes twenty-one milling areas and camp with a storage shelter, cupule boulder, and apparent deposit. The camp is located about a half mile northeast of Box Springs Mountain.

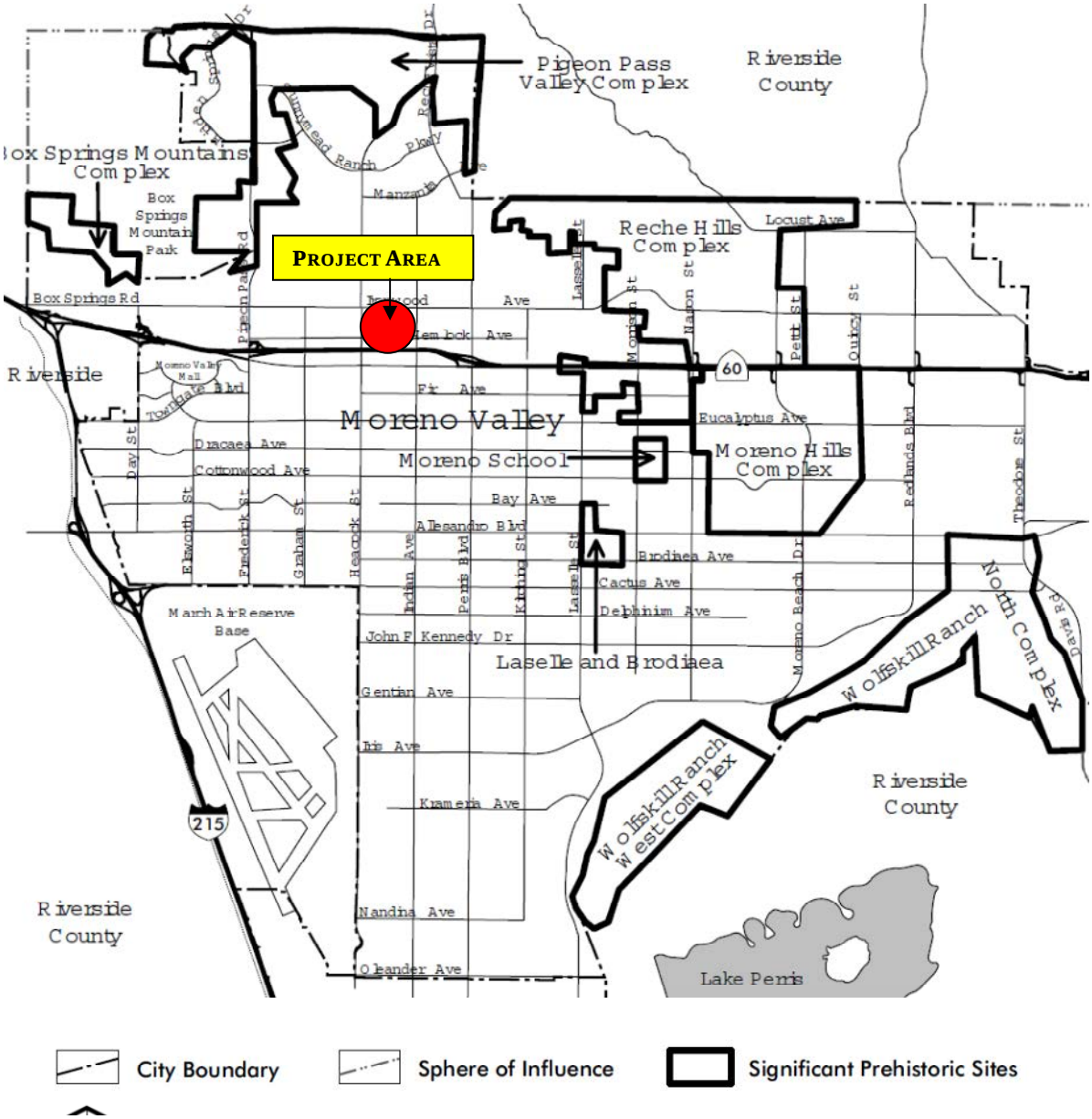


FIGURE 2
LOCATION OF PREHISTORIC SITES IN THE CITY OF MORENO VALLEY
Source: City of Moreno Valley General Plan

- *Pigeon Pass Valley Complex.* This complex is located on both sides of the Pigeon Pass Valley although the camp and most of the milling stations are located on the west side at the foot of the Box Springs Mountains. The complex consists of at least twenty-four milling stations, one of which features a cupule boulder. The camp lies about half way up the valley.

