FINAL

Environmental Impact Report for the Kaiser Permanente Moreno Valley Medical Center Project SCH 2018111051

Prepared for:

City of Moreno Valley
Community Development Department
14177 Frederick Street
Moreno Valley, California 92553
Julia Descoteaux, Associate Planner

Prepared by:

DUDEK
38 North Marengo Avenue
Pasadena, California 91101
Nicole Cobleigh

MARCH 2020

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ATTACHMENTS

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CHAPTER 1
PREFACE

1.1 PURPOSE

This Final Environmental Impact Report (EIR) has been prepared by the City of Moreno Valley (City) for the Kaiser Permanente Moreno Valley Medical Center Project (project or proposed project). This Final EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, Section 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq.).

Before approving a project, CEQA requires the lead agency to prepare and certify a Final EIR. The City has the principal responsibility for approval of the proposed project and is therefore considered the lead agency under CEQA Section 21067. According to the CEQA Guidelines, Section 15132, the Final EIR shall consist of:

- The Draft EIR or a revision of the Draft
- Comments and recommendations received on the Draft EIR either verbatim or in summary
- A list of persons, organizations, and public agencies commenting on the Draft EIR
- The responses of the lead agency to significant environmental points raised in the review and consultation process; and
- Any other information added by the lead agency

1.2 FORMAT OF THE FINAL EIR

This Final EIR consists of the October 2019 Draft EIR and the following four chapters:

1.0 Preface. This chapter summarizes the contents of the Final EIR, the environmental review process.

2.0 Response to Comments. During the public review period for the Draft EIR, six comment letters were received. This chapter contains these comment letters and the City's responses to the comments.

3.0 Errata. Comments that are addressed in Chapter 2.0 may have resulted in minor revisions to the information contained in the October 2019 Draft EIR. Where necessary, deletions to the text are shown ~~strikeout~~ and additions to the text are shown in <u>underline</u> in all chapters of the Draft EIR. Additionally, through the certification of this Final EIR, where the term "Draft EIR" is used in the text, this is now deemed to be "Final EIR."

4.0 Mitigation Monitoring and Reporting Program. This section of the Final EIR provides the mitigation monitoring and reporting program (MMRP) for the proposed project. The MMRP is presented in table format and identifies mitigation measures for the proposed project, the implementation period for each measure, the implementing party, and the enforcing agency. The MMRP also provides a section for recordation of mitigation reporting.

1.3 ENVIRONMENTAL REVIEW PROCESS

1.3.1 Notice of Preparation

The City determined that an EIR would be required for the proposed project and issued a Notice of Preparation (NOP), which was distributed to the State Clearinghouse, interested agencies, and groups on November 26, 2018. Pursuant to Section 15082 of the CEQA Guidelines, recipients of the NOP were requested to provide responses within 30 days after their receipt of the NOP. The 30-day NOP public review period ended December 31, 2018. Comments received during the NOP public review period were considered during the preparation of this EIR. The NOP and NOP comments are included in Appendix A of the Draft EIR.

1.3.2 Noticing and Availability of the Draft

The Draft EIR was made available for public review and comment pursuant to CEQA Guidelines Section 15087. The 45-day public review period for the Draft EIR started on October 11, 2019, and ended on November 25, 2019. At the beginning of the public review period, 15 copies of the Draft EIR and one copy of the Notice of Completion (NOC) were submitted to the State Clearinghouse. Relevant agencies also received electronic copies of the documents. A Notice of Availability (NOA) was distributed to the interested parties, and filed with the Riverside County Clerk. The NOA described where the document was available and how to submit comments on the Draft EIR. The NOA and Draft EIR were also made available for public review at the City offices (14177 Frederick Street, Moreno Valley, CA 92553). Additionally, the document was available to be viewed on the City website at: http://www.moval.org/cdd/pdfs/ projects/kaiser/DEIR-10-2019.pdf. The 45-day public review period provided interested public agencies, groups, and individuals the opportunity to comment on the contents of the Draft EIR.

1.3.3 Final EIR

This Final EIR addresses the comments received during the public review period and includes minor changes to the text of the Draft EIR in accordance with comments that necessitated revisions. This Final EIR will be presented to the City for potential certification as the environmental document for the proposed project. All persons who commented on the Draft EIR will be notified of the availability of the Final EIR, and all agencies who commented on the Draft EIR will be provided with a copy of the Final EIR, pursuant to CEQA Guidelines Section 15088(b). The Final EIR will also be posted on the City's website: at http://www.moval.org/cdd/documents/about-projects.html.

Pursuant to CEQA Guidelines Section 15091, the City shall make findings for each of the significant effects identified in this EIR and shall support the findings with substantial evidence in the record. After considering the Final EIR in conjunction with making findings under Section 15091, the lead agency may decide whether or how to approve or carry out the project. When a lead agency approves a project that will result in the occurrence of significant effects that are identified in the Final EIR but are not avoided or substantially lessened, the agency is required by CEQA to state in writing the specific reasons to support its action based on the Final EIR and/or other information in the record. Because the Project would result in significant and unavoidable impacts, a "statement of overriding considerations" will be prepared pursuant to CEQA Guidelines Section 15093 and supported by substantial evidence in the record.

1.4 REVISIONS TO THE DRAFT EIR

The comments received during the public review period for the Draft EIR resulted in several minor clarifications and modifications in the text of the October 2019 Draft EIR. These changes are included as part of the Final EIR, to be presented to City decision makers for certification and project approval.

CEQA Guidelines Section 15088.5 identifies when a lead agency must recirculate an EIR. A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the Draft EIR but before certification of the Final EIR. Information includes changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not considered significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. As defined in CEQA Guidelines Section 15088.5(a), significant new information requiring recirculation includes the following:

1. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
2. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
3. A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
4. The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

The minor clarifications, modifications, and editorial corrections that were made to the Draft EIR are shown in Chapter 3.0, Errata, of this Final EIR. None of the revisions that have been made to the EIR resulted in new significant impacts; none of the revisions resulted in a substantial increase in the severity of an environmental impact identified in the Draft EIR; and, none of the revisions brought forth a feasible project alternative or mitigation measure that is considerably different from those set forth in the Draft EIR. Furthermore, the revisions do not cause the Draft EIR to be so fundamentally flawed that it precludes meaningful public review. As none of the CEQA criteria for recirculation have been met, recirculation of the EIR is not warranted. As stated in CEQA Guidelines Section 15088.5(b), "recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR."

CHAPTER 2
RESPONSES TO COMMENTS

A draft version of the Environmental Impact Report (EIR) for the proposed project was circulated for public review from October 11, 2019, to November 25, 2019. This chapter of the Final EIR includes a copy of each comment letter provided during the 45-day public review period for the Draft EIR. The City of Moreno Valley (City) has prepared responses to each comment, which are included in this chapter. The comments are ordered numerically, and the individual issues within each comment letter are bracketed and numbered. The City's responses to comments on the Draft EIR represent a good-faith, reasoned effort to address the environmental issues identified by the comments. Under the CEQA Guidelines, the Lead Agency is required to evaluate and provide written responses to comments received on the Draft EIR (CEQA Guidelines, Section 15088).

As shown in Table 2-1 the City received comment letters from four agencies: State of California, Governor's Office of Planning and Research, South Coast Air Quality Management District (SCAQMD), Riverside County Flood Control and Water Conservation District, and March Joint Powers Authority. One additional comment letter, from T/Cal Realty II, and one community comment card were also submitted. Responses have been prepared to comments that were received during the public review period. In accordance with the requirements of CEQA Guidelines Section 15088(b), the City will provide the written response on comments submitted by public agencies to each respective public agency at least 10 days prior to certifying the Final EIR.

Table 2-1
List of Commenters

Comment Letter	Name	Type	Address
1	State Clearinghouse, Governor's Office of Planning and Research	Agency	1400 Tenth Street P.O. Box 3044 Sacramento, California 95812-3044
2	SCAQMD	Agency	21865 Copley Drive Diamond Bar, California 91765-4178
3	Riverside County Flood Control and Water Conservation District	Agency	1995 Market Street Riverside, California 92501
4	March Joint Powers Authority	Agency	14205 Meridian Parkway, Suite 140 Riverside, California 92518
5	T/Cal Realty II	Public	14225 Corporate Way Moreno Valley, California 92553
6	Delma Willis	Public	14684 Tilden Lane Moreno Valley, California 92855

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Comment Letter 1

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

RECEIVED
DEC - 3 2019
CITY OF MORENO VALLEY
Planning Division

November 25, 2019

Julia Descoteaux
Moreno Valley, City of
14177 Frederick Street
Moreno Valley, CA 92553

Subject: Kaiser Permanente Moreno Valley Medical Center Project
SCH#: 2018111051

Dear Julia Descoteaux:

The State Clearinghouse submitted the above named EIR to selected state agencies for review. The review period closed on 11/22/2019, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, please visit: https://ceqanet.opr.ca.gov/2018111051/3 for full details about your project. 1-1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL 1-916-445-0613 state.clearinghouse@opr.ca.gov www.opr.ca.gov

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2018111051

Project Title: Kaiser Permanente Moreno Valley Medical Center Project
Lead Agency: City of Moreno Valley — Contact Person: Julia Descoteaux
Mailing Address: 14177 Frederick Street — Phone: 951-413-3209
City: Moreno Valley — Zip: 92553 — County: Riverside

Project Location: County: Riverside — City/Nearest Community: Moreno Valley
Cross Streets: Iris Avenue/Oliver Street — Zip Code: 92555
Longitude/Latitude (degrees, minutes and seconds): 33 ° 53 ′ 49.7 ″ N / 117 ° 11 ′ 12.3 ″ W Total Acres: 30
Assessor's Parcel No.: 486-310-033 and -034 — Section: 22 — Twp.: 3 South — Range: 3 West — Base: Sunnymes
Within 2 Miles: State Hwy #: none — Waterways: Perris Reservoir
Airports: none — Railways: none — Schools: Vista del Lago HS, Land

Document Type:
CEQA: [ ] NOP [ ] Early Cons [ ] Neg Dec [ ] Mit Neg Dec [X] Draft EIR [ ] Supplement/Subsequent EIR (Prior SCH No.) ____ Other: ____
NEPA: [ ] NOI [ ] EA [ ] Draft EIS [ ] FONSI
Other: [ ] Joint Document [ ] Final Document [ ] Other: ____

Local Action Type:
[ ] General Plan Update [ ] General Plan Amendment [ ] General Plan Element [ ] Community Plan
[ ] Specific Plan [X] Master Plan [ ] Planned Unit Development [X] Site Plan
[ ] Rezone [ ] Prezone [ ] Use Permit [ ] Land Division (Subdivision, etc.)
[ ] Annexation [ ] Redevelopment [ ] Coastal Permit [ ] Other: ____

Governor's Office of Planning & Research
OCT 09 2019
STATE CLEARINGHOUSE

Development Type:
[ ] Residential: Units ____ Acres ____
[ ] Office: Sq.ft. ____ Acres ____ Employees ____
[ ] Commercial: Sq.ft. ____ Acres ____ Employees ____
[ ] Industrial: Sq.ft. ____ Acres ____ Employees ____
[ ] Educational: ____
[ ] Recreational: ____
[ ] Water Facilities: Type ____ MGD ____
[ ] Transportation: Type ____
[ ] Mining: Mineral ____
[ ] Power: Type ____ MW ____
[ ] Waste Treatment: Type ____ MGD ____
[ ] Hazardous Waste: Type ____
[X] Other: Medical Campus - 30 acres

Project Issues Discussed in Document:
[X] Aesthetic/Visual [X] Agricultural Land [X] Air Quality [X] Archeological/Historical [X] Biological Resources [ ] Coastal Zone [X] Drainage/Absorption [ ] Economic/Jobs
[ ] Fiscal [X] Flood Plain/Flooding [X] Forest Land/Fire Hazard [X] Geologic/Seismic [X] Minerals [X] Noise [X] Population/Housing Balance [X] Public Services/Facilities
[X] Recreation/Parks [ ] Schools/Universities [ ] Septic Systems [X] Sewer Capacity [X] Soil Erosion/Compaction/Grading [X] Solid Waste [X] Toxic/Hazardous [X] Traffic/Circulation
[X] Vegetation [X] Water Quality [X] Water Supply/Groundwater [X] Wetland/Riparian [X] Growth Inducement [X] Land Use [X] Cumulative Effects [ ] Other: ____

Present Land Use/Zoning/General Plan Designation:
GP-Commercial, Residential/Office; Zoning-CC (Community Commercial), OC (Office Commercial), MUO (Medical Use Overlay)

Project Description: *(please use a separate page if necessary)*
The proposed project would expand the existing Kaiser Permanente Moreno Valley Medical Center campus by replacing facilities and adding new buildings. The proposed project would proceed under a Master Plan/Development Plan Permit and would be developed in up to three phases, with the first phase to be evaluated in the EIR on a project level. Because not all facilities of the project are moving forward at this time and based on several factors that are presently unknown, future Phase II and Phase III will be evaluated at a programmatic level. Ultimately, the project would redevelop and expand the medical center campus to include approximately 460-bed hospital, hospital support buildings, outpatient medical office buildings, an energy center, and surface and structured parking (approximately 1,125,000 square feet).

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

X	Air Resources Board	X	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency		Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
X	Caltrans District #8	X	Public Utilities Commission
	Caltrans Division of Aeronautics	X	Regional WQCB #8
X	Caltrans Planning	X	Resources Agency
	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of	X	State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	X	SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
X	Fish & Game Region #6		Tahoe Regional Planning Agency
	Food & Agriculture, Department of	X	Toxic Substances Control, Department of
	Forestry and Fire Protection, Department of	X	Water Resources, Department of
X	General Services, Department of		
X	Health Services, Department of	X	Other: South Coast Air Quality Management District
	Housing & Community Development	X	Other: Office of Statewide Health Planning/Developm
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date October 11, 2019 Ending Date November 25, 2019

Lead Agency (Complete if applicable):

Consulting Firm: Dudek
Address: 38 N. Marengo Ave
City/State/Zip: Pasadena, CA 91101
Contact: Nicole Cobleigh
Phone: 626-204-9829

Applicant: Kaiser Permanente
Address: 393 E. Walnut Street, 4th Floor
City/State/Zip: Pasadena, CA 91188
Phone: 626-405-6333

Signature of Lead Agency Representative: Patty Nevins **Date:** 10·8·19

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Revised 2010

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Response to Letter 1

State of California, State Clearinghouse
Scott Morgan
November 25, 2019

1-1 The comment confirms compliance with the State Clearinghouse review requirements for the Draft EIR, completion of the review period for the proposed project's Draft EIR by state agencies, and that no state agencies submitted comments during the review period. No environmental topics or issues are raised in this comment letter; as such, no further response is required.

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Comment Letter 2

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
South Coast AQMD (909) 396-2000 • www.aqmd.gov

SENT VIA E-MAIL AND USPS: November 19, 2019
Juliad@moval.org
Julia Descoteaux, Associate Planner
City of Moreno Valley, Community Development Department
14177 Frederick Street
Moreno Valley, CA 92553

Draft Environmental Impact Report (Draft EIR) for the Proposed Kaiser Permanente Moreno Valley Medical Center (SCH No.: 2018111051)

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final EIR.

South Coast AQMD Staff's Summary of Project Description
The Lead Agency proposes to redevelop and expand an existing 219,500-square-foot medical center, which would include the demolition of 147,200 square feet of existing medical buildings and construction of 1,113,000 square feet of new medical service facilities with 460 hospital beds and 2,550 parking spaces on 30 acres (Proposed Project). The Proposed Project is located at 27300 Iris Avenue on the northwest corner of Iris Avenue and Oliver Street within the City of Moreno Valley. The Proposed Project would be constructed in three phases (Phase I, II, and III) over an 18-year construction period from 2020 through 2038[1]. Throughout the 18-year construction period, a total of 8,668 heavy-duty, diesel fueled one-way haul truck trips are estimated to occur; the highest amount of one-way haul truck trips would occur during Phases II and III, Grading (1,300 one-way haul trips) and Phase III, Demolition (2,000 one-way haul trips)[2]. The Proposed Project will become operational as early as 2023[3]. Although the Proposed Project involves three phases of development, air quality impacts from Phase I are evaluated at a project level, and air quality impacts from Phases II and III are analyzed at a programmatic level in the Draft EIR. 2-1

The Lead Agency has incorporated Project Design Features for Air Quality (PDF-AQ), PDFs-AQ-1 and -2, and Energy and Greenhouse Gas Emissions (PDF-GHG), PDF-GHG-1, into the Proposed Project. Together these PDFs require that the Proposed Project use off-road construction equipment with Tier 4 Final or newer engines, use off-road vehicles with the newest, low-emission diesel powered engines or use retrofit devices, and incorporate technology that will reduce the Proposed Project's energy demand, such as solar power, among others[4].

South Coast AQMD Staff's Summary of the Air Quality Analysis
In the Air Quality Analysis, the Lead Agency quantified the Proposed Project's construction and operational emissions from Phase I development and compared those emissions to South Coast AQMD's recommended regional and localized air quality CEQA significance thresholds. Based on the analysis, the Lead Agency found that regional and localized air quality impacts from construction of Phase I development would be less than significant and no mitigation is required[5]. 2-2

[1] Draft EIR. Executive Summary. Page ES-5; Section 4.2 Air Quality. Page 4.2-25 through 4.2-37.
[2] *Ibid.* Section 4.5 Energy. Page 4.5-17 through 4.5-18.
[3] *Ibid*. Appendix B: Air Quality, Greenhouse Gas and Energy Data. CalEEMod Output, Winter Run. PDF page 100.
[4] Draft EIR. Executive Summary. Page ES-7 through ES-9.
[5] *Ibid*. Section 4.2 Air Quality. Page 4.2-24 through 4.2-29.

Julia Descoteaux November 19, 2019

Despite the unavailability of project-specific information for Phases II and III developments such as a construction schedule[6], the Lead Agency used a good-faith effort and quantified their construction and operational emissions. Based on the analyses, the Lead Agency found that construction of Phases II and III developments would not result in significant regional and localized air quality impacts. For the Proposed Project's operational air quality impacts, the Lead Agency found that NOx emissions from the combined operation of Phases I and II developments, and Phases I through III developments would be significant, primarily contributed by mobile sources, at 69 pounds per day (lbs/day) and 117 lbs/day, respectively, when compared to South Coast AQMD's CEQA air quality significance threshold of NOx from operation, at 55 lbs/day[7]. However, the Lead Agency found that there are no feasible mitigation measures to reduce operational NOx emissions to less than significant; therefore, the Proposed Project's operational air quality impacts would remain significant and unavoidable[8]. 2-2 Cont.