- *Reche Hills Complex.* The habitation areas for the Reche Hills Complex consist of two camps. Probably the more important of the two, is located in the mouth of Reche Canyon, while the other is a short distance to the southeast. The milling region for these camps seems to have been in a series of hills stretching south into Moreno Valley from the mountains on the west side of Reche Canyon. At least twenty-three milling stations are recorded in these hills. The Reche Hills Complex also features significant rock art in the form of cupule boulders, a pit-and-groove petroglyph (which may actually be a cupule boulder) and one pictograph.

- *Moreno Hills Complex.* The "Moreno Hills" is a small cluster of hills located just northwest of the Moreno town site. The hills extend northwest to an unnamed drainage which separates them from the southern end of the Reche Hills. Although the Moreno Hills are situated more or less in the middle of Moreno Valley, their prehistoric use appears to have been restricted to milling stations. Doubtless this is attributable to the absence of water. The nineteen recorded stations in the Moreno Hills were probably used at one time or another by individuals from various camps in the valley. However, they are closest to the main Reche Canyon camp and may be most closely associated with it.

- *Wolfskill Ranch North Complex.* "Wolfskill Ranch North" comprises Mt. Russell and the surrounding hills as far west as the campground pass road (Via Del Lago). There are four habitation areas around Mt. Russell. The first site appears to be a major camp with milling features, midden, and pictographs located south of the peak in the reservoir valley. A midden deposit is an accumulation of refuse from a prehistoric settlement. The second, also an important camp, has both cupules and rock paintings accompanying its midden deposit. The site is located on the eastern flank of the hills south of Mt. Russell. Most of the milling stations within Moreno Valley jurisdiction would have been more accessible from this location. The third site is a rockshelter with accompanying milling station located at the foot of Mt. Russell east of the peak. Finally, the fourth habitation complex has midden deposits, milling features, cupules, and pictographs. It is the most centrally located habitation site relative to the bulk of milling stations on the north side of Mt. Russell. In addition to these habitation locations, there are seven lithic scatters (stone tools or projectiles) and thirty-six recorded milling stations in the Wolfskill Ranch North area.

- *Wolfskill Ranch West Complex.* Wolfskill Ranch West comprises the area west of the campground pass road (Via Del Lago). The habitation area appears to have been located at the southwestern end of the complex. Nineteen additional milling stations lie in the

Wolfskill Ranch West area.

- *Eden Hot Springs.* The little valley south of Eden Hot Springs and west of Mt. Eden contains three camps with midden deposits in addition to a milling station. This location was probably used only during a limited portion of the year.

- *Moreno School.* This location comprises a rocky hill northwest of the Moreno School on Cottonwood Avenue. It consists of five milling stations.

- *Lasselle & Brodiaea.* Located near the intersection of Lasselle St. and Brodiaea Ave., this area is in an isolated rocky outcrop. Five milling stations are recorded here.

6. PALEONTOLOGICAL RESOURCES

The Moreno Valley area contains sedimentary rock-units with potential to contain significant nonrenewable paleontological (fossil) resources. These sedimentary units are referred to as the Mt. Eden Formation and the San Timoteo Formation.

The Mt. Eden Formation is described as being primarily reddish sandstone and dark green and brown clay with local reddish fanglomerate and conglomerate. The age of the fossils contained in the Formation and the dark reddish brown coloration distinguish the Mt. Eden Formation from the younger, green to gray, tan, and red weathering of the San Timoteo Formation. Fossilized fauna include cricetine rodent, horse, and proboscidean (extinct animals related to elephants).

The San Timoteo Formation sediments consist of claystones, siltstones, shales, sandstones, gravels, and fanglomerates. Paleontological sites are abundant within the San Timoteo Formation, with vertebrate faunas (animals) and floras (plants) reported. These sites contain a variety of fossilized fauna including horse, peccary, antelope, camel, deer, mastodon, sloth, tortoise, sabertooth cat, bear, and rabbit.

The Mt. Eden Formation and the San Timoteo Formation are known to be highly fossiliferous, and have produced abundant and diverse floral and faunal remains ranging in age from as old as 5 million years to 1.3 million years or less.