South Coast AQMD's 2016 Air Quality Management Plan

On March 3, 2017, South Coast AQMD's Governing Board adopted the 2016 AQMP[9], which was later approved by the California Air Resources Board (CARB) on March 23, 2017. Built upon the progress in implementing the 2007 and 2012 AQMPs, the 2016 AQMP provides a regional perspective on air quality and the challenges facing the South Coast Air Basin. The most significant air quality challenge in the Basin is to achieve an additional 45 percent reduction in nitrogen oxide (NOx) emissions in 2023 and an additional 55 percent NOx reduction beyond 2031 levels for ozone attainment. 2-3

South Coast AQMD Staff's General Comments

Upon a review of the Air Quality Analysis, South Coast AQMD staff found that the Lead Agency did not analyze a scenario where construction activities overlap with operational activities (e.g., some components of Phases I and/or Phase II development may be operational while some components of Phases II and/or Phase III development are under construction). This may have led to an underestimation of the Proposed Project's air quality impacts, especially NOx emissions from the overlapping passenger vehicle trips visiting the operational portions of the Proposed Project as on-road haul trucks travel to and from portions of the Proposed Project that are still under construction. Please see the attachment for more information 2-4

As described in the 2016 AQMP, achieving NOx emissions reductions in a timely manner is critical to attaining the National Ambient Air Quality Standard (NAAQS) for ozone before the 2023 and 2031 deadlines. South Coast AQMD is committed to attaining the ozone NAAQS as expeditiously as practicable. The Proposed Project plays an important role in contributing to additional NOx emissions during the 18-year construction period when construction activities of Phases II and/or III developments will overlap with operational activities of Phases I and/or II developments. Therefore, South Coast AQMD staff recommends that the Lead Agency include an additional construction mitigation measure to reduce the Proposed Project's NOx emissions during overlapping development phases. Please see the attachment for more information. 2-5

Conclusion

Pursuant to California Public Resources Code Section 21092.5(a) and CEQA Guidelines Section 15088(b), South Coast AQMD staff requests that the Lead Agency provide South Coast AQMD staff with written responses to all comments contained herein prior to the certification of the Final EIR. In addition, issues raised in the comments should be addressed in detail giving reasons why specific comments and suggestions are not accepted. There should be good faith, reasoned analysis in response. Conclusory 2-6

[6] *Ibid*. Page 4.2-30; 4.2-34.
[7] *Ibid*. Page 4.2-40 through 4.2-41.
[8] *Ibid*. Page 4.2-50.
[9] South Coast AQMD. March 3, 2017. *2016 Air Quality Management Plan*. Accessed at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.

2

Julia Descoteaux November 19, 2019

statements unsupported by factual information will not suffice (CEQA Guidelines Section 15088(c)). Conclusory statements do not facilitate the purpose and goal of CEQA on public disclosure and are not meaningful, informative, or useful to decision makers and to the public who are interested in the Proposed Project. Further, when the Lead Agency makes the finding that the recommended mitigation measure is not feasible, the Lead Agency should describe the specific reasons for rejecting it in the Final EIR (CEQA Guidelines Section 15091). 2-6 Cont.

South Coast AQMD staff is available to work with the Lead Agency to address any air quality questions that may arise from this comment letter. Please contact Alina Mullins, Assistant Air Quality Specialist, at amullins@aqmd.gov or (909) 396-2402, should you have any questions.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

Attachment
LS:AM
RVC191015-05
Control Number

3

Julia Descoteaux November 19, 2019

ATTACHMENT

Air Quality Impact Analysis – Overlapping Construction and Operational Activities

1. Based on a review of the Air Quality Analysis, South Coast AQMD staff found that the Lead Agency did not consider nor analyze a scenario where construction activities overlap with operational activities (e.g., daily passenger vehicle trips during the operation of Phases I and/or Phase II developments may occur simultaneously while Phases II and III, Grading, with 1,300 one-way haul truck trips and Phase III, Demolition, with 2,000 one-way haul truck trips are also occurring). Since implementation of the Proposed Project is expected to occur in phases over a multi-year timeframe of 18 years from 2020 to 2038[10], it is reasonably foreseeable that construction and operation of various development components may overlap, unless the Lead Agency includes requirement(s) that will prohibit overlapping construction and operational activities. If an overlapping construction and operation scenario is reasonably foreseeable, to conservatively analyze a worst-case impact scenario, South Coast AQMD staff recommends that the Lead Agency use its best efforts to identify the overlapping construction and operational years and development components, combine construction emissions (including emissions from demolition) with operational emissions, and compare the combined emissions to South Coast AQMD's air quality CEQA ***operational*** thresholds of significance to determine the level of significance in the Final EIR. 2-7

Recommended Additional Mitigation Measure

2. As stated above, the Proposed Project would require a total of 8,668 heavy-duty, diesel fueled one-way haul truck trips during the 18-year construction period[11]. To further reduce construction emissions, particularly from NOx, South Coast AQMD staff recommends the following mitigation measure as a suggested resource and guidance that the Lead Agency should review for incorporation in the Final EIR. The recommended mitigation measure would also reduce NOx emissions from the heavy-duty, diesel fueled on-road haul trucks during the overlapping construction and operational activities (see Comment No.1) and facilitate the achievement of attainment goals and timelines outlined in the 2016 AQMP. For more information on potential mitigation measures as guidance to the Lead Agency, please visit South Coast AQMD's CEQA Air Quality Handbook website[12].

   a) Require the use of zero-emission (ZE) or near-zero emission (NZE) on-road haul trucks (e.g., material delivery trucks and soil import/export) during construction such as heavy-duty trucks with natural gas engines that meet the CARB's adopted optional NOx emission standard at 0.02 grams per brake horsepower-hour (g/bhp-hr). When requiring ZE or NZE on-road haul trucks, the Lead Agency should include analyses to evaluate and identify sufficient power and supportive infrastructure available for ZE/NZE trucks in the Energy and Utilities and Service Systems Sections of the Final EIR, where appropriate. 2-8

   CARB also adopted the statewide Truck and Bus Regulation in 2010. The Regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent[13]. Since the construction schedule of the Proposed Project extends beyond 2023 for 18 years, 2010 model year trucks will be required for the Proposed Project and should become more widely available commercially. Therefore, South Coast AQMD staff recommends that the Lead Agency implement the Truck and Bus Regulation early and require, at a minimum, that

[10] Draft EIR. Executive Summary. Page ES-5; Section 4.2 Air Quality. Page 4.2-25 through 4.2-37.
[11] *Ibid.* Section 4.5 Energy. Page 4.5-17 through 4.5-18.
[12] South Coast AQMD. Accessed at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.
[13] California Air Resources Board. December 20, 2018. https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

4

construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer engines, or establish a vendor(s)/contractor(s) selection policy that prefers vendor(s)/contractor(s) who can supply 2010 model year trucks, and include the requirement in the Proposed Project's Construction Management Plan. The Lead Agency's commitment to early implementation of the Truck and Bus Regulation at the Proposed Project helps facilitate the Proposed Project's transition to 2010 model year trucks in 2023, provides time and opportunities to address and resolve any implementation challenges ahead of 2023, eases the costs and burden of regulatory compliance over a period of time, and yields emission reductions from fleets earlier than 2023.

To monitor and ensure ZE, NZE, or 2010 model year trucks are used at the Proposed Project, the Lead Agency should require that operators maintain records of all trucks associated with the Proposed Project's construction and make these records available to the Lead Agency upon request. The records will serve as evidence to prove that each truck called to the Proposed Project during construction meets the minimum 2010 model year engine emission standards. Alternatively, the Lead Agency should require periodic reporting and provision of written records by contractors, and conduct regular inspections of the records to the maximum extent feasible and practicable

2-8 Cont.

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Response to Letter 2

South Coast Air Quality Management District
Lijin Sun, JD
November 19, 2019

2-1 The comment restates information contained in the Draft EIR and does not raise an environmental issue within the meaning of CEQA. The comment will be included part of the Final EIR for review and consideration by the decision-makers prior to a final decision on the project. No further response is required or necessary.

2-2 The comment restates information contained in the Draft EIR and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the Final EIR for review and consideration by the decision-makers prior to a final decision on the project. No further response is required or necessary.

2-3 The comment provides factual background information and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the Final EIR for review and consideration by the decision-makers prior to a final decision on the project. No further response is required because the comment does not raise an environmental issue.

2-4 The City acknowledges the comment as an introduction to Comment 2-7. The issues raised in this comment are addressed in Response to Comment 2-7.

2-5 The City acknowledges the comment as an introduction to Comment 2-8. The issues raised in this comment are addressed in Response to Comment 2-8.

2-6 This comment provides concluding remarks that do not raise new or additional environmental issues concerning the adequacy of the Draft EIR. No further response is required or necessary.

2-7 This comment states that the EIR should identify any overlapping construction and operational years and development components, combine construction emissions with operational emissions and compare the combined emissions to the SCAQMD CEQA operational thresholds of significance to determine the level of significance.

The EIR analyzed air quality impacts using the CEQA significance thresholds promulgated by the South Coast Air Quality Management District (SCAQMD) in its CEQA Air Quality Handbook dated April, 1993 (the "SCAQMD Handbook"). The SCAQMD Handbook, included as Attachment 1 to the Final EIR, states that it is intended to provide guidance for analyzing and mitigating air quality impacts of projects within the South Coast Air Basin ("SCAB") (SCAQMD Handbook at page iii). The SCAQMD Handbook establishes separate thresholds for a project's construction emissions and its operational emissions, and these thresholds differ significantly for certain pollutants. See SCAQMD Handbook pages 6-1 through 6-4 (SCAQMD 1993). The SCAQMD Handbook also separately identifies and discusses mitigation for construction and operation. (Id. at 11-3 – 11-5.) Mitigation measures are identified based on the pollutant(s) that would exceed the threshold(s) and the activities that would generate the pollutant(s) in exceedance. Because emission sources are different for construction and operational activities, the mitigation strategies SCAQMD identifies to reduce emissions are different for construction and operation.

The SCAQMD Handbook acknowledges the differences between construction and operational emissions, and evidences an intentional distinction between the two for purposes of CEQA analysis. For example, the SCAQMD Handbook notes that "[e]missions resulting from operation of a project are critical because these impacts continue throughout the life of the project" and that even where emissions from operation are less than construction-related impacts, "the operational emissions create long-term impacts on air quality." (Id. at 11-5.) In addition, the SCAQMD Handbook provides screening tables which distinguish between construction and operational emissions, similar to the approach for mass daily emissions thresholds (see Tables 6-2 and 6-3, SCAQMD 1993). While the screening tables were not used in the analysis for the project, they further evidence the SCAQMD Handbook's intentional distinction between the two types of emissions for purposes of CEQA analysis and significance determination.

Although it is typical for phased projects to involve some overlap of construction and operation in later phases, the SCAQMD Handbook does not recommend that construction and operational emissions be combined for analysis and does not establish the operational emissions threshold as an appropriate threshold for such combined emissions. Nor has SCAQMD promulgated any threshold for combined construction and operational emissions, or published any formal guidance for analyzing combined construction and operational emissions for analyzing CEQA impacts. The comment's suggestion that the EIR treat construction emissions as an additional source of operational emissions to be evaluated against the SCAQMD's long-established operational threshold is not supported by any published SCAQMD guidance, nor does the comment itself provide a basis for such an analysis. Any proposal to impose the more stringent operational emission threshold on construction emissions for phased projects would require consideration and weighing of a host of factors, as with the establishment of any new significance threshold. In the absence of an adopted threshold and considered rationale for modifying the threshold for construction emissions in phased projects, the City does not find a basis for altering the long-established emission thresholds of the SCAQMD Handbook.

As such, in accordance with the SCAQMD CEQA Guidelines, the Draft EIR properly evaluated construction emissions as compared to the construction-only significance thresholds and operational emissions as compared to the operational-only thresholds for purposes of determining significance. Construction and operational emissions for each of the project's three phases are identified and analyzed against the applicable thresholds. (See Draft EIR pages 4.2-24 through 4.2-42.)

2-8 This comment recommends additional mitigation to reduce construction emissions, particularly NOx, from heavy-duty, diesel fueled one-way haul trips during the project's 18 year construction period, including any overlapping construction and operational activities. However, as discussed in Air Quality Threshold AQ-2 in the Draft EIR, pages 4.2-24 through 4.2-37, construction emissions, including NOx, are less than significant for all three phases of the project. Accordingly, no further construction emission mitigation is necessary. The comment also suggests additional mitigation to reduce construction emissions during any overlap of project construction and operations. However, as discussed in Response to Comment 2-7, no published SCAQMD guidance requires or recommends that construction related emissions of phased projects be added to operational emissions and compared against the SCAQMD operational threshold for purposes of evaluating potential impacts and required mitigation under CEQA, and the City has not established or adopted any CEQA threshold for such combined emissions. Thus, there is no potentially significant impact resulting from any overlap of construction and operational phases of the proposed project and no need for further construction mitigation.

In addition, the Truck and Bus Regulation is scheduled to go into effect prior to project operation, which is anticipated to begin in 2023. (See Draft EIR at page 3-8). It should also be noted that no overlap of construction and operation would occur until construction of Phase 2 begins in 2026, well after the Truck and Bus Regulation is scheduled to go into effect. (See Draft EIR page 3-8.)

It should also be noted that the comment's suggestion that the City require zero or near-zero emission on-road haul trucks during construction would not be feasible, even if it were necessary to avoid or reduce construction impacts. The California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program (HVIP) was established by the California Air Resources Board (CARB) to incentivize fleets to move towards zero and near-zero emission vehicles through financial rebates. Since the program's inception in 2009, there have been 885 vouchers submitted for low-NO_x vehicles within the entire state for heavy-duty trucks (California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program (HVIP) 2020). Of those, only 143 were approved and paid by HVIP. This represents a small fraction of the fleet of 312,835 vehicles registered within the state (CARB 2019a). The CARB Advanced Clean Truck Regulation does not require companies to include zero-emission heavy-duty vehicles in their fleets until 2024, and 50% of sales by 2030 (CARB 2019b). In addition, the currently available zero-emission trucks do not provide the range needed to support the needs of haul trucks used during construction (CARB 2019b). Therefore, it would be infeasible to require near-zero emission heavy-duty trucks for project construction due to the lack of availability and zero-emission heavy-duty vehicles due to the operational constraints.

Finally, it should be noted that project emissions represent a small fraction of the total emissions in the SCAQMD jurisdiction, less than 0.03%. As discussed on page 803 of Appendix B of the Draft EIR, total emissions for the SCAQMD for the CARB California Emissions Projection Analysis Model (CEPAM) baseline year of 2012 (excluding natural emission sources[1]) is as follows: 485 tons per day for VOC, 573 tons per day of NO_x, 2,183 tons per day of CO, 19 tons per day for SO_x, 168 tons per day of PM_{10}, and 70 tons per day of $PM_{2.5}$ (CARB 2018). For the proposed project's construction start of 2020, total projected emissions for the SCAQMD for all sources except natural, as forecasted by CEPAM, is as follows: 383 tons per day for VOC, 357 tons per day of NO_x, 1,437 tons per day of CO, 16 tons per day for SO_x, 182 tons per day of PM_{10}, and 67 tons per day of $PM_{2.5}$ (CARB 2018). Construction of the proposed project is estimated to result in maximum daily emissions of 0.03 ton per day for VOC, 0.02 ton per day of NO_x, 0.02 ton per day of CO, less than 0.01 ton per day for SO_x, 0.01 ton per day of PM_{10}, and 0.01 ton per day of $PM_{2.5}$ (see Tables 4.2-9, 4.2-10, and 4.2-11 of the Draft EIR). Thus, the emissions during construction of the proposed project comprise a small fraction of the emissions within the South Coast Air Basin as presented by the CARB CEPAM and are not of a magnitude to impose requirements beyond those necessary to mitigate impacts under CEQA.

References Cited

California Air Resources Board (CARB). 2016 SIP Emission Projection Data. Accessed December 2019. https://www.arb.ca.gov/app/emsinv/2017/emseic1p_query.php.

CARB. 2019a. EMFAC 2017 Web Database (v1.0.2). Accessed June 2019. https://www.arb.ca.gov/emfac/2017/.

CARB. 2019b. Advanced Clean Trucks Fact Sheet. July 2. Accessed December 2019. https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-act-fact-sheet

California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program (HVIP). 2020. Program Numbers. Accessed December 2019. https://www.californiahvip.org/tools-results/#program-numbers

SCAQMD (South Coast Air Quality Management District). 1993. CEQA Air Quality Handbook.

[1] Natural sources are non-manmade emission sources, which include biological and geological sources, wildfires,windblown dust, and biogenic emissions from plants and trees.

Comment Letter 3

JASON E. UHLEY
General Manager-Chief Engineer

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RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

227919

October 23, 2019

City of Moreno Valley
Community Development Department Planning Division
Post Office Box 88005
Moreno Valley, CA 92552-0805

Attention: Julia Descoteaux

Re: PENs 18-0217, 18-0228, 18-0229, 18-0230
APN 486-310-033 and 486-310-034

The Riverside County Flood Control and Water Conservation District (District) does not normally recommend conditions for land divisions or other land use cases in incorporated cities. The District also does not plan check City land use cases, or provide State Division of Real Estate letters or other flood hazard reports for such cases. District comments/recommendations for such cases are normally limited to items of specific interest to the District including District Master Drainage Plan facilities, other regional flood control and drainage facilities which could be considered a logical component or extension of a master plan system, and District Area Drainage Plan fees (development mitigation fees). In addition, information of a general nature is provided. 3-1

The District's review is based on the above-referenced project transmittal, received October 11, 2019. The District **has not** reviewed the proposed project in detail, and the following comments do not in any way constitute or imply District approval or endorsement of the proposed project with respect to flood hazard, public health and safety, or any other such issue:

☒ This project would not be impacted by District Master Drainage Plan facilities, nor are other facilities of regional interest proposed.

☐ This project involves District proposed Master Drainage Plan facilities, ________________ ________________. The District will accept ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection, and administrative fees will be required.

☐ This project proposes channels, storm drains 36 inches or larger in diameter, or other facilities that could be considered regional in nature and/or a logical extension of the adopted ________ Master Drainage Plan. The District would consider accepting ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection, and administrative fees will be required.

☒ This project is located within the limits of the District's Moreno Area Drainage Plan for which drainage fees have been adopted. If the project is proposing to create additional impervious surface area, applicable fees should be paid by cashier's check or money order only to the Flood 3-2

City of Moreno Valley
Re: PENs 18-0217, 18-0228, 18-0229, 18-0230
APN 486-310-033 and 486-310-034

October 23, 2019

227919

Control District or City prior to issuance of grading or building permits. Fees to be paid should be at the rate in effect at the time of issuance of the actual permit. 3-2 Cont.

☐ An encroachment permit shall be obtained for any construction related activities occurring within District right of way or facilities, namely, ___________________. For further information, contact the District's Encroachment Permit Section at 951.955.1266.

☐ The District's previous comments are still valid.

GENERAL INFORMATION

This project may require a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board. Clearance for grading, recordation, or other final approval should not be given until the City has determined that the project has been granted a permit or is shown to be exempt. 3-3

If this project involves a Federal Emergency Management Agency (FEMA) mapped floodplain, then the City should require the applicant to provide all studies, calculations, plans, and other information required to meet FEMA requirements, and should further require that the applicant obtain a Conditional Letter of Map Revision (CLOMR) prior to grading, recordation, or other final approval of the project and a Letter of Map Revision (LOMR) prior to occupancy. 3-4

If a natural watercourse or mapped floodplain is impacted by this project, the City should require the applicant to obtain a Section 1602 Agreement from the California Department of Fish and Wildlife and a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers, or written correspondence from these agencies indicating the project is exempt from these requirements. A Clean Water Act Section 401 Water Quality Certification may be required from the local California Regional Water Quality Control Board prior to issuance of the Corps 404 permit. 3-5

Very truly yours,

For

DEBORAH DE CHAMBEAU
Engineering Project Manager

c: Riverside County Planning Department
Attn: Jason Killebrew
City of Moreno Valley
Attn: Chris Ormsby

SLJ:blm

Response to Letter 3

Riverside County Flood Control and Water Conservation District
Deborah De Chambeau
October 23, 2019

3-1 The comment indicates that the District does not have jurisdiction over projects located within incorporated cities, with the exception of comments related to potential impacts to regional flood control facilities. The District comments do not imply endorsement or approval of the project. The comment indicates that the project would not be impacted by District Master Drainage Plan facilities, nor are other drainage facilities of regional interest proposed. The comment does not request changes to the document; therefore, no further response is required.