Figure 3 displays areas of paleontological resource sensitivity in the Moreno Valley planning area. These levels of sensitivity are based on extensive field work. In some areas there has been insufficient field work to make a determination. Consequently, the potential sensitivity of these areas is marked “undetermined.”

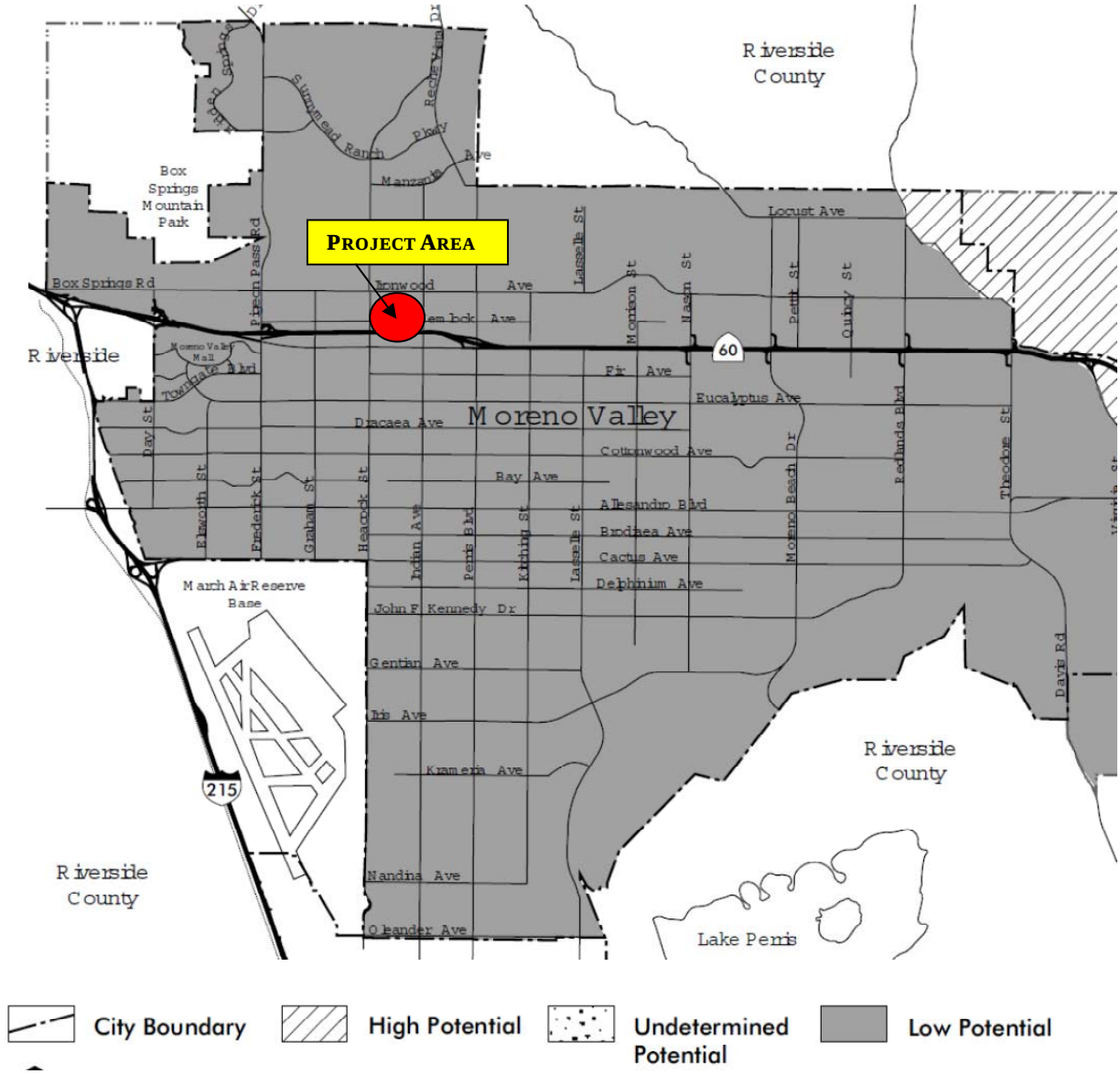


FIGURE 3
PALEONTOLOGICAL SENSITIVITY IN THE CITY OF MORENO VALLEY
Source: City of Moreno Valley General Plan