3-2 The comment indicates that the project is located within the Moreno Area Drainage Plan for which drainage fees have been adopted. As a result, fees should be to the District or City prior to issuance of grading or building permits. The comment does not request changes to the document; therefore, no further response is required.

3-3 The comment indicates that a National Pollution Discharge and Elimination System (NPDES) permit may be required for the project and that a grading permit should not be issued until such a permit has been granted. As indicated in Threshold GEO-2 in Section 4.6, Geology and Soils, and in Threshold HYD-1 in Section 4.9, Hydrology and Water Quality, because the project would involve ground disturbance in excess of 1.0 acre, an NPDES General Construction Permit would be obtained for each project phase.

3-4 The comment indicates that if the project is located within a FEMA-mapped floodplain, then the City should require the applicant to evaluate impacts to meet FEMA requirements, should require that a Conditional Letter of Map Revision be obtained prior to issuance of a grading permit, and should require that a Letter of Map Revision be obtained prior to occupancy. Threshold HYD-3 in Section 4.9, Hydrology and Water Quality, indicates that a portion of both Phase II parking structures would be located within FEMA Special Flood Hazard Zone A. With respect to CEQA, as discussed within Threshold HYD-3, the project would not impede flood flows such that upstream or downstream flooding would occur, as the project is located in a Hydrologic Condition of Concern exempt area. Therefore, flooding impacts are considered less than significant. See also Response to Comment 5-24.

3-5 The comment indicates that if a natural watercourse or mapped floodplain is impacted by the project, the City should require the applicant to obtain a Section 1602 Agreement from CDFW, a Section 404 Permit from the ACOE, and Section 401 Water Quality Certification from the RWQCB (prior to issuance of the Section 404 permit). Jurisdictional waters and wetlands is discussed in Draft EIR Section 4.3.2, Existing Conditions, and in Threshold BIO-3 of Section 4.3, Biological Resources.

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Comment Letter 4

MARCH JOINT POWERS AUTHORITY

October 23, 2019

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CITY OF MOREN...
Plannin...

Julia Descoteaux
Associate Planner
City of Moreno Valley
Community Development Department – Planning Division
14177 Frederick Street
P.O. Box 88005
Moreno Valley, CA 92552-0805

RE: Draft Environmental Impact Report – Kaiser Permanente Moreno Valley Medical Center
PEN18-0217 State Clearinghouse No. 2018111051

Dear Miss Descoteaux:

March Joint Powers Authority staff has completed their review of the **Draft Environmental Impact Report for the Kaiser Permanente Moreno Valley Medical Center**. We have no comments at this time. 4-1

If you have any questions regarding our comments or need additional information, please feel free to contact me at (951) 656-7000, or by email at, smith@marchjpa.com. Thank you.

Sincerely,

Jeffrey M. Smith

Jeffrey M. Smith, AICP
Senior Planner
March Joint Powers Authority

14205 MERIDIAN PARKWAY, SUITE 140 ★ RIVERSIDE, CALIFORNIA 92518 ★ (951)656-7000 ★ FAX(951)653-5558
E-MAIL: info@marchjpa.com ★ WEBSITE: www.marchjpa.com

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Response to Letter 4

March Joint Powers Authority
Jeffery Smith, AICP
October 23, 2019

4-1 The comment confirms that March Joint Powers Authority has reviewed the Draft EIR for the proposed project and does not have any comments. No environmental topics or issues are raised in this comment letter; as such, no further response is required.

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Comment Letter 5

November 25, 2019

Julia Descoteaux, Associate Planner
City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

Subject: Comments on Kaiser Permanente Moreno Valley Medical Center Project EIR

Dear Ms. Descoteaux,

T/Cal Realty II hereby submits the following comments on the Kaiser Permanente Moreno Valley Medical Center Project EIR dated October 2019 (State Clearinghouse No. 2018111051). T/Cal Realty II has a strong interest in providing these comments given that it has landholdings in the immediate vicinity of the subject Project, commonly referred to as "Aquabella."

As described in the DEIR, this project entails the construction of a large hospital that results in many unmitigated impacts. For a development of this magnitude, it is vital to properly disclose the environmental consequences of the project and to identify and adopt all feasible mitigation measures, and alternatives. Unfortunately, the Draft EIR fails in its duty to comply with the California Environmental Quality Act ("CEQA"). As such, the City and Planning Commission cannot rely on the document as a form of environmental impact review for the purpose of Project to allow the public and decision-makers an opportunity for meaningful review of the Project's impacts. 5-1

As the adjacent property owner we are very concerned about the proposed Project's noise, traffic and aesthetics impacts from the Project that either have not been analyzed or have been identified as significant impacts without feasible mitigation. As noted in the following comments, the EIR as currently drafted contains serious errors and fails to adequately address the Project's potential environmental impacts as required by the California Environmental Quality Act (CEQA). We therefore oppose the approval of the proposed Kaiser Medical Project until our concerns are adequately addressed and the Project meets full compliance with CEQA and other applicable regulations.

We would be happy to meet at your earliest convenience to discuss our comments and concerns.

<u>Noise</u>

The Draft EIR does not adequately address Project and cumulative noise impacts to adjacent land northwest of the site which is zoned for residential development, a sensitive land use. This needs to be addressed from both a construction and operational perspective (including ambulance arrivals, helipads, parking garages, etc.), including stationary noise sources such as the central plan. Table 4.11-10 is not clear as to the distance to the indicated predicted noise level (is this 5-2

100' from centerline, to edge of right of way, from some other location?). Furthermore, the Draft EIR uses a 5 dB CNEL increase as a threshold. In some cases, such as Iris Avenue west of the Project, the Project appears to increase noise levels to at or above 70 CNEL, with no discussion of impact significance. The Draft EIR does not provide substantial evidence that the Project will not generate "plainly audible" noise at 200 feet from the Project property line, per discussion on Draft EIR page 4.11-4. Draft EIR Table 4.11-1 indicates operational noise levels as being "normally unacceptable" from 70 – 75 CNEL. The Draft EIR does not address Project impacts on adjacent land zoned residential, given that the Project and cumulative noise impacts shown in Tables 4.11-10 through 4.11-14 result in exterior noise levels at or above 70 CNEL in some cases. The Draft EIR provides no mitigation measures even though Project and cumulative operational noise levels are shown to exceed 70 CNEL. Does the Project or cumulative traffic noise warrant consideration of a sound wall along Iris Avenue to protect existing or future residential areas? The Draft EIR should be revised and recirculated to address these inadequacies. 5-2 Cont.

Traffic Impact Analysis (TIA)

1) Traffic model used for forecasts of future conditions

The Kaiser study made the odd choice of using the Moreno Valley Traffic Model (MVTM). We call this "odd" because the MVTM became obsolete and was replaced by the RIVTAM model, which was completed in May 2009 and has been updated several times since. RIVTAM would be the standard choice for a large employment center in western Riverside County.[1]

This is not to say that it would be impossible to do the study using the MVTM; but it would require such extensive revisions to its roadway network, socio-economic (i.e., land use) file, transit networks, trip generate rates, etc. that doing it correctly would cost far more than using the current RIVTAM model. 5-3

Although we cannot be certain from the report, there are indications that MVTM was, in fact, not properly updated before being used in this study. For example, Figures 2-1 and 4-2 show a road network from the now-defunct Moreno Highlands Specific Plan (see Figures 1 and 2 below). Since the MHSP would have been current when the MVTM was developed it was embedded in the original network in the model. Based on the forecasts shown in Figures 7-1 to 7-15 of the report, it appears that this network was not updated before doing the model runs that are the basis of this analysis.

[1] See: *MOU for RIVTAM Model Maintenance, Update, and Usage*. Not dated, but signed by various parties between June and September, 2010. The signatories were Riverside County Transportation Department, Riverside County Transportation Commission, Western Riverside Council of Governments, Coachella Valley Association of Governments, Southern California Association of Governments, and Caltrans.

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Figure 1: Outdated Road Network

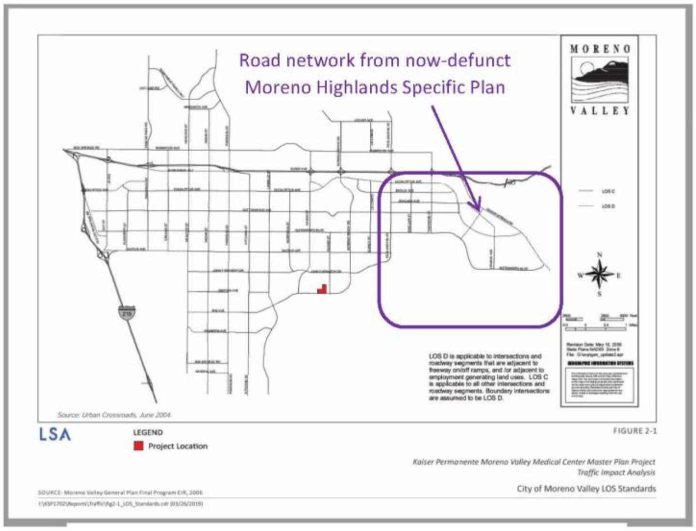
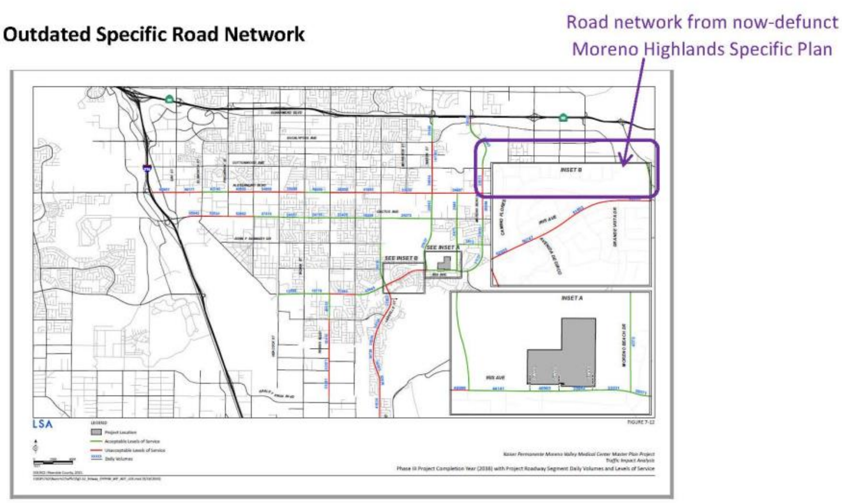


Figure 2: Outdated Specific Road Network



5-3
Cont.

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Aquabella

The assumed road network can be checked because it is depicted in figures in the report. Unfortunately, there is no similarly easy way of knowing from the report whether other portions of the MVTM (trip-gen rates, land uses, transit routes, etc.) were updated. There is no way of knowing, for example, whether a general updating of the land use file was performed. Consider this excerpt from page 30 for the report, which describes the general plan build-out scenario:

> "*Information concerning cumulative projects in the City was obtained from the City of Moreno Valley Economic Development website. Cumulative projects were also considered for the adjacent jurisdictions of County of Riverside, City of Riverside, City of Perris, and the March Joint Powers Authority. As such, the future year scenario in MVTM includes all projects anticipated to be built over the next 25 years. The model socioeconomic data for the future scenario were reviewed to check whether the cumulative projects that are anticipated to affect the study area are included in the model. If a project was missing or not appropriately included in the model, the model's socioeconomic data were accordingly updated to include those projects.*"

The process described above would add known projects from the City's website if they were not already represented in the model. However, it is not clear whether the base land use file was for existing land uses or for the General Plan Buildout, and if the latter what year's version of the General Plan was assumed. There are indications that the current version's land uses were not used as the background assumption. For example, the current General Plan shows Aquabella as having both single-family and multi-family components (see Figure 3 below). The Kaiser study 5-4
lists (Table 4-B) the Aquabella multi-family area as one of the cumulative projects but makes no mention of the single-family residential area.

Figure 3: Aquabella Property and Kaiser Project Site Land Uses

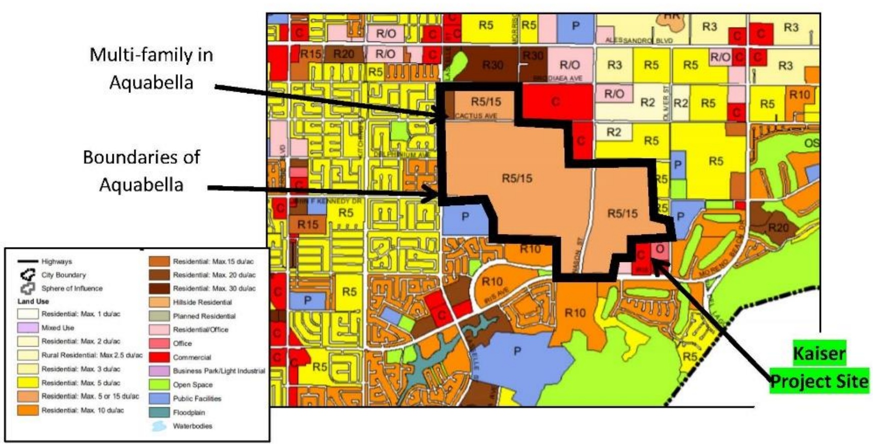

Exhibit 1: Land Uses in the Current General Plan

It is not clear what this means. If they were adding to a base that represented existing land uses, then both the single- and multi-family portions should have been listed as cumulative projects. On the other hand, if the base was the current buildout GP then there would have been no need to list either as a cumulative project, since they would already have been represented in the model as part of the base. This needs to be clarified in a revised and recirculated Draft EIR such that concerned parties can make reasonably informed decisions regarding the Project's impacts. 5-4 Cont.

Compared with the World Logistics Center (WLC) EIR and associated revised Final EIR sections, the list of cumulative projects in the Kaiser report is quite limited. WLC listed 126 projects in Moreno Valley; the Kaiser study has only 60. The WLC listed 242 projects elsewhere; the Kaiser study has only 20. They do not appear to have assumed any growth in the City of Riverside, for example, unless it was embedded in the MVTM land use file. 5-5

Based on this information we conclude that use of the MVTM may be a serious source of error in the study.

2) Project Trip Distribution

The Kaiser study developed its trip distribution using a select zone model run in the MVTM. The Draft EIR should provide additional information on all assumptions utilized in running the MVTM model. Limitations in the trip purposes represented in the model could result in an erroneous trip distribution. For example, if a model does not separately represent hospitals but instead lumps them into a general "commercial" category, and the trips to them are put in the general "Home-Based Other" trip purpose category, then the resulting trip distribution from the select zone model run would be that of a store rather than that of a major hospital and regional draw. The trip distances would be too short, and the traffic impacts would be under-estimated. 5-6

The trip distribution used in the Kaiser study is shown in the exhibit below (see Kaiser EIR Figures 5-1A, 5-1B, and 5-2). About 69% of the traffic is expected to be local within Moreno Valley, with another 10% going to Perris and the remaining 21% to the freeways. The percentage that stays within Moreno Valley seems high. The Draft EIR should provide additional information such that the adequacy of the TIA and associated trip distribution assumptions can be evaluated.

3) TIA Clarifications

A recurring weakness in traffic impact studies is the practice of filling the reports with tables of traffic volumes and LOS's without helping readers understand what the information in the data tables actually means. Elected officials and the public are then left to draw their own conclusions without the benefit of special training, thus defeating the full disclosure intent of CEQA.

For the Kaiser study, it would have been helpful if they explained: 5-7a

- Why does so little of the traffic go west to Riverside or east to Gilman Springs Road, or outside of the city generally? Is it because those areas are already served by convenient hospitals so few would use the new Kaiser facility, or is it due to the geographic limitations

Comments on Kaiser EIR
November 25, 2019
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of the MVTM, or imperfections in the way that the hospital was represented in the model? 5-7a Cont.

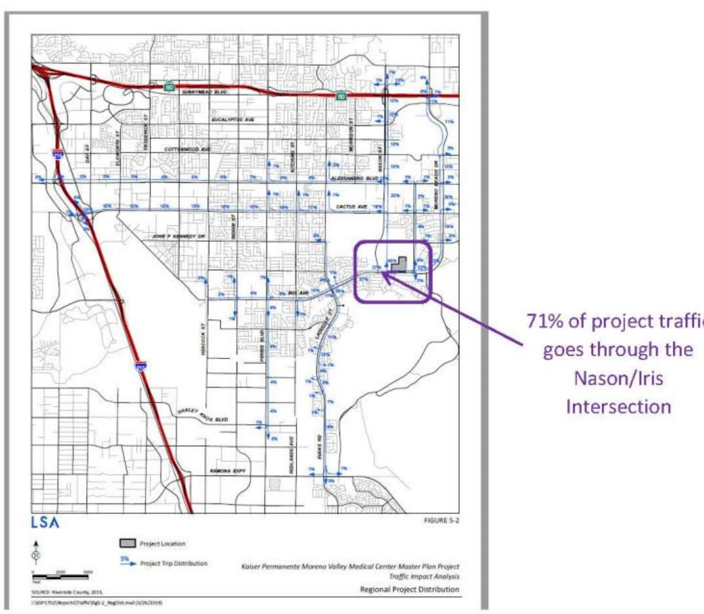
- What are the peak hours of traffic for a hospital? 5-7b

4) TIA Conclusions

The TIA and associated Draft EIR analyses should be revised or clarified to address the following inadequacies (including revisions to other sections such as air quality and noise as appropriate):

- The main driveway to the hospital (Intersection 63) would have an eastbound queue of vehicles waiting to turn left across Iris Avenue 795 feet long (see Table 8-E). The existing left-turn pocket is only 195 feet long, so they will need both to add a second left-turn lane and lengthen the pocket to prevent operational problems at this location. The queue of vehicles making a southbound left turn out of the hospital would be about 3 times as long as the current pocket, so that will also need to be lengthened. 5-8a
- 71% of project traffic, over 9 thousand project-related vehicles per day, would pass through the Nason/Iris intersection (see Figure 4 below). 5-8b

Figure 4: Nason/Iris TIA



- This is more than 20% of the theoretical capacity of Iris Avenue[2] between the medical center and Nason Street. This would push Iris Avenue over-capacity and leave Nason Street 97% full[3]. Also see Figure 5 below indicating LOS C standard for this intersection.
- The intersection would be over-capacity in both the AM and PM peak hours, causing queuing problems there (see Figure 7-13). The project would lengthen the southbound left-turn queue (across Iris and turning towards the hospital) by 520 feet (Table 8-E). 5-8c

Additional concerns that need to be evaluated in the Draft EIR:

a) What land use assumptions were embedded in the MVTM used for the Kaiser study? It appears that the amount assumed would effectively set the limit for what could be built at Aquabella, since anything higher would push Nason Street over-capacity. 5-9

b) We believe that the possibility of mitigating the project's impacts on Iris Avenue between Nason Street and Driveway 1 due to ROW constraints was dismissed prematurely (see Table 9-N, Segment 56). It may be possible to make ROW available on the north side of Iris that would add capacity to this segment and to the Nason/Iris intersection, where the project also has unmitigated impacts (see Table 9-M, Intersection 49). As a reminder, 71% of the project's traffic is forecast to use this section of Iris Avenue. 5-10

c) One possible solution would be for Kaiser to create a 4th driveway linking directly to Oliver Street so as to divert some of the traffic away from Iris Avenue. Oliver Street is forecast to operate at only 33% of capacity in the plus-project condition[4], and so could easily accept a larger share of the load. This would require acquisition of off-site lands, which should be evaluated as a potentially reasonable and feasible mitigation given the Project's unavoidable significant impacts (see discussion below). 5-11

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[2] See Table 2-D in the Kaiser study. Iris Avenue is a 6-lane arterial with a LOS standard of "C".
[3] See Figure 7-15 and Table 2-D of the Kaiser study.
[4] Plus-project volume is 6,649 veh/day (see Figure 7-15) compared to the capacity of a 4-lane undivided road of 20,000 veh/day (see Table 2-D).

Comments on Kaiser EIR
November 25, 2019
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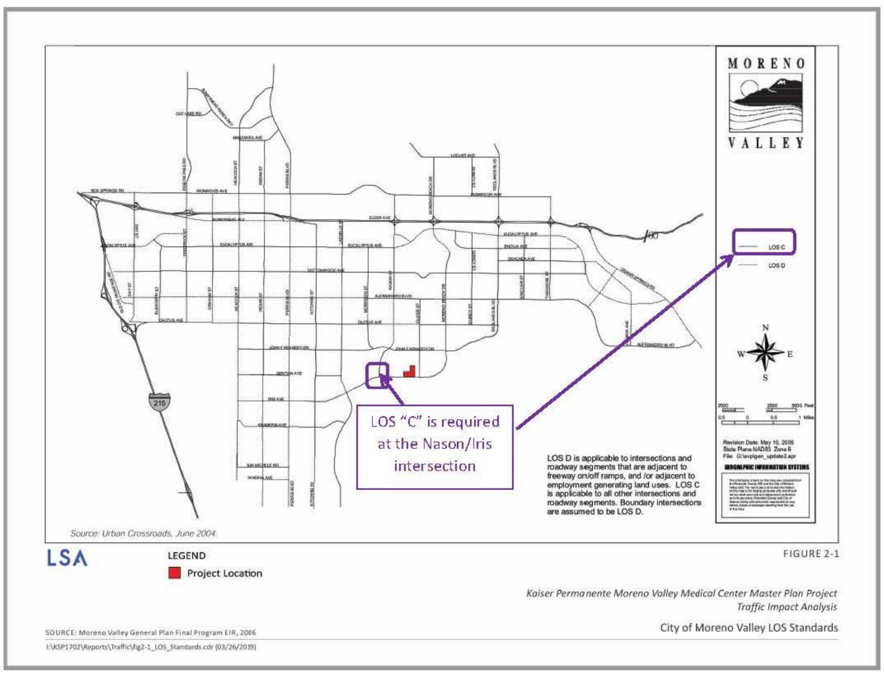
Figure 5: LOS "C"



5) Traffic mitigation measures

The TIA and associated Draft EIR analyses need to be revised and recirculated to address the following deficiencies:

- Where the project has an impact on a TUMF facility, the proposed mitigation is to pay the TUMF fee (see Table 9-M and Section 9.2.1). Otherwise, the project's mitigation is to pay a fair share of the needed improvements. The DIF program is not mentioned. For each intersection or roadway segment where there is a Project or cumulative impact, the Draft EIR needs to clearly identify the source of funding for any identified mitigation measure. Where the mitigation is payment of a fair-share, this can only be considered adequate mitigation where there is a fair-share program in place (such as TUMF or the City's DIF) and the fair-share payment can be shown to be part of a funded improvement program with reasonable probability of being implemented. 5-12
- The report correctly points out that the timing of TUMF-funded improvements is uncertain (see Section 9.1.2): 5-13

  > *"It should be noted that recommended improvements covered through TUMF are not considered adequate mitigation measures. This is because there is no guaranteed timeline for implementation of these improvements through the TUMF program. Therefore, impacts at intersections or roadway segments where mitigations are included through the TUMF program should be considered significant and unavoidable."*

- The tables listing the mitigation measures for intersections (Table 9-M) and roadway segments (Table 9-N) are **<u>replete</u>** with the phrase, "No mitigations feasible due to right-of-way constraints."
  - For each intersection or road segment where significant impacts are identified (for Project or cumulative conditions), the TIA and Draft EIR need to clearly identify which locations have feasibility issues and explain why, including a discussion of reasonably feasible alternatives. A reluctance to acquire ROW ought does not, in itself, render a measure infeasible. 5-14a
  - The unavoidable significant impacts noted throughout the Draft EIR, particularly with respect to traffic, conflict with Draft EIR statements for rejecting an Alternative Site. An Alternative Site needs to be seriously evaluated for this Project in light of the numerous site-specific unavoidable significant impacts and potentially significant unavoidable impacts to adjacent residential zoned land. 5-14b
- The mitigations for the Nason/Iris intersection (Int 49) are to add a second southbound left-turn lane and a second southbound right-turn lane (see Table 9-M). Though helpful, these measures would not fully mitigate the project's impacts at that location. The post- 5-15

mitigation LOS in the PM peak hour would be "D" at a location where the General Plan requires LOS "C." 5-15 Cont

- The mitigation measures shown for the Elsworth/Cactus intersections include the phrase: 5-16

  "No mitigations feasible in the south leg as it is under the jurisdiction of March Air Reserve Base."

  This sentence conflates the issue of physical feasibility with that of jurisdiction. It would have been more correct to state whether the improvement was physically possible and then, if it was, to state that the City cannot guarantee that the improvement will be implemented because it is under the jurisdiction of some other agency.

Aesthetics

The EIR does not adequately evaluate potential aesthetic impacts of the Project relative to existing adjacent residential zoned land, to the north and northwest, most notably the approved Aquabella Specific Plan. The Draft EIR is silent on visual impacts from north and northwest of the Project, looking across the Project to the south and east. The Draft EIR discusses visual impacts from the north and northwest from a single viewpoint (Viewpoint No. 6, from the Nason Street and Delphinium Avenue intersection). However, this discussion is limited in its analysis, apparently focusing on viewshed impact to motorists at this location. In addition, the Draft EIR conclusions of no significant impact are based on this single view from nearly 3,000 feet away from the Project boundary. Even by examining Figure 4.1-7, it is clear that the proposed massive hospital structures and parking structures will have significant visual impacts even at this great distance, and even more so from adjacent residential zoned land immediately abutting the Project's northern boundary. Furthermore, the Draft EIR fails to evaluate potential visual impacts from residential zoned land to the northwest (west of Nason Street), and associated planned public spaces such as parks and trails. 5-17

Air Quality

The air quality, noise and greenhouse gas analyses in the Draft EIR should be revised following revisions to the Traffic Impact Analysis as discussed below. 5-18

Draft EIR Threshold AQ-3 does not appear to adequately describe the specific pollutants of concern that may affect offsite existing and potential future sensitive receptors (including residential zoned land to the northwest), relative to construction, mobile emissions, and stationary operational emissions including the energy center. The Draft EIR needs to specifically evaluate potential health impacts associated with Project and cumulative air quality impacts, separate from the standard discussion contained in a Health Risk Assessment. 5-19

Tables 4.2-11 through 4.2-15, Emissions are understated because later phase construction would overlap with earlier phase operations. As construction is planned to occur in three phases, construction activities will continue after completion of the earlier phases of the project (i.e., commencement of "operations"). Because these two sources of emissions will overlap, the air 5-20 quality analysis must consider the combined construction and operational emissions [Refer to the Sierra Club v. County of Fresno, 6 Cal.5th 502 (2018) case]. 5-20 Cont.

Page 4.2-50, Operational NOx is significant and unavoidable and no feasible mitigation measures are identified. The project needs to include mitigation measures to reduce operational emissions (e.g., TDM measures including shuttles for patients, etc.) or explain why mitigation is not feasible. 5-21

Greenhouse Gas Emissions

Table 4.7-8 does not adequately address mitigation measures due to the significant release of Greenhouse Gas Emissions resulting from Project construction. Table 4.7-8 states that the Phase I through Phase III Net Total (Phase II minus components removed in Phase III) is estimated to produce approximately 10,887.23 MT CO_2e per year, which is over SCAQMD's threshold of significance. The Draft EIR improperly identifies "Project Design Features" (PDFs) which are not reflected in the Project design plans, and are therefore must be incorporated as mitigation measures. For examples, PDF-GHG-1 references Kaiser's green and sustainability initiatives, but nowhere does the EIR specify which measures have actually been incorporated into the Project design plans, or even which of the identified measures will be required of the Project (the measures says "would" or "will" which highlights the fact that this PDF is not currently reflected in Project plans, and also uses terms such as "would include one of many" and "include one or more of the following" which are noncommittal references that are neither enforceable or legally defensible). 5-22

The issues of improper mitigation in the form of PDFs should be corrected for all PDFs noted in the Draft EIR. They must be either directly incorporated into Project plans or changed to mitigation measures. 5-23

Hydrology and Water Quality

The Draft EIR's analysis of potential off-site flooding impacts is unclear. On page 4.9-16 the Draft EIR states that the Project is exempt from meeting standard hydromodification restrictions (Projects shall not result in increasing stormwater runoff downstream) simply because the Project is in an exempt area. Compliance with an exemption does not in itself eliminate significant impacts, and the relationship between actual physical impacts of the Project still need to be addressed. On page 4.9-17, the Draft EIR states that the Project meets the exemption requirements in part by not having any "negative downstream or upstream impacts." This claim is not substantiated in at least this portion of the Draft EIR, and in fact is contradicted in the following paragraph which states that, "project construction would impede and redirect flood flows... which in turn could result in a minor increase in downstream flood flows." The Draft EIR then further amplifies this concern noting that, "construction in the floodplain reduces the ability of the floodplain to store excess water, sending more water downstream and causing floods to rise to higher levels." The Draft EIR then dismisses its own substantial evidence of significant impacts by simply pointing to the HCOC exemption. The Draft EIR makes vague references to Appendix G-1 without summarizing substantial evidence to support Draft EIR statements, 5-24 including adequate capacity in downstream drainage facilities to handle Project and cumulative runoff. Upon review of Appendix G-1, page 5 of Appendix G-1 has a one sentence "discussion" of downstream impacts without any narrative explanation, and is silent on the downstream drainage facility capacity and potential significant impacts on downstream properties. The Draft EIR should identify if downstream property owners would be affected, and if so, if a drainage easement or similar agreement is required. The Draft EIR should be revised to clarify and correct this error and be recirculated for proper public review and comment. 5-24 Cont.

Alternatives

The Draft EIR artificially limits alternative sites to those that are within the City's Medical Campus Overlay. This is an impermissible artificial constraint given the proposed Project's location and identified site-specific unavoidable significant impacts noted in the EIR and in this comment letter. Where a Project would result in unavoidable significant impacts, CEQA requires that an EIR identify all reasonable and feasible mitigation measures AND alternatives that could reduce the Project's impacts while achieving the Project's "basic" objectives. The EIR has not adequately demonstrated this. Furthermore, the Draft EIR makes several unsubstantiated statements on page 7-5, including "it does not appear that the applicant can reasonably acquire, control or otherwise have access to other sites" and that "it is expected that developing a similar project at an alternative site would result in a similar array, if not more, project impacts..." 5-25

Cumulative Impacts

The list of cumulative projects appears incomplete. 5-26

Other Errors

Executive Summary

Page ES-3: there are a number of typos that should be corrected, including an incomplete sentence on the first bullet, and a reference to the "County" in the second bullet (which should be the City). 5-27

Page ES-9, **AREAS OF KNOWN CONTROVERSY**: T/Cal Realty II requests that the EIR identify potential Project and cumulative traffic impacts as an area of controversy given our comments and concerns, which at present are not adequately addressed in the EIR. 5-28

Page ES-19, Table ES-2: there is a typo in GEO-1, as this should be changed to a "known" fault. 5-29

Page ES-33, under PUB-1: the text repeats itself with, "need for new or physically altered governmental facilities." 5-30

Section ES.10, Alternatives: This section should also summarize alternatives that were rejected from further consideration. See comments on the Alternatives section above. 5-31

Effects Found Not to be Significant

This discussion appears to be omitted from the EIR. 5-32

Page 1-3 references EIR Chapter 5 as discussing agricultural, forestry, mineral resources and wildfire, but these topics do not appear to be discussed in Chapter 5 or anywhere else in the EIR. Since the NOP (Draft EIR Appendix A) does not appear to include an Initial Study that screened out these or other topics, this appears to be an omission requiring correction and recirculation of the Draft EIR. 5-33

Project Description

Page 3-15: The list of permits and approvals is not complete and does not include responsible agencies discussed in other EIR sections and mitigation measures, such as CDFW. Please verify that any responsible or trustee agency was sent the NOA, and provide the distribution list and record of delivery with the Final EIR, including documentation of other required CEQA noticing. 5-34

Conclusion

T/Cal Realty II appreciates the opportunity to comment on this Project looks forward to read the City's responses discussing our suggestions and concerns. 5-35

Sincerely,

T/Cal Realty II

14225 Corporate Way

Moreno Valley, Ca 92553

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Response to Letter 5

T/Cal Realty
November 25, 2019

5-1 This comment provides an introduction to the environmental concerns outlined in the comment letter. No specific environmental topics or concerns are raised within this comment and we refer the commenter to Responses to Comments 5-2 through 5-35 below.

5-2 This comment includes several assertions and questions regarding the noise analysis of the Draft EIR.

First, the commenter asserts that "[t]he Draft EIR does not adequately address Project and cumulative noise impacts to adjacent land northwest of the site which is zoned for residential development, a sensitive land use." The comment states that impacts to the vacant land northwest of the project site should be addressed "from both a construction and operational perspective (including ambulance arrivals, helipads, parking garages, etc.), including stationary noise sources such as the central plan[t]."

However, the Draft EIR adequately addresses potential project-attributed noise impacts, including to the adjacent vacant land northwest of the site, for the following reasons:

- As discussed in Section 4.11.4 of the Draft EIR, a noise impact assessment was conducted for the project's stationary-source operation noise (including the existing central plant and new Energy Center, as appropriate) for all three phases. Pursuant to Moreno Valley Municipal Code (MVMC) 11.80.030.C, stationary-source operation noise was evaluated at a distance of 200 feet from the project property line. As shown in Figure 4.11-1 on page 4.11-25 of the Draft EIR, the stationary-source operation noise analysis included five sample locations on the adjoining vacant land directly north and northwest of the project (sample studied locations PLA, PLB, PLC, PLD, and PLE). As shown in Table 4.11-9 on page 4.11-16 of the Draft EIR, impacts are less than significant. Furthermore, the last four sheets of Appendix H from the Draft EIR present illustrations of predicted aggregate stationary-source operation noise propagation over the project area and its surroundings in all directions that include the adjoining vacant land to the north and northwest. These illustrations show predicted stationary-source noise level (color-coded for reader convenience) for modeled existing conditions and each of the three proposed project phases.
- The project will comply with the City's municipal code requirements for construction noise. First, the project does not propose construction activity for "nighttime" hours of 8:00 p.m. through 7:00 a.m., and thus will not result in any nighttime "noise disturbance." Second, even if the project did include construction

activities during the “nighttime” hours of 8:00 p.m. through 7:00 a.m., it would be required to comply with MVMC Section 11.80.030, including Section 11.80.030.D.7 and 11.80.030.D9, which impose limits on noise from construction activity during “nighttime” hours.

- With respect to potential noise from emergency vehicles, if the vacant land to the northwest is eventually developed with residential uses, noise from such emergency responders may be audible at such potential future residential development, as well as to other areas in the vicinity as discussed in the Draft EIR at page 4.11-13. However, MVMC Section 11.80.030.E.1 specifically exempts “sounds resulting from any authorized emergency vehicle when responding to an emergency call or acting in time of an emergency.” Because emergency vehicle sounds are expressly exempt from the noise limitations of the City’s municipal code, any such noise would be considered a less than significant impact. It should also be noted that no helipad or helistop is proposed at the Moreno Valley Medical Center.
- Predicted traffic noise along the Iris Avenue segment south of the project site was assessed for the existing and future scenarios as shown in Tables 4.11-10 through 4.11-14 of the Draft EIR. Potential noise impacts from the increase in traffic noise levels were measured at location ST1 and ST3, directly south of Iris Avenue, as shown in Figure 4.11-1. As shown in Table 4.11-9 of the Draft EIR, the analysis shows that the increase in traffic noise level would be less than significant for the existing noise-sensitive receptors at both ST1 and ST3. If the vacant land to the north of Iris Avenue were to be developed with residential uses in the future, potential impacts to future noise-sensitive receptors north of Iris Avenue would be similar to those at ST1 or ST3 because a conservative assumption would place any such residential uses at a comparable proximity to Iris Avenue as the existing residences represented by ST1 and/or ST3, as shown in Figure 4.11-1. Proximity in this context is perpendicular distance to Iris Avenue, since roadway traffic noise emission can effectively be considered a “line” source for which sound propagates away cylindrically.

Because the MVMC does not impose a quantified limit on construction noise during daytime hours (7:00 a.m. to 8:00 p.m.), the Draft EIR applied the Federal Transit Administration (FTA) guidance threshold of 80 dBA 8-hour L_{eq} (L_{eq8h}) for noise exposure at the nearest existing residential land uses, which are located to the south of the project. As shown in Table 4.11-6 on page 4.11-12 of the Draft EIR, these impacts are below the 80 dBA 8-hour L_{eq} threshold and thus less than significant. The Draft EIR did not conduct such an analysis for residential uses on the vacant land to the north or northwest of the project site because no such residential uses currently exist. Moreover, this assessment could be performed for existing residences because the distance between the receptor location and the location of construction activity, as presented in Table 4.11-6 of the Draft EIR, is a known and quantifiable input parameter.

The same cannot be said for potential future residences on the land northwest of the project; one would have to speculate as to the future locations of the nearest residences and thus the distance parameters needed to perform the predictive analysis.

Nonetheless, for informational purposes, the following hypothetical construction noise analysis has been prepared to estimate potential noise impacts to potential future residential uses, utilizing the FTA guidance-based threshold and the same noise prediction techniques (e.g., usage of the Federal Highway Administration [FHWA] Roadway Construction Noise Model [RCNM]) and FHWA reference data used to generate the results and discussion presented in Section 4.11.4 of the Draft EIR. This analysis conservatively assumes that the nearest potential future occupied noise-sensitive receptors might be built as close as 50 feet to project construction activity occurring along the northwest portion of the project property line. This distance value assumes that the future receptor is a building façade or outdoor usable area separated from the property line by an onsite roadway and/or uncovered parking on the adjacent land. For this assumed scenario, the nearest receiver distance would be 50 feet and the acoustical center distance would be 405 feet. Below is a presentation of predicted construction noise levels, using these assumed input distances to represent a potential nearest future residential use to the northwest of the project.

Predicted Construction Noise at Adjacent Future Aquabella Development Receptor

Construction Phase	L_{eq} (dBA)	
Phase I	*Nearest Receiver 50'*	*Acoustical Center 405'*
Demolition	82	67
Site Preparation	85	68
Grading	84	68
Building Construction	78	64
Paving	83	65
Trenching (on-site utilities)	81	65
Architectural Coating	77	59
Phase II	*Nearest Receiver 50'*	*Acoustical Center 405'*
Demolition	82	64
Site Preparation	83	66
Grading	84	68
Building Construction	81	67
Paving	83	65
Trenching (on-site utilities)	81	65
Architectural Coating	77	59
Phase III	*Nearest Receiver 50'*	*Acoustical Center 405'*
Demolition	82	69
Site Preparation	83	66
Grading	84	68
Building Construction	81	67

Predicted Construction Noise at Adjacent Future Aquabella Development Receptor

Construction Phase	L_{eq} (dBA)	
Paving	83	65
Trenching (on-site utilities)	81	65
Architectural Coating	77	59

The above table shows that assuming the hypothetical future development of sensitive uses 50 feet from the project property line, the predicted construction noise for the three listed phases could exceed the FTA's general assessment guidance metric of 80 dBA L_{eq8h} by up to 5 dB when equipment may be operating at or near the project property line. As an initial matter, however, it should be noted that these predicted levels appearing under the "nearest receiver" column in the above table are conservative and would likely be lower if more realistic assumptions were utilized. This analysis assumes that a set of equipment is geographically bunched at the same vicinity and would operate there over an entire 8-hour period. Actual construction activity would likely be different, with fewer pieces of equipment being so proximate to the nearest receptor and for less than an 8-hour duration. Additionally, rather than being stacked, some equipment would, by necessity, be more distant from the receptor than the conservative 50-foot assumed value. Both of these realistic conditions would reduce the predicted L_{eq8h} values, so that they are closer to being consistent with the FTA guidance threshold of 80 dBA.

However, even under the conservative assumptions utilized for this hypothetical analysis, any potential exceedance of the 80 dBA threshold would be mitigated by the two construction noise mitigation measures (MM-NOI-1 and MM-NOI-2) as outlined in Section 4.11.5, Mitigation Measures, pages 4.11-20 and 4.11-21, of the Draft EIR. These mitigation measures include consideration of feasible noise-reducing temporary barriers and other means to occlude sound-to-source paths for stationary construction equipment. Effective implementation of a temporary noise barrier (e.g., suspended noise blanket or field-erected plywood) that would occlude sight lines between Project construction activity and an offsite receptor could be expected to yield—by itself—at least a 5 dB reduction and thus lower construction phase noise exposure to a value less than 80 dBA L_{eq8h} and thus render the potential impact less than significant. In addition, reducing the idling time on vehicle engines by half yields a 3 dB noise level reduction from that common construction site noise source; and, locating a stationary onsite source (e.g., generator, compressor, or pump) further away from a receptor yields a noise reduction benefit of 6 dB per doubling of distance. For these reasons, short-term construction noise from on-site sources would be considered less than significant with mitigation.

In addition, using the same assumptions described in the preceding paragraphs with respect to construction noise, a future occupied noise-sensitive receptor on the vacant land to the north and northwest would be expected to experience roller groundborne vibration velocity no greater than 0.07 inches per second (ips) peak particle velocity (PPV) and thus be less than the Caltrans "begins to annoy" threshold of 0.1 ips PPV for human annoyance as discussed on pages 4.11-19 and 4.11-20 of the Draft EIR. Such a level would also be less than the 0.2 ips PPV FTA-based guidance for evaluating residential building damage risk. For these reasons, project construction vibration that may be received by future occupied residential units associated with potential future development northwest of the project site would be considered less than significant and no mitigation would be required.

With respect to parking garage noise, on page 4.11-14 of the Draft EIR, parking garage noise is assessed with respect to typical maximum noise levels (L_{max}) as appearing in Table 4.11-7. Again, the Draft EIR analyzed impacts from parking garage noise based on the closest existing residential receptor, which is located south of Iris Avenue. Were one to speculate that a potential residential use would be developed northwest of the project at a distance of 50 feet to the project boundary, then the potential source-to-receptor distance would be the same as the reference distance utilized and shown in Table 4.11-7 on page 4.11-14 of Draft EIR. The upper end of the L_{max} value ranges for the three typical impulsive parking garage noises in Table 4.11-4 is only 70 dBA and thus far less than the 125 dBA level (for up to 100 repetitions per 24-hour period) as permitted by MVMC Table 11.80.030-1A. Further, the predicted L_{max} magnitude of 70 dBA is less than the measured L_{max} values for project property line locations such as ST4 and ST6 (as appearing in Figure 4.11-1 and on Table 4.11-4), and would not exceed the latter's L_{eq} value of 65.7 dBA by more than 5 dB. Hence, project parking garage noise would be considered a less than significant impact for potential future residential receptors as hypothecated herein.

Second, the commenter asserts that project noise impacts should be analyzed based on a threshold of 70 dBA CNEL pursuant to the compatibility guidelines shown in Table 4.11-1. The comment misunderstands the purpose of Table 4.11-1. Table 4.11-1, Land Use Compatibility for Community Noise Environments, is not the threshold for a significance determination under CEQA. Rather, Table 4.11-1 contains guidelines published by the Governor's Office of Planning and Research for use in evaluating the acceptability of proposed land use types within areas of specific noise exposure. These guidelines are advisory in nature and have not been adopted by the City as noise standards. The guidelines in Table 4.11-1 are included in the Draft EIR for informational background purposes, but are not utilized as an applicable threshold or standard for evaluating noise impacts. Here, the proposed project is a hospital, for which a range of 70-80 dBA CNEL would be considered "normally unacceptable." This information may help determine what noise reduction and/or sound insulation measures the proposed project might need to incorporate in its design and implementation in order to protect the proposed project from unacceptable noise. But this analysis—evaluating environment noise onto the proposed project—is no longer a requirement under CEQA, based on the recent changes (i.e., updated and legally in effect as of January 2019) to "Appendix G" criteria that the Draft EIR lists on page 4.11-8. Thus, Table 4.11-1does not provide impact assessment criteria against which the project is evaluated for potential noise impacts.

As discussed in the Draft EIR, the standard for evaluating noise impacts is compliance with respect to applicable portions the City's noise ordinance. And where a quantified standard appeared to be lacking for daytime construction noise exposure, the aforementioned FTA guidance threshold was adopted. The MVMC contains requirements for assessing construction and operation (stationary sources) noise from the project to the surrounding community; and, transportation noise increase is compared with up to an allowable 5 dB increment (a quantified interpretation of a "plainly audible" change in noise level). The City's noise ordinance prohibits a "noise disturbance" which is defined as any sound that "disturbs a reasonable person of normal sensitivities," exceeds the sound level limits specified in the MVMC or is "plainly audible" at a distance of two hundred (200) feet from the real property line of the source of the sounds, if the sound occurs on private owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property. MVMC Section 11.80.020 defines "plainly audible" to mean "that the sound or noise produced or reproduced by any particular source, can be clearly distinguished from ambient noise by a person using his/her normal hearing faculties." Because the MVMC does not quantify this interpretation, the Draft EIR used a 5 dB increase, which is considered to be a clear change in outdoor ambient sound level and consistent with the Caltrans Technical Noise Supplement (Caltrans 2013) calling a 5 dBA change "readily perceptible." As discussed in Sections 4.11.4, 4.11.5, and 4.11.6 of the Draft EIR, the project complies with the City's noise ordinance.

Third, the comment asserts that the Draft EIR does not provide substantial evidence "that the Project will not generate 'plainly audible' noise at 200 feet from the Project property line, per discussion on Draft EIR page 4.11-4." Page 4.11-4 of the Draft EIR summarizes the MVMC requirements with respect to operation and construction noise attributed to the project. The application of this standard is discussed on pages 4.11-16 and 4.11-17 of the Draft EIR. The Draft EIR evaluated predicted stationary sources of operation noise against 60 dBA L_{eq}, consistent with MVMC Table 11.80.030-2 per MVMC 11.80.030.C, and found them to be less than significant. If predicted stationary operation noise levels were assessed as a potential "noise disturbance" per MVMC 11.80.030.A and thus compared with a "plainly audible" criterion at 200 feet from the project property line, which the Draft EIR quantitatively interprets to be a 5 dB increase, the predicted L_{eq} results at sample locations

ST1 and ST3 shown in Table 4.11-9 on page 4.11-16 of the Draft EIR are much less than the measured outdoor ambient L_{eq} values presented in Table 4.11-4 on page 8 of the Draft EIR for these same locations.

For Phase I, Phase II, Phase III, and the Year 2040 cases as shown in Tables 4.11-11, 4.11-12, 4.11-13, and 4.11-14 of the Draft EIR, respectively, predicted traffic noise increases would not be more than 5 dB and thus considered less than significant.

Fourth, the commenter asserts that "Table 4.11-10 is not clear as to the distance to the indicated predicted noise level ("is this 100' from centerline, to edge of right of way, from some other location?)" The predicted traffic noise levels in Table 4.11-10 on page 4.11-17 of the Draft EIR are at the indicated locations as appearing in Figure 4.11-1 on page 4.11-24 of the Draft EIR, with approximate perpendicular horizontal distances to the edge of pavement as follows:

- ST1 – residences southwest of project site = 63 feet;
- ST2 – residences east of project site = 40 feet;
- ST3 – residences south of project site = 60 feet;
- ST4 – residences south of project site = 633 feet;
- ST5 – residences northeast of project site = 61 feet; and,
- ST6 – residences south of project site = 690 feet

Fifth, the commenter asserts that mitigation measures are necessary to address cumulative operational noise levels. However, as discussed above and as analyzed in the Draft EIR, the predicted increases in operational noise are considered less than significant and would therefore not warrant consideration of mitigation.

Finally, the commenter asserts that the Draft EIR should be revised and recirculated. As discussed above, the Draft EIR adequately addresses construction and operational noise impacts. The explanations and clarifications provided above address the commenter's questions regarding speculative impacts to hypothetical future sensitive receptors and demonstrate that noise and vibration impacts to potential future residences on land northwest of the project would either be less than significant or require the same expected mitigation measures that the Draft EIR has already determined necessary and successful for reducing noise impacts from the project to less than significant levels. As such, the response does not provide significant new information that creates a new significant impact or mitigation measure, or increases the severity of an impact, and therefore does not warrant recirculation of the Draft EIR or any portion thereof.

5-3 This comment argues that the Moreno Valley Traffic Model (MVTM) should not have been used for the project's transportation analysis, asserting that the MVTM is obsolete and was replaced by the Riverside County Traffic Analysis Model (RIVTAM). The comment is incorrect that the MVTM used in the Draft EIR is obsolete. Although a prior version of the MVTM was discontinued following the initial development of the RIVTAM in 2009, the City subsequently used the RIVTAM to prepare a new version of the MVTM, which is the version that was utilized for the project's transportation analysis in the Draft EIR. The current version of the MVTM is based on the RIVTAM and updates thereto, and provides a more focused model that disaggregates data within the City of Moreno Valley for a more precise analysis of traffic within the City. The current MVTM model was used for studied intersections and roadway segments located within the City. For studied intersections and roadway segments located outside the City, the Draft EIR analysis used the RIVTAM model, as updated.

This comment asserts that the MVTM does not take account of current roadway network, socio-economic (i.e., land use) file, transit networks, trip generation rates and other data. The comment refers to TIA Figure 2-1, Figure 4-2 and Figures 7-1 through 7-15 and argues that these figures evidence outdated data used by the MVTM model. As discussed above, the comment is incorrect that the MVTM model is outdated, as the MVTM model used in the TIA and Draft EIR analysis is an updated City model based on the current RIVTAM.

The comment is correct in noting that TIA Figure 2-1, Figure 4-2 and Figures 7-1 through 7-15 are not fully up to date. These figures are based on the City's existing General Plan, which is undergoing an update, and these figures do not reflect the current roadway network data. However, the TIA included these figures for general illustration purposes only, and these figures do not constitute or reflect the roadway or other data used in the TIA analysis. As discussed above, the TIA analysis is based on the City's updated MVTM model, which uses updated roadway data, and is not based on the TIA figures or any data reflected therein. (See Draft EIR, Appendix I (TIA), Appendix A.) TIA Figure 2-1 reflects the City's currently adopted General Plan Circulation Element LOS standard map and would only be updated when the City prepares an updated Circulation Element Level of Service standard map. Figures 4-2 and 7-1 through 7-15 have been updated with the current roadway configuration and added to the Draft EIR TIA in the form of an errata, as detailed in Chapter 3 of this Final EIR.

Neither the clarifications regarding the MVTM nor the revisions to Figures 4-2, and 7-1 through 7-15 warrant recirculation of the Draft EIR as they simply provide clarification and update illustrative figures and do not provide significant new information that creates a new significant impact or mitigation measure, or increases the severity of an impact.

5-4 As discussed in Response to Comment 5-3, the referenced figures in the TIA are included for illustrative purposes but do not fully reflect the assumed road network or other data used in the TIA transportation analysis. The comment questions whether the MVTM reflects outdated data, such as land use files, asserting that TIA Table 4-B indicates that the MVTM does not reflect the current General Plan buildout, including single-family and multiple-family components of the Aquabella Specific Plan as illustrated in the City's General Plan land use element. As discussed in Response to Comment 5-3, the MVTM used for the project's transportation analysis is an updated model. The land use file included in the MVTM and referred to in the TIA reflects the General Plan land uses under year 2035 conditions and the corresponding socioeconomic data (SED). Thus, the MVTM future scenario includes land use projections for the City (based on the current General Plan), as well as the rest of Riverside County and the Southern California Association of Governments (SCAG) region. As explained in Section 6.3 of the Draft EIR, the information contained in the base land use file was also reviewed to confirm that it includes all projects within the study area that either have applications submitted or approved, are under construction, or have recently been completed. Those projects are listed in TIA Table 4-B (and Draft EIR Table 6-1). This review confirmed that the base land use file used in the MVTM future scenario included the projects on TIA Table 4-B (Draft EIR Table 6-1). However, because the MVTM includes additional data from the base land use file, TIA Table 4-B does not purport to identify all land use data utilized in the project transportation analysis.

The full Aquabella Specific Plan project was included in the MVTM model used for the TIA analysis. Although TIA Table 4-B and Table 6-1 in the Draft EIR reference only one component of the Aquabella Specific Plan (Project No. 7, 220 multi-family dwelling units), the MVTM model includes the entirety of the Aquabella Specific Plan's approved density, including both the single and multi-family dwelling units. In fact, the MVTM model overstates the current Aquabella Specific Plan, because the model includes the original development envelope, which was later reduced. The Aquabella Specific Plan area is located within three traffic analysis zones (TAZs), which collectively have a projection of 4,700 dwelling units, which far surpasses the 2,922 dwelling units authorized by the current Aquabella Specific Plan. Thus, no change to the MVTM model or project transportation analysis is necessary. Nonetheless, in order to clarify that all land uses authorized by the Aquabella Specific Plan are included in the MVTM model, TIA Table 4-B and Table 6-1 in the Draft EIR have been updated and added to the Draft EIR TIA in the form of an errata, as detailed in Chapter 3 of this Final EIR. However, because this revision merely clarifies the Draft EIR and does not add any significant new information, recirculation is not required. See CEQA Guidelines Section 15088.5.

5-5 The first paragraph of this comment asserts that no cumulative project list is necessary if the model base includes the current buildout of the General Plan. We refer the commenter to the Response to Comment 5-4 above, which explains that the projects listed in Table 6-1 were utilized to provide additional assurance that the model base included all known, active projects. However, because this was explained in the Draft EIR, and is only further clarified by this response, recirculation is not required. See CEQA Guidelines Section 15088.5.

The second paragraph of this comment suggests that the cumulative project list in the Draft EIR should be more comparable to that for the World Logistics Center (WLC) EIR. However, the WLC project is much larger in scale and has a much larger study area than the Kaiser Permanente Moreno Valley Medical Center Project. The study area for the WLC TIA includes 136 study intersections, whereas the study area for the Kaiser Permanente Moreno Valley Medical Center TIA includes only 64 intersections. Because the purpose of cumulative projects is to identify approved and pending development projects that may add significant traffic to the study area, a project with a smaller study area is likely to have fewer cumulative projects as compared to a project with a larger study area. The comment does not provide any evidence or rationale to support the argument that the project should have a comparable number of cumulative projects as compared to the WLC. Most of the major projects in Moreno Valley as well as several projects within the City of Perris have been included in the Kaiser Permanente Moreno Valley Medical Center TIA. As discussed in Response to Comment 5-4, build out of the City's General Plan and growth in other areas within Riverside County and the SCAG region (including the City of Riverside) were included in the MVTM land use file. As such, the model SED for the future scenario includes all projects that are anticipated to be completed in the SCAG region. The comment does not identify any specific project within the study area that was not included, nor does it provide any evidence that the project's study area was inadequate.

5-6 This comment requests that the Draft EIR include additional information on the assumptions utilized in running the MVTM model. To include the project in MVTM, a separate Traffic Analysis Zone (TAZ) was created in the MVTM. The project employment SED was added to this zone prior to running the project's select zone run. The SCAG Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) Travel Demand Model has 13 employment categories. These employment categories are broadly based on the North American Industry Classification System (NAICS) employment categories (https://www.naics.com/search-naics-codes-by-industry/). Out of the 13 employment categories, "Educational Services, Health Care and Social Assistance" referred to as "EDUC_EMP" in the SCAG RTP model, RivTAM and MVTM SED files, was identified as the most appropriate category for the project and was used to code in the project in the model.

Once the project was included in the MVTM as discussed above, the trip distribution was determined based on select zone model runs from the MVTM. The comment questions the results of the MVTM distribution output, but provides no basis upon which to conclude that the distribution output is in error. The distribution output is not surprising and is consistent with expected travel patterns. The project includes both medical office and hospital uses. Trips to medical offices tend to be more local while trips to hospitals are both local and regional. As shown in Table 5-A of the TIA, approximately 43% of project trips are attributed to the medical offices, which would constitute the majority of the local trips. The remaining local trips would be for the hospital, but these local trips would be approximately 23% of total project trips, with the majority of project hospital trips being regional.

5-7a This comment questions the project traffic distribution and asks why so little traffic would go west to Riverside, east on Gilman Springs Road or outside the City generally. As discussed in Response to Comment 5-6, traffic distribution was determined by conducting select zone model runs for the project in MVTM. As also discussed in Response to Comment 5-6, the select zone model runs showing project trip distribution with the majority of project trips anticipated to occur from within and around the City of Moreno Valley is consistent with anticipated travel patterns for the proposed use.

Moreover, it is not surprising that a nominal percentage of project trips are anticipated to travel using Gilman Springs Road because there is not much development currently existing, approved or proposed along Gilman Springs Road. Additionally, Gilman Springs Road is not used as a thorough fare for inter-regional travel.

5-7b This comment asks what the peak hours of traffic are for a hospital. The Draft EIR does not identify the peak hours of traffic for the project's proposed uses because this information is not relevant for analyzing traffic impacts. Rather, a peak hour analysis focuses on the number of trips the proposed project would add at the morning and afternoon hours when traffic volumes on the surrounding street system are at their highest levels (i.e., "rush hour"). In order to determine a project's impacts on the surrounding circulation system, an analysis was conducted to identify the times of day when traffic volumes are highest on the surrounding street system. The number of trips for the proposed project at the identified peak hours was then calculated using the Institute of Transportation Engineers (ITE) Trip Generation Manual. The trip generation from a project that corresponds to the highest peak hour volume on the surrounding circulation system is the trip generation rate for peak hour of adjacent street traffic. For example, if traffic volumes on the surrounding street system are at their highest volumes at 8:00 a.m. and 5:00 p.m., then the analysis will determine the project's trip generation at 8:00 a.m. and 5:00 p.m. using the ITE Manual trip generation tables for the appropriate land use (e.g., hospital or medical office building).

This trip generation is then added to the peak hour volumes of the surrounding street system at 8:00 a.m. and 5:00 p.m. and compared against the applicable threshold.

The ITE Manual does identify the peak hour of the generator, i.e., the hour of the project's maximum trip generation. However, this information is not utilized in the analysis of transportation impacts because analyzing trip generation at the peak hour of generator would not reflect the project's trip generation that is anticipated to occur during the peak hour of adjacent street traffic (i.e., "rush hour"). Because the peak hour of generator rates is not relevant for purposes of AM and PM peak hour analysis it is not utilized in the TIA or Draft EIR.

5-8a This comment asserts that the TIA and Draft EIR should be revised to require a second east-bound left turn lane and lengthen the left turn pocket at Driveway 2/Iris Avenue (Intersection 63). The project shall to add a second eastbound left-turn lane at this intersection as an improvement under Phase II completion year (2032) conditions, pursuant to MM-TRA-56. As the comment notes, the turn-pocket storage length for this movement is 375 feet, but has been updated to 400 feet as reflected in updated Table 8-E in the form of an errata, as detailed in Chapter 3 of this Final EIR. Therefore, with the provision of a combined storage length of 800 feet, there would be adequate storage for all the left-turn vehicles into the project site at this intersection under Phase II (2032) and Phase III (Project Buildout) conditions.

The comment also asserts that there is insufficient queueing length for the southbound left turn movement out of the project hospital. However, any such queuing would occur within the project site and would not affect traffic within the City streets and thus would not give rise to a potential impact under CEQA. There is sufficient room within the project site to extend the southbound left-turn pocket by 90 feet if necessary.

5-8b This comment asserts that the Draft EIR should provide additional mitigation for impacts to the Nason Street/Iris Avenue intersection and the segment of Iris between Nason Street and the Project Driveway. As provided in the City's General Plan, the LOS standard for the intersection of Nason Street - Hillrose Lane/Iris Avenue is LOS C. As discussed in Section 4.14 of the Draft EIR, with the addition of future projected traffic due to regional growth and other projects and project traffic, this intersection is anticipated to exceed the LOS threshold under all with project analysis conditions. As stated in Section 4.14.7 of the Draft EIR, implementation of mitigation measures as included in the TIA and Draft EIR would improve the operations to an acceptable LOS under all analysis scenarios with the exception of the General Plan Build-Out (GPBO) conditions. With addition of the recommended improvements, the Nason Street/Iris Avenue intersection would be built out to the General Plan designation and the Draft EIR analysis did not identify any further mitigation consistent with the General Plan designation. The comment does not identify any proposed mitigation to address the impact at GPBO.

Similarly, the roadway segment along Iris Avenue between Nason Street and the Project Driveway would operate at an acceptable LOS under all analysis scenarios with the exception of the GPBO conditions, as discussed in Section 4.14.5.5 and shown in Table 4.14-18. This segment of Iris Avenue is already built-out to the City's General Plan classification of six-lanes and the Draft EIR did not identify any additional mitigation consistent with the General Plan designation.

Expansion of this intersection or roadway segment beyond that provided in the City's General Plan designation would conflict with the City's General Plan. See Response to Comment 5-14a.

5-8c The comment also asserts that the project would cause queuing problems at the intersection of Nason Street and Iris Avenue. As discussed in Section 4.14 of the Draft EIR, queuing analysis results for all intersections other than project driveways have been provided for informational purposes only. The purpose of providing the queuing results is to assist the City in monitoring queuing issues at these intersections as each phase of the project is built. As such, a second southbound left-turn lane has been proposed as a mitigation measure, MM-TRA-3, at this intersection under all scenarios for the intersection to operate at a satisfactory LOS. Adequate width is available along Nason Street to add this lane as well as to extend the left-turn pocket to accommodate the forecast queues for the southbound left-turn movement at the intersection of Nason Street - Hillrose Lane/Iris Avenue.

5-9 This comment questions what land use assumptions were embedded in the MVTM for the Kaiser Permanente Moreno Valley Medical Center study. The land use data for each cumulative project was reviewed to verify that it was appropriately incorporated in the MVTM. For those projects where the SED was found not to be included in the model, the model was updated accordingly. As discussed in Response to Comment 5-4, the TIA review confirmed that the Aquabella Specific Plan project was included in the MVTM. In fact, as explained in Response to Comment 5-4, the MVTM includes household projections above and beyond the current Aquabella Specific Plan and therefore presents a more conservative analysis.

5-10 This comment asserts that the Draft EIR did not adequately consider a mitigation measure to expand the width of the segment of Iris Avenue between Nason Street – Hillrose Lane and Project Driveway 1 by adding right of way on the north side of Iris Avenue. However, this segment of Iris Avenue is already built to its full General Plan capacity/cross-section of six lanes. The Draft EIR did not identify any additional mitigation consistent with the segment's General Plan designation and no such mitigation was identified after review of this segment. Expansion of this roadway segment beyond that provided in the City's General Plan designation would conflict with the City's General Plan. See Response to Comment 5-14a.

5-11 This comment suggests that the project and project site should be expanded to include a fourth driveway across off-site land to the east of the project site in order to link the project to Oliver Street. The proposed project is an expansion of the existing Kaiser Permanente Medical Center in Moreno Valley. The project frontage is on Iris Avenue, where it has three existing driveways. The project site has no frontage along Oliver Street and the land between the project and Oliver Street is privately owned by third parties. In addition, there is no public right of way connecting the project site directly to Oliver Street, and the City's General Plan does not provide for such a connection in the future. Accordingly, the suggested driveway is outside the scope of the proposed project and project site, and is inconsistent with the City's General Plan.

5-12 The comment states that the Draft EIR should clearly identify the source of funding for any identified mitigation measure, including the Development Impact Fee (DIF) program. The TIA and the Draft EIR identify some mitigation measures that are included as part of the Transportation Uniform Mitigation Fee (TUMF) program, which is funded by the Western Riverside Council of Governments (WRCOG). However, payment into the TUMF program does not guarantee the timing of the implementation of the proposed mitigation measures. None of the recommended mitigation measures are included in the City's DIF program, and the TIA and Draft EIR do not identify the City's DIF program as a funding source for mitigation. For mitigation measures that are not included in the TUMF program, the TIA identified that the project shall pay a fair share, but does not identify a specific funding source for the remaining portion of cost of the improvement, and payment of the project's fair share does not guarantee the payment of the remaining cost of the improvement, or implementation of the proposed mitigation measures. Therefore, Section 4.14.7 in the Draft EIR concludes that where mitigation measures consist of payment into the TUMF program or payment of the project's fair share, the project impact would remain significant and unavoidable.

5-13 The comment demonstrates agreement with the analysis and mitigation measures included in the TIA and Draft EIR. As discussed in Section 4.14.7 of the Draft EIR, payment into the TUMF program or a fair share payment does not guarantee the timing of the implementation of the proposed mitigation measures. The Draft EIR therefore provides that, in such cases, the project impact will remain significant and unavoidable.

5-14a The comment requests clarification regarding those intersections or roadway segments where mitigation was not identified due to "right-of-way constraints." The City's General Plan Circulation Element establishes the City's intended roadway system and provides a designated roadway width and configuration for segments. The City's General Plan does not provide for the expansion of roadways beyond that specified in the General Plan, but rather seeks to achieve the specified LOS with improvements consistent with the General Plan roadway designations. General Plan Goals and Policies, Section 9.5.3, 5-6 provides that the City shall:

> "Conduct studies of specified arterial segments to determine if any additional improvements will be needed to maintain an acceptable LOS at General Plan build-out. Generally, these segments will be studied as new developments are proposed in their vicinity. Measures will be identified that are consistent with the Circulation Element designation of these roadway segments, such as additional turn lanes at intersections, signal optimization by coordination and enhanced phasing, and travel demand management measures."

Thus, expansion of intersections or roadway segments beyond that provided in the City's General Plan designation would conflict with the City's General Plan.

In addition, General Plan Goals and Policies, Section 9.5.3, 5-6 specifically provides that the study described above should be undertaken where "[s]egments would require significant encroachment on existing adjacent development if built-out to their Circulation Element designations."

Consistent with General Plan Goals and Policies, Section 9.5.3, 5-6, City engineering staff reviewed all potentially impacted intersections and roadway segments to identify any physical improvements consistent with the Circulation Element designations. This review included a comparison of potentially impacted segments and intersections with the corresponding designation identified in the General Plan Circulation Element, and any presence of physical or other constraints that would prohibit widening of intersections and/or roadway segments or other physical improvements. At locations where expansion of the existing roadway was necessary to achieve the corresponding General Plan roadway designation, staff reviewed the adjacent land to determine whether expansion would require a significant encroachment on existing adjacent development, such as existing utilities, drainage facilities, bike lanes, and residential/non-residential development. In those locations where significant encroachment on existing adjacent development would occur, expansion of the segment was not recommended. Where expansion of the roadway is not recommended, the intersection was analyzed for the potential to add turn lanes, signal optimization, or other improvements to improve LOS. Text within the Draft EIR, as shown in Chapter 3, Errata, of this Final EIR, as well as Table 9-M and Table 9-N in the TIA have been revised to clarify identified mitigation measures and the reasons why further physical improvements are not available to avoid or lessen potential impacts at certain intersections. Please see also Chapter 3 of this Final EIR as well as the Memorandum, dated January 31, 2020, included as Attachment 2 to this Final EIR. In addition, the project includes PDF-TRA-2, which would implement specific Transportation Demand Management measures to reduce vehicle trips by employees, which comprise the majority of project trips. The transportation analysis did not account for PDF-TRA-2 in its quantitative analysis, and PDF-TRA-2 is not relied upon to reduce or avoid any potential transportation impacts.

5-14b Regarding the need to evaluate a potential alternative site for the proposed project, as detailed in Response to Comment 5-25, in accordance with CEQA Guidelines, Section 15126.6(f)(2), the applicant and the City conducted research to identify a comparably-sized feasible alternative location within the project area and within the Medical Use Overlay district that could be available for the proposed Medical Center expansion project. However, no feasible alternatives sites were found. Please refer to Response to Comment 5-25 for additional discussion.

5-15 This comment asserts that the mitigation measures identified for the Nason Avenue/Iris Avenue intersection will not fully mitigate the impacts. As explained in Section 4.14.7 of the Draft EIR, implementation of the recommended mitigation measures as included in the TIA would improve the operations at this intersection to the acceptable LOS of "C" under all analysis scenarios with the exception of GPBO conditions. This intersection will be built-out as per the General Plan designation with implementation of the proposed improvements. Accordingly, no further expansion of the intersection is recommended. No additional mitigation consistent with the General Plan have been identified for this intersection.

5-16 The north, east and west leg of the intersection of Elsworth Street/Cactus Avenue (Intersection No. 8) are built-out as per the City's General Plan designation and therefore further physical improvements to these legs are not feasible. The south leg of the intersection is under the jurisdiction of March Joint Powers Authority (March JPA). While there is right-of way available in the south leg, because the roadway is under the jurisdiction of March JPA, the City does not have the ability to widen this roadway segment. Nonetheless, to assist with the widening, which would reduce impacts (although not to the extent that the intersection would operate at an acceptable LOS), a new mitigation measure, MM-TRA-54, requiring a fair share fee payment (6.24%) of during Phase I of the project to provide a new northbound through lane, has been added.

5-17 This comment asserts that the EIR does not adequately evaluate the anticipated aesthetic impacts of the proposed project "relative to existing adjacent residential zoned land, to the north and northwest," including the Aquabella Specific Plan. As discussed below, the Draft EIR adequately analyzes aesthetic impacts in accordance with CEQA

Guideline Appendix G, and the comment has not identified a need for further information or analysis.

The comment states that the Draft EIR is “silent on visual impacts from north and northwest of the Project, looking across the Project to the south and east.” However, as the comment itself acknowledges, the Draft EIR analyzed views from the north and northwest from Viewpoint No. 6 (Nason Street and Delphinium Avenue), which looks southeast toward the project. (Draft EIR page 4.1-7.) The comment argues that the analysis from Viewpoint No. 6 is not adequate because it is limited to “viewshed impact to motorists at this location” and considers impacts from 3,000 feet away from the project boundary. The comment further argues that Viewpoint No. 6 demonstrates that the project “will have significant visual impacts” from Viewpoint No. 6 and “even more so from adjacent residential zoned land immediately abutting the Project’s northern boundary.”

The Draft EIR analysis of views from Viewpoint No. 6 adequately evaluates potential impacts to scenic vistas looking across the project from the north and northwest to the south and east. Viewpoint No. 6 is located between existing residential development and vacant land zones for residential development and analyzes views toward the Russell Mountains. Contrary to the comment’s assertion that the analysis of Viewpoint No. 6 is limited to potential impacts to motorists at this location, Viewpoint No. 6 analyzes impacts to pedestrians, motorists and residential properties facing Delphinium Avenue. (Draft EIR page 4.1-7.) Viewpoint No. 6 sufficiently identifies potential impacts to scenic vistas from the Aquabella Specific Plan area. Viewpoint No. 6 is located centrally within the Aquabella Specific Plan area. This location is well situated to illustrate views across the Aquabella Specific Plan area to the project site, and much of the Aquabella Specific Plan would have similar views.

The comment also argues that Figure 4.1-7 in the Draft EIR shows a “significant visual impact” even at a distance of nearly 3,000 feet from the project boundary. However, the comment has not identified any potential impact to a scenic vista shown in Figure 4.1-7. As discussed in detail in the Draft EIR, the project would result in visual changes, including without limitation blocking large portions of the lower elevation terrain of the Russell Mountain foothills from view and increasing the building bulk and scale on the project site. (Draft EIR page 4.1-16.) However, the Draft EIR concluded that the anticipated visual changes do not amount to an adverse impact to a scenic vista. Among other things, the ridgeline of Mount Russell, rocky foothill terrain and the more distant hilly and mountainous landscape remain visible. (Draft EIR page 4.1-16.) As shown by Figure 4.1-7, views of the ridgeline of Mount Russell would continue to be visible from the public right of way, and from residentially zoned and developed land north and south of Delphinium Avenue (which includes portions of the Aquabella Specific Plan area). Viewpoint No. 6 is located centrally within the Aquabella Specific Plan area, is representative of many views within the plan area, and supports the Draft EIR's conclusion that the project does not result in significant adverse impacts to scenic vistas.

From areas further to the northwest of the project site (west of Nason Street), the project site is located even further away and more faintly visible, but again, Viewpoint No. 6 continues to be generally representative of views to the project site and surrounding land uses from the north and northwest.

With respect to locations adjacent to the project site, any view of distant vistas would be more limited from locations close to a structure, including the existing and proposed structures on the project site. Locations adjacent to the project site already experience more limited views, as the existing medical center buildings would limit views from new development on directly adjacent areas. Furthermore, because views of the Mount Russell ridgeline are available from numerous locations in the vicinity, any absence of such views from areas directly adjacent to the project site would not constitute an adverse impact to a scenic vista.

The Draft EIR's evaluation of potential impacts to scenic vistas need not evaluate all future views from the Aquabella Specific Plan area once it is developed. Because development of Aquabella has not yet begun, it would be speculative to attempt to analyze individual views from within the developed plan area. Moreover, CEQA does not protect all views of scenic resources. The City has identified scenic resources and view corridors in Figure 7-2 in the Conservation Element of the City's General Plan. However, the City has not defined scenic vistas to include every view of every scenic resource from every location within the City. In a City surrounded by various landforms, such an approach would foreclose almost all future development.

The comment's concern regarding aesthetic impacts to locations abutting the project site appears to be focused not on impacts to a scenic vista, but rather on the more generalized "visual impacts," from the project buildings. However, "visual impacts" is not a threshold for analyzing aesthetic impacts pursuant to CEQA Guideline Appendix G. Because the project is located in an urbanized area, aesthetic Threshold AES-3 provides that a significant impact would occur if the project conflicts with applicable zoning and other regulations governing scenic quality.

As discussed in the Draft EIR (pages 4.1-18 and 4.1-19), the project is consistent with applicable zoning and other regulations governing scenic quality. The proposed medical uses are permitted by the project site's zoning and General Plan designation, and the project site is located within the Medical Use Overlay district. Table 4.1-1 in the Draft EIR (pages 4.1-18 and 4.1-19) shows that the project is consistent with the most stringent zoning requirements applicable to any portion of the project site. As shown in Table 4.1-1, the proposed project would be consistent with the relevant Zoning Ordinance standards for the

Medical Use Overlay (MUO) and Commercial Zones, including any that directly or indirectly address scenic quality. Table 4.10-1 in Section 4.10, Land Use and Planning, indicates that the project is consistent with applicable General Plan policies related to scenic resources. Among other things, the project would comply with applicable setback and height requirements, and the parking structures would be softened with vegetated walls. The comment has not identified any applicable zoning or other regulations governing scenic quality with which the project does not comply.

With respect to Aesthetic Thresholds AES-1 and AES-4, the comment has not identified any potential impacts that it believes requires further analysis or discussion.

For these reasons, potential aesthetics impacts are adequately evaluated and disclosed within Section 4.1, Aesthetics, of the Draft EIR and no further analysis is required.

5-18 This comment states that the air quality, noise and greenhouse gas analyses in the Draft EIR should be revised following revisions to the Traffic Impact Analysis. As discussed in Response to Comments 5-3 through 5-16, the Traffic Impact Analysis is sufficient and does not require revision or addition. Because there are no changes necessary to the Traffic Impact Analysis, there is no need to update the air quality, noise or greenhouse gas analyses to reflect changes to the Traffic Impact Analysis. No further response is required.

5-19 This comment states that the discussion under Threshold AQ-3 does not adequately describe the specific pollutants of concern that may affect sensitive receptors and must further evaluate potential health impacts associated with project air quality impacts.

The Draft EIR provides a thorough discussion of the criteria pollutants emitted by the project and their health effects. See Draft EIR Section 4.2.2 (pp. 4.2-11 to 4.2-15) Section 4.2.5 (pp. 4.2-48 to 4.2-49) and Appendix B (June 5, 2019 Memorandum, pp. 6-9).

However, as discussed in detail in the Draft EIR, Appendix B (June 5, 2019 Memorandum), there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days. Currently, neither South Coast Air Quality Management District (SCAQMD) nor any air district of which the City is aware has identified a method to connect project-generated criteria air pollutant emissions to specific health effects for individual development projects. Currently, there are no modeling tools that could provide reliable and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects.

Air districts have set thresholds that seek to minimize concentrations of criteria air pollutants through the control of directly emitted emissions and precursors. The

Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety. Further, California air districts (like SCAQMD) have established emission-based thresholds that provide project-level estimates of criteria air pollutant quantities that air basins can accommodate without affecting the attainment dates for the AAQS. As discussed in Section 4.2.5 of the Draft EIR, the proposed project would not exceed the SCAQMD thresholds for VOC, CO, SO_x, PM_{10}, or $PM_{2.5}$. Because the SCAQMD thresholds are based on levels that the SCAB can accommodate without affecting the attainment date for the AAQS, and the AAQS are established to protect public health and welfare, the proposed project is not anticipated to result in health effects associated with VOC, CO, SO_x, PM_{10}, or $PM_{2.5}$.

As discussed in Section 4.2.5 of the Draft EIR, project operation exceeds the SCAQMD significance thresholds for NO_x. Accordingly, and as explained in Sections 4.2.2 and 4.2.5 of the Draft EIR, the project would potentially result in health effects associated with this pollutant. The health effects generally associated with NO_x are discussed in Draft EIR Sections 4.2.2 and Appendix B (June 5, 2019 Memorandum at pp. 25-26). Health effects associated with NO_x include lung irritation and enhanced allergic responses, and health impacts that result from NO_2 and NO_x include respiratory irritation. Although the proposed project operations would generate NO_x emissions that would exceed the SCAQMD mass daily thresholds, it is unlikely that operation of the proposed project would contribute to exceedances of the NAAQS and CAAQS for NO_2 because the SCAB is designated as in attainment of the NAAQS and CAAQS for NO_2 and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards.

However, as explained above and in further detail in the Draft EIR, no quantitative methods have been demonstrated to reliably and meaningfully translate the project's criteria air pollutant mass emission estimates to specific health effects. No California air district or other expert agency/entity has published guidance on this issue, there are currently no modeling tools that can provide reliable and meaningful additional information regarding the potential health effects or potential for further nonattainment days from criteria air pollutants generated by the project. See Draft EIR Section 4.2.5 pages 4.2-48 and 4.2-49; Appendix B (June 5, 2019 Memorandum). Accordingly, there is no available methodology to identify the more specific health effects that would result from the project's significant impact for NO_x.

The Draft EIR also evaluated the impacts of the project during construction and operation with respect to multiple pathways including a carbon monoxide (CO) hotspots analysis, localized significance threshold (LST) analysis, and health risk analysis (HRA). The CO hotspots analysis evaluated quantitatively the concentration of CO emissions from the peak traffic caused by the project and determined it to be less than significant. (Draft EIR pages 4.2-42 through 4.2-45). The LST analysis, as recommended and guided by the SCAQMD, evaluated the impact of NO_x, CO, PM_{10}, and $PM_{2.5}$ on the nearest sensitive receptors to the project. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. The LST analysis also found the project to have a less than significant impact during construction and operation (Draft EIR pages 4.2-45 through 4.2-48). The HRA evaluated the cancer and non-cancer health impacts from exposure of toxic air contaminants emitted during construction and operation of the project. The thresholds set by the SCAQMD are protective of health. The HRA found the project to have a less than significant impact during construction and operation (Draft EIR pages 4.2-45 through 4.2-48).

Because the Draft EIR provides a comprehensive discussion of the criteria pollutants and their potential health effects, an analysis of the project's impacts and a thorough explanation as to why the current state of environmental science modeling does not permit the Draft EIR to correlate the project's criteria air pollutant emissions to more specific health effects or potential additional nonattainment days, no further response is required.

5-20 Please refer to Response to Comment 2-7 for a detailed response as to why emissions are not understated in the analysis. Emissions for both construction and operation of each project phase are clearly discussed in Section 4.2 of the Draft EIR. However, as discussed in detail in Response to Comment 2-7, there is no applicable threshold for combined emissions of construction and operational emissions. The case study cited does not relate to the overlap of construction and operational emissions and thus is not relevant. No further response is required or necessary.

5-21 As discussed in Section 4.2.6 of the Draft EIR, the exceedance of NO_x emissions is driven by natural gas consumption at the Energy Center and mobile sources. The Energy Center is essential to the operation of the hospital because it provides the necessary power source to provide heat and hot water and to operate life-saving and other medical equipment and devices. It is also necessary in order for the hospital to comply with applicable regulations that require redundancy for back-up power sources. Such applicable regulations include California Building Code, Chapter 16A, Subsection 1616A.1.40, which requires an on-site emergency system incorporated into the building electrical system for critical care areas and California Health and Safety Code Section 41514.1(b), which incorporates the National Fire Protection Association 110: Standard for Emergency and Standby Power Systems adopted by the Life Safety Code and the federal Centers for Medicare and Medicaid Services. Furthermore, the project is required to implement emergency power and lighting systems in accordance with 22 CCR § 70841, *Emergency Lighting and Power System*. The boilers and emergency generators added to the Energy Center would utilize current, up to date technology. The project would include the removal of two boilers and one generator, which are older equipment with significantly higher emission rates. The boilers would be subject to AQMD Rules 1146, 1146,1, or 1146.2, which limit NO_x emissions, depending on their size. Both boilers and emergency generators would be subject to SCAQMD operational permits, ensuring the operation and maintenance meets their stringent requirements. The emergency generators would be subject to AQMD Rule 1110.1. The new emergency generators would be the highest EPA Tier 4 certified engines. There are no alternative energy power sources sufficient to meet this hospital's specialized power needs, and the comment has not identified any alternative power sources or additional mitigation for the project to consider.

With respect to mobile sources, the project would comply with the requirements of SCAQMD Rule 2202, *On-Road Motor Vehicle Mitigation Options* (SCAQMD 2014), and would implement the Transportation Demand Management (TDM) measures contained within PDF-TRA-2 (Draft EIR Section 4.14.4) to reduce vehicle trips by employees, which comprise the majority of project trips (See Appendix I of the Draft EIR). The TDM measures contained within PDF-TRA-2 include guaranteed rides home for those using carpool or other ride share options, bicycle lockers, dissemination of alternative transportation information through employee communication, rideshare events, and new hire orientation, and provision of a transportation coordinator to facilitate alternative transportation options. Additional TDM measures for patients and visitors, who are typically occasional visitors to the project site, are not feasible. A shuttle service may be used to provide transportation to the medical center in highly-dense areas from locations that have ample parking or access to public transportation. However, the project site is not located in or adjacent to such a highly-dense area and is intended to serve the more suburban areas of Moreno Valley and surrounding region.

5-22 This comment states that the project's emissions were not adequately addressed with mitigation as they exceeded the SCAQMD GHG "threshold." As explained in Section 4.7.1 and Section 4.7.3 of the Draft EIR, the 10,000 MT CO_2e/year threshold to which the comment refers was adopted by SCAQMD in 2008 as an interim threshold for stationary source/industrial projects for which the SCAQMD is the lead agency. The project is not an industrial facility and the SCAQMD is not the lead agency, and the threshold would not apply to the project. The SCAQMD has developed some proposals for analyzing GHG, but has not finalized or adopted any threshold applicable to the project nor has the City adopted a numeric threshold applicable to this project. In the absence of an applicable, adopted numeric threshold, the project was analyzed consistent with CEQA Guidelines Section 15064.4(b) by considering whether the project complies with the 2016 RTP/SCS as the most directly applicable plan, policy, regulation, or requirement adopted to implement a statewide, regional or local plan for the reduction or mitigation of GHG emissions. See Draft EIR pages 4.7-21 through 4.7-22; 4.7-35 through 4.7-36. Because the project is consistent with the 2016 RTP/SCS, the project would result in a less than significant impact related to GHG emissions and mitigation is not required.

The comment also asserts that project design feature PDF-GHG-1 is not specifically reflected in the project design plans and must be required as a mitigation measure. PDF-GHG-1 provides that the project would obtain LEED Gold certification or its equivalent for the buildings developed on the project site and identifies several components that may be utilized to achieve the LEED Gold certification, or its equivalent. PDF-GHG-1 is expressly included as part of the project description, and would be enforceable if the project is approved. See Draft EIR Section 4.7.4. As technology is constantly evolving, and since several project buildings would not be fully designed or constructed for several years, the project has not yet finalized which specific components would be used to achieve the standard of LEED Gold or its equivalent. However, because LEED Gold certification or its equivalent is an identifiable standard (United States Green Building Council [USGBC] 2016), the fact that PDF-GHG-1 does not specify with certainty the precise manner in which it would achieve this standard does not render the PDF unenforceable.

PDF-GHG-1 is part of the proposed project and is not a mitigation measure. The Draft EIR provided a quantification of the project's anticipated GHG emissions, and this quantification did not include any reduction based on the project's achievement of LEED Gold certification or its equivalent, and did not assume the use of any of the potential strategies for achieving LEED Gold certification or its equivalent (Draft EIR Section 4.7.5). Thus, PDF-GHG-1 does not affect the Draft EIR's disclosure of the project's anticipated quantitative emissions or the evaluation of any necessary mitigation.

5-23 This comment asserts that all project design features (PDFs) should be mitigation measures. The project includes a total of five PDFs. With respect to PDF-GHG-1, please see Response to Comment 5-22. The other four PDFs are PDF-AQ-1, PDF-AQ-2, PDF-TRA-1 and PDF-TRA-2. If the project is approved all PDFs would be required and enforced as part of the project.

Including the PDFs as part of the project does not affect the Draft EIR's disclosure of the project's potential impacts or the evaluation of any necessary mitigation. PDF-AQ-1, PDF-AQ-2 and PDF-TRA-1 relate to project construction. The Draft EIR did not account for PDF-AQ-1 or PDF-TRA-1 in any quantitative analysis. PDF-AQ-2 and PDF-TRA-2 each include requirements that were taken into account in the Draft EIR analysis for air quality, but the analysis discloses the project's construction emissions both with and without the relevant requirements of these PDFs. PDF-AQ-2 includes a requirement that all construction equipment be equipped with Tier 4 Final diesel engines or better. The Draft EIR construction emission analysis accounted for the Tier 4 Final diesel engine requirement of PDF-AQ-2, but analyzed project construction emissions both with and without the Tier 4 Final diesel engine requirement. The CalEEMod output files provided in Appendix B to the Draft EIR (Sections 2.1 within each Annual, Summer, and Winter CalEEMod output file) show both an “unmitigated” and “mitigated” summary. The only “mitigation” assumed in the CalEEMod construction analysis is the Tier 4 Final equipment requirement in PDF-AQ-2. The mitigated construction summary in Appendix B, Section 2.1, for ROG, NO_x, CO, SO_2, Exhaust PM_{10}, and Exhaust $PM_{2.5}$ reflect the use of Tier 4 Final equipment. The Tier 4 Final equipment does not impact the Fugitive PM_{10} of Fugitive $PM_{2.5}$ emissions. PDF-TRA-1 includes requirements for four specific TDM measures, which were accounted for within the project’s operational emissions modeling. The Draft EIR analyzed project operational emissions both with and without the TDM measures of PDF-TRA-1. The CalEEMod output files provided in Appendix B to the Draft EIR (Sections 4.0 within each Annual, Summer, and Winter CalEEMod output file) show both an “unmitigated” and “mitigated” summary. The only “mitigation” assumed in the CalEEMod operational analysis is the TDM measure requirements in PDF-TRA-2. The mitigated operational summary in Section 2.2 for ROG, NO_x, CO, SO_2, PM_{10} Total, and $PM_{2.5}$ Total reflect the use of the TDM strategies in PDF-TRA-2.

5-24 The comment indicates that the off-site flooding impacts are unclear and references numerous apparently contradictory statements. The comment requests that the EIR identify if downstream property owners would be affected, and if so, if a drainage easement or similar agreement is required. The comment requests that the apparent error be corrected and the EIR be recirculated for proper public review and comment.

As indicated in Threshold HYD-3, “a portion of both Phase II parking structures would be located within FEMA Special Flood Hazard Zone A (Figure 3-4, Phase II Site Plan; Figure 4.9-2, Flood Zones). As a result, project construction would impede and redirect flood flows in the northwest portion of each parking structure, which in turn could result in a minor increase in downstream flood flows (i.e., rate and volume). In general, construction and regrading of the floodplain can obstruct or divert water to other areas. Construction in the floodplain reduces the ability of the floodplain to store excess water, sending more water downstream and causing floods to rise to higher levels. This also increases floodwater velocity (FEMA 2019). However, as previously described, with respect to increased stormwater runoff rates, there are no anticipated negative downstream or upstream impacts because the project is located in a HCOC exempt area, which applies to all areas serviced by downstream conveyance channels draining to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River

(Appendix G-1). Put differently, the fact that an area is "exempt" does not mean that the analysis is skipped and the impact is ignored; rather, it is a recognition that the area is served by adequate downstream facilities such that there would be no significant impact. As a result, construction of portions of the parking structures within the flood zone would not likely result in substantial downstream flooding."

The text acknowledges the potential downstream effects of constructing structures in the floodplain, but the HCOC exemption indicates that because an adequate sump is located downstream of the project site, the incremental increase in diverted flood flows due to construction of the parking structures would be absorbed by sumps (e.g., large reservoirs or rivers), which are maintained for flood control. As indicated previously in the discussion under Threshold HYD-1, "An exemption applies if all downstream conveyance channels to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River), which will receive runoff from the project, are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps. The project site generally drains northwest toward Nason Street, to an existing canal that conveys on-site flows southwest to the San Jacinto River, Canyon Lake (Railroad Canyon Reservoir), and Lake Elsinore. Canyon Lake and Lake Elsinore are engineered and regularly maintained." In other words, these relatively large water bodies (or sumps), which are regularly maintained with respect to flood control, would be capable of absorbing the incremental increase in flood flows due to the project related flood impediment. This fact, in combination with the drainage analysis (Appendix G-1), which, based on pre-development and post-development stormwater runoff, concludes that the project would have no negative downstream or upstream affects.

However, in response to this comment, the text has been revised to separate out the project hydrology analysis (Appendix G-2) from the FEMA flood zone impact analysis, for more clarity, as the hydrology analysis did not consider potential impacts associated with the flood plain. Those are two separate issues. The flood zone impact analysis demonstrates how (in general) building in the flood zone can impede and redirect flood flows, which can result in adverse downstream (or upstream) impacts. However, in this case, the project site is located in an HCOC exempt area; therefore, the downstream reservoirs can absorb any incremental increased flow associated with constructing the parking lots.

In addition, revised drainage and water quality reports (Appendices G-1 and G-2) were completed following publication of the Draft EIR. The revised reports reflect two changes in the project design, including: 1) new underground storage vaults in the eastern portion of the project site, in order to reduce post-construction runoff to less than or equal to existing conditions, for the 100-year, 24-hour storm event; 2) change from sand filter basins to biofiltration basins. Therefore, the text of the Draft EIR has been revised to reflect these new reports.

The text of Section 4.9, Hydrology and Water Quality, has been revised. Specifically, page 4.9-1 of the Draft EIR is revised to read as follows:

4.9 Hydrology and Water Quality

This section describes the existing hydrology and water quality of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Kaiser Permanente Moreno Valley Medical Center Project (project). The analysis is based, in part, on the following reports, which pertain to Phases I, II, and III (combined) and are included in Appendices G-1 and G-2, respectively:

- Project Specific Water Quality Management Plan, Kaiser Permanente Moreno Valley, prepared by Kaiser Permanente (~~January~~ September 2019)
- Preliminary Technical Drainage Study, Kaiser Permanente Moreno Valley Medical Center, City of Moreno Valley, California, prepared by Michael Baker International (~~January~~ August 2019)

The text on pages 4.9-7 and 4.9-8 of the Draft EIR are revised to read as follows:

Storm Drainage and Flood Control

The project site is relatively flat to gently sloping to the northwest, with localized moderate to steep, approximately 10-foot high, graded slopes around the western perimeter of the site (Figure 4.9-3, Existing Drainage). Infiltration testing indicates underlying soils consist of sandy silt, with a low infiltration rate of 0.05 inches per hour. The project site covers two parcels, which each contain stormwater runoff individually, with separate outflows in the northwest corners of the (west and east) parcels. An approximate 5-foot deep stormwater detention basin and associated overflow pipe is present in the northwest corner of the western parcel. Existing runoff from the northwest corner of the western parcel is ~~32~~ 23.19 cubic feet per second (cfs) for the 10-year storm and ~~48~~ 34.56 cfs for the 100-year storm. Similarly, existing runoff from the northwest corner of the eastern parcel is ~~16~~ 26.39 cfs for the 10-year storm and ~~24~~ 39.08 cfs for the 100-year storm (Appendix G-2).

Existing surface drainage features along the southern perimeter of the site prevents stormwater run-on from the adjacent Iris Avenue. Berms along the western and eastern site perimeter prevent stormwater run-off and run-on, respectively. No storm drains are present within the boundaries of the site; however, Iris Avenue to the south is a public paved road with curb, gutter, and storm drain infrastructure, which conveys off-site flows from the south. Stormwater at the site generally drains northwest toward Nason Street, to an existing canal that conveys flows southwest to the San Jacinto River, Canyon Lake (Railroad Canyon Reservoir), and then to Lake Elsinore (Appendix ~~G-2~~ G-1, G-2).

The text within Threshold HYD-1, on pages 4.9-12 through 4.9-14, of the Draft EIR is revised to read as follows:

The project-specific water quality management plan (Appendix G-1) has been designed to accommodate stormwater runoff from all three project phases. This plan proposes to divide the project site into six separate drainage areas. Each drainage area would flow into either a ~~sand filter~~ bioretention basin~~,~~ or an underground storage vault and associated modular wetland system~~, or an underground storage pipe system~~ (Figure 4.9-4, Proposed Drainage). The bioretention ~~sand filter~~ basins are a type of treatment control BMP, where the entire feature is constructed as a stormwater filter, using an engineered soil media bed, with 30% pore space, ~~a sand~~ ~~bed~~ above an underdrain system. Stormwater would enter~~s~~ the bioretention basins from storm drains, which collect stormwater runoff from paved and landscaped areas. ~~sand filter basin at its forebay, where trash and sediment accumulate, or through overland sheet flow. Overland sheet flow into the sand filter basin is biofiltered through the vegetated side slopes or other pretreatment~~ Flows would pass into the engineered soil ~~sand~~ filter surcharge zone and ~~are~~ gradually filtered through the underlying soil ~~sand~~ bed. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff, thereby preventing clogging and allowing the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. The underdrain would gradually dewater the sand bed and discharge the filtered runoff to a nearby channel, swale, or storm drain. An overflow would be provided to drain the volume in excess of the design capture volume, or to help drain the system if clogging were to occur. The primary advantage of the bioretention ~~sand filter~~ basin is its effectiveness in removing pollutants where infiltration into the underlying soil is not practical, and where site conditions preclude the use of a bioretention facility ~~The primary disadvantage is a potential for clogging if silts and clays are allowed to flow into the basin.~~ ~~In addition, the performance of sand filter basins relies heavily on it being regularly and properly maintained. While this BMP is not considered a low impact development BMP, when designed in accordance with the water quality management guidance documents, a sand filter is considered to be a highly effective treatment control BMP~~ (Riverside County Flood Control and Water Conservation District 2011).

The proposed underground storage vault ~~and underground storage pipe~~ system would include a ~~biofiltration~~ modular wetland system designed to primarily remove oil and grease. These treatment control BMP features, which are designed to accommodate flow from Phases I, II, and III in the eastern portion of the project, are designed to have a high removal efficiency of oil/grease and trash/debris from stormwater runoff (Appendix ~~G-2~~ G-1).

Based on the Riverside County Water Quality Management Plan guidance document, the preliminary project-specific water quality management plan describes and illustrates how the drainage for the entire site will comply with the water quality management plan requirements, but does not specify when BMPs must be implemented in phased projects. The obligation to install stormwater BMPs for the entire project is met if BMPs are constructed with the requisite capacity to serve the entire project (Santa Ana RWQCB 2012), but all stormwater treatment BMPs may not be required to be constructed during Phase I. Existing stormwater flows off site via two concrete spillways, from the northwest corners of the western and eastern project parcels (Figure 4.9-3).

Each of the three phases would include an increase in impervious surfaces. Phase I would include an increase in impervious surfaces as a result of new Diagnostic and Treatment Building expansion and new Central Utility Plant construction (Figure 3-1, Phase I Site Plan). Similarly, Phases II and III would include an increase in impervious surfaces as a result of new medical buildings, new parking structures, and primary hospital building expansion (Figure 3-4, Phase II Site Plan, and Figure 3-5, Phase III Site Plan). However, the preliminary project-specific water quality management plan does not require that BMPs be implemented in each phase to address the corresponding increase in impervious surfaces. Accordingly, mitigation is required to ensure that appropriate stormwater BMPs are implemented in each phase in order to treat stormwater generated from the increase in impervious surfaces in each phase. Impacts are considered less than significant with implementation of MM-HYD-1, MM-HYD-2, and MM-HYD-~~2~~ 3.

~~As discussed above, sand filter basins require maintenance to avoid clogging from silts and clays. As such, impacts are considered less than significant with implementation of MM-HYD-3, which requires inspection and maintenance activities that shall be implemented following basin construction.~~

In addition to incorporating these low impact development BMPs to ensure water quality treatment of runoff, the applicant may be required to provide additional low impact development principles or BMPs to avoid creating a hydrologic condition of concern (HCOC), or to mitigate any HCOC that may be created (Santa Ana

RWQCB 2012). However, the proposed project would be exempt from additional hydromodification because the project is located in a HCOC exempt area (Figure 4.9-5, Hydrologic Condition of Concern – Exempt Areas). An exemption applies if all downstream conveyance channels to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River), which will receive runoff from the project, are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps. The project site generally drains northwest toward Nason Street, to an existing canal that conveys on-site flows southwest to the San Jacinto River, Canyon Lake (Railroad Canyon Reservoir), and Lake Elsinore. Canyon Lake and Lake Elsinore are engineered and regularly maintained. No sensitive stream habitats would be adversely affected by runoff from the project (Appendix G-1).

In summary, although the project proposes stormwater treatment BMPs for the entire project site, as indicated in the Water Quality Management Plan (Appendix G-1), if stormwater treatment BMPs are not constructed in sequence with phased construction, residual concentrations of oil and grease and other contaminants could be transported off site in stormwater, potentially impacting downstream beneficial uses of water bodies. Mitigation measures **MM-HYD-1, MM-HYD-2,** and **MM-HYD-~~2~~ 3** will ensure that BMPs correspond to phases in order to address potential impacts of each phase~~.~~ and ~~In addition, the proposed sand filter basins have the potential clog from silts and clays. Mitigation Measure **MM-HYD-3** would ensure~~ that these basins are adequately maintained to function properly. Impacts are considered **less than significant with implementation of MM-HYD-1, MM-HYD-2, and MM-HYD-3**.

The text within Threshold HYD-3 on pages 4.9-15 through 4.9-17, of the Draft EIR is revised to read as follows:

Phases I, II, and III

Drainage

The project site is relatively flat to gently sloping to the northwest, with localized moderate to steep, approximately 10-foot high, graded slopes around the western perimeter of the site (Figure 4.9-3). Infiltration testing indicates underlying soils consist of sandy silt, with a low infiltration rate of 0.05 inches per hour. The project site covers two parcels, which each contain stormwater runoff individually, with separate outflows in the northwest corners of the (west and east) parcels. An approximate 5-foot deep stormwater detention basin and associated overflow pipe is present in the northwest corner of the western parcel. No storm drains are present within the boundaries of the site and the project site does not contain a drainage channel, stream, or river.

The proposed project would involve construction of buildings, multilevel aboveground parking structures, and ancillary walkways and driveways. As a result, most of the project would be covered with impervious surfaces post-construction, which in turn could potentially result in increased off-site runoff. Based on the project-specific water quality management plan (Appendix G-1), the project site has been divided into six separate drainage areas. Each drainage area would flow into either a biofiltration ~~sand filter~~ basin~~,~~ or an underground storage vault~~, or an underground storage pipe system~~ and associated modular wetland system (Figure 4.9-4). As discussed in Threshold HYD-2, these BMP features, which are designed to accommodate stormwater flow from Phases I, II, and III, would retain low impact development BMP design capture volumes, based on the Riverside County water quality management plan guidance documents (Santa Ana RWQCB 2012; Riverside County Flood Control and Water Conservation District 2011).

These low impact development BMP features would not only improve water quality, but also reduce off-site stormwater flow rates. As previously discussed, infiltration testing indicates underlying soils consist of sandy silt, with an infiltration rate of 0.05 inches per hour. Based on this infiltration rate, infiltration BMPs would not be feasible at the project site. In addition, no downstream regional and/or sub-regional low impact development BMPs exist or are available for use by the project. As a result, the entire design capture volume must be accommodated by project BMPs (Appendix G-1). In cases where excess volume cannot be infiltrated or captured and used, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year, 24-hour peak flow, unless the project is located in a HCOC exempt area (Santa Ana RWQCB 2012).

As illustrated in Table 4.9-1, although the stormwater runoff rates from the northwest overflow drain would decrease in the western parcel subsequent to project construction, stormwater runoff rates would increase in the eastern parcel. In addition, post-construction runoff from the northwest corners of the western and eastern parcels, combined, would increase for the 10-year and 100-year storm event ~~(Appendix G-1~~). Although 2-year, 24-hour peak flows have not been calculated for this project, these increased runoff rates would be greater than 110% of the pre-development 10-year and 100-year peak flows. Therefore, underground storage vaults would be installed in the eastern parcel to limit increased project related runoff to less than or equal to existing conditions. The storage vaults are sized for the 100-year, 24-hour storm event (Appendix G-2).

Table 4.9-1
Existing and Proposed Drainage

	Existing 10-Year Runoff Rate	Post-Construction 10-Year Runoff Rate	Change in Runoff Rate	Existing 100-Year Runoff Rate	Post-Construction 100-Year Runoff Rate	Change in Runoff Rate
West Parcel	23.19 ~~32.58~~ cfs	~~19.21~~ 19.16 cfs	~~-13.37~~ -4.03 cfs	~~48.25~~ 34.56 cfs	~~28.18~~ 28.01 cfs	~~-20.07~~ -6.55 cfs
	Existing 10-Year Runoff Rate	**Post-Construction 10-Year Runoff Rate**	**Change in Runoff Rate**	**Existing 100-Year Runoff Rate**	**Post-Construction 100-Year Runoff Rate**	**Change in Runoff Rate**
East Parcel	~~16.22~~ 26.39 cfs	~~36.56~~ 37.48 cfs	~~+20.34~~ +11.09 cfs	~~23.77~~ 39.08 cfs	~~54.73~~ 54.46 cfs	~~+30.96~~ +15.38 cfs
	Existing 10-Year Runoff Rate	**Post-Construction 10-Year Runoff Rate**	**Change in Runoff Rate**	**Existing 100-Year Runoff Rate**	**Post-Construction 100-Year Runoff Rate**	**Change in Runoff Rate**
West and East Parcel Combined	~~48.80~~ 49.58 cfs	~~55.77~~ 56.64 cfs	~~+6.97~~ +7.06 cfs	~~72.02~~ 73.64 cfs	~~82.91~~ 82.47 cfs	~~+10.89~~ +8.83 cfs

cfs = cubic feet per second.

~~However, as previously described for Threshold HYD-1, the proposed project would be exempt from additional hydromodification because the project is located in a HCOC exempt area (Figure 4.9-5). An exemption applies if all downstream conveyance channels to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River), which will receive runoff from the project, are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.~~

~~The project site generally drains northwest toward Nason Street, to an existing canal that conveys on-site flows southwest to the San Jacinto River, Canyon Lake (Railroad Canyon Reservoir), and Lake Elsinore. Canyon Lake and Lake Elsinore are engineered and regularly maintained. No sensitive stream habitats would be adversely affected by runoff from the project (Appendix G-1). In addition, with respect to increased stormwater runoff rates, there are no anticipated negative downstream or upstream impacts (Appendix G-1). As a result, increased stormwater runoff rates would not likely result in substantial downstream erosion or flooding as a result of exceedance of existing drainage system capacities.~~

Flood Zone

~~In addition, a~~ The drainage analysis provided above, which is based on Appendix G-1 and Appendix G-2, does not consider that a portion of the project site is located within a mapped flood hazard zone. A portion of both Phase II parking structures would be located within FEMA Special Flood Hazard Zone A (Figure 3-4, Phase II Site Plan; Figure 4.9-2, Flood Zones). As a result, project construction would incrementally impede and redirect flood flows in the northwest portion of each parking structure, which in turn could result in a minor increase in downstream flood flows (i.e., rate and volume). In general, construction and regrading of the floodplain can obstruct or divert water to other areas. Construction in the floodplain reduces the ability of the floodplain to store excess water, sending more water downstream and causing floods to rise to higher levels. This also increases floodwater velocity (FEMA 2019).

However, ~~as previously described,~~ with respect to incrementally increased stormwater runoff rates, there are no anticipated negative downstream or upstream impacts because the project is located in a HCOC exempt area, which applies to all downstream conveyance channels to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River (Appendix G-1). An exemption applies if all downstream conveyance channels to an adequate sump are engineered and regularly maintained to ensure design flow capacity. These relatively large downstream water bodies, which are regularly maintained for flood control purposes, would be able to absorb any minor increase in flood flows associated with partial construction of the parking lots within the floodplain. As a result, construction of portions of the parking structures within the flood zone would not impede flood flows such that ~~likely result in~~ ~~substantial~~ downstream flooding would occur and downstream property owners would not be affected.

Conclusion

In summary, the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Although project construction would partially impede or redirect flood flows, no ~~substantial~~ downstream flooding would occur. Impacts are considered **less than significant** and no mitigation is required.

Section 4.9.5, Mitigation Measures, on pages 4.9-18 and 4.9-19, of the Draft EIR are revised to read as follows:

4.9.5 Mitigation Measures

The following mitigation measures would reduce impacts related to hydrology and water quality to a level below significance.

MM-HYD-1 Treatment control Best Management Practice (BMP) features proposed for the ~~north~~ eastern project area, including ~~an~~ underground storage vaults and a modular wetland system ~~an underground storage pipe system~~ (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase I of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley.

MM-HYD-2 Treatment control BMP features proposed for the ~~southern~~ western project area, including multiple bioretention ~~sand-filled detention~~ basins (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase II of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley.

MM-HYD-3 Consistent with the Design Handbook for Low Impact Development Best Management Practices (Riverside County Flood Control Water Conservation District 2011), Section 3.5 – Bioretention Basins, Inspection and Maintenance Schedule ~~3.7 – Sand Filter Basins,~~

~~Table 1- Recommended Inspection and Maintenance Activities for Sand Filter Basins~~, the following inspection and maintenance activities shall be implemented following basin construction:

1) Ongoing, the applicant shall:
    a) Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance areas.
    b) Remove trash and debris.
    c) Replace damaged grass and/or plants.
    d) Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
2) After storm events, the applicant shall inspect areas for ponding.
3) Annually, the applicant shall inspect/clean inlets and outlets.
4) ~~Semi-monthly, including just before the annual storm season and following rainfall events, the applicant shall:~~
    a) ~~Complete routine maintenance and inspection.~~
    b) ~~Remove debris and litter from the entire basin to minimize filter clogging and to improve aesthetics.~~
    c) ~~Check for obvious problems, especially filter clogging and signs of long-term ponding. Repair as needed. Address odor, insects, and overgrowth issues associated with stagnant or standing water in the basin bottom. There should be no long-term ponding of water.~~
    d) ~~Check for erosion and sediment laden areas in the basin. Repair as needed. Clean forebay if needed.~~
    e) ~~Revegetate side slopes where needed.~~
5) ~~Annually, if possible, schedule inspections within 72 hours after a significant rainfall, including:~~
    a) ~~Inspection of hydraulic and structural facilities. Examine the overflow outlet for clogging, the embankment and spillway integrity, and damage to any structural element.~~
    b) ~~Check side slopes and embankments for erosion, slumping, and overgrowth.~~

c) ~~Inspect the sand media at the filter drain to verify it is allowing acceptable infiltration. Annually scarify the top 3 inches by raking the filter drain's sand surface.~~

d) ~~Check the filter drain underdrains for damage or clogging. Repair as needed.~~

e) ~~Repair basin inlets, outlets, forebays, and energy dissipaters whenever damage is discovered.~~

f) ~~No water should be present 72 hours after an event. No long-term standing water should be present at all. No algae formation should be visible. Correct problems as needed.~~

Additionally, the following reference is added to Section 4.9.7, References Cited, on page 4.9-20 of the Draft EIR:

Riverside County Flood Control. 2017. Hydromodification Susceptibility Documentation Report and Mapping: Santa Ana Region. January 18, 2017. Online version: http://rcflood.org/downloads/NPDES/Documents/SA_WAP/AppA_HydromodificationSusceptibilityReport.pdf/.

These text revisions do not warrant recirculation of the Draft EIR as they simply clarify the intent of the impact evaluation, update the analysis to reflect the use of bioretention baisns, and correct a clerical error, respectively, and do not provide significant new information that creates a new significant impact or mitigation measure, or increases the severity of an impact.

5-25 This comment asserts that the Draft EIR limits alternative sites and makes unsubstantiated statements about the Applicant's inability to acquire other site(s) and that alternative sites would result in similar, if not more, impacts. As discussed on pages 7-4 and 7-5 in Section 7 of the Draft EIR, in accordance with CEQA Guidelines, Section 15126.6(f)(2), the applicant and the City attempted to identify a comparably-sized feasible alternative location within the project area and within the Medical Use Overlay district that could be available for the proposed Medical Center expansion project. Per CEQA Guidelines, Section 15126.6 (f)(2)(A), the key question and first step in analysis of the alternative location is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location.

Per Section 9.07.040 of the Moreno Valley Municipal Code, the primary purpose of the Medical Use Overlay district is to implement the general plan concept of creating a medical corridor by limiting land uses to those that are supportive of and compatible with the city's two existing hospitals. The General Plan has identified the two existing hospitals as the intended locations for hospitals in the City. By locating the project on an alternative site outside the boundaries of the existing Medical Use Overlay district, the project would be in direct conflict with the intent of the City's General Plan and Municipal Code of concentrating medical uses within the two existing hospital areas, and would result in potential new land use impacts.

While hospital and medical uses are permitted or conditionally permitted in mixed use, commercial, office and industrial areas within the City as shown in Municipal Code Section 9.02.020, Permitted Uses Table, the express intent of the Medical Use Overlay is "to implement the general plan concept of creating a medical corridor by limiting land uses to those that are supportive of and compatible with the city's two existing hospitals. The specific purposes of the medical use overlay (MUO) district are to create and maintain a diversity of medical and supportive uses in the vicinity of the Riverside County Regional Medical Center and the Moreno Valley Community Hospital" (now known as the Kaiser Permanente Moreno Valley Medical Center).

In addition, the project objectives include the expansion and addition of services and facilities to complement the existing hospital and medical center, and to make repairs and upgrades (including energy and seismic upgrades) to the existing medical center facilities. These objectives cannot be realistically achieved by locating the project outside of the Medical Use Overlay zone.

Furthermore, there are few if any similarly sized sites under single ownership in the project area. Kaiser could foreseeably assemble, lease, or purchase land for certain components of the proposed project, such as medical office space, in nearby office parks. However, unless the existing Medical Center campus were also relocated to an alternative site along with the proposed expansion, an alternative site would split the proposed medical center into two separate sites. This could result in greater automobile trips than the proposed project since this would force doctors to travel between the medical offices and the main hospital campus. Additionally, while Kaiser owns the project site it does not own any alternative sites, and thus would have to acquire new land. It is not guaranteed that Kaiser could acquire an alternative site that would be zoned for hospital and medical office uses.

For the reasons discussed above, and also within the Draft EIR, alternate sites capable of accommodating the entire project are considered infeasible and were not carried forward in the alternatives analysis.

5-26 This comment asserts that the list of cumulative projects appears incomplete; however, no projects are mentioned by the commenter demonstrating that the cumulative projects list is incomplete. In addition, see Responses to Comments 5-4 and 5-5. No further revisions to the cumulative projects list or analysis are required.

5-27 This comment identifies typos in the Executive Summary of the Draft EIR that should be corrected. In response to this comment, the following text edits are incorporated into the Draft EIR in the form of an errata, as detailed in Chapter 3 of this Final EIR.

- Relevant Plans, Policies, and Ordinances – This subsection describes the laws, regulations, ordinances, plans, and policies applicable to the environmental issue area and the proposed <u>project</u>.
- Existing Conditions – This subsection describes the physical environmental conditions in the vicinity of the proposed project at the time of publication of the Notice of Preparation. The environmental setting establishes the baseline conditions by which the ~~County~~ <u>City</u> will determine whether specific project-related impacts are significant.

These text revisions do not warrant recirculation of the Draft EIR as they simply correct a clerical error and. do not provide significant new information that creates a new significant impact or mitigation measure, or increases the severity of an impact.

5-28 The commenter requests that the EIR identify potential project and cumulative traffic impacts as an "Area of Known Controversy." In response to this comment, the text on page ES-9 of the Draft EIR is revised to read as follows:

- Air quality emission<u>s</u> during construction and from traffic
- Cultural and Tribal Cultural Resources in the project vicinity
- Accessibility to transit
- Impacts to surrounding land uses
- <u>Project-level and cumulative traffic impacts</u>

These text revisions do not warrant recirculation of the Draft EIR as they simply correct a clerical error and. do not provide significant new information that creates a new significant impact or mitigation measure, or increases the severity of an impact.

5-29 This comment asserts that there is a typo on page ES-19 under Threshold GEO-1 and that the text should be revised to read "known" fault. Upon review of this threshold in Table ES-2 on page ES-19 of the Draft EIR, this typo has not been identified. As such, no revisions or further response to this comment is provided.

5-30 This comment asserts that the text under Threshold PUB-1 on page ES-33 of the Draft EIR repeats itself. Upon review of this threshold in Table ES-2 on page ES-33 of the Draft EIR, this text matches the text in Appendix G of the 2019 CEQA Guidelines as well as the text of Threshold PUB-1 on page 4.13-10 of the Draft EIR. As such, no revisions or further response to this comment is provided.

5-31 This comment suggests that the Executive Summary should include a discussion of alternatives considered but rejected. Per CEQA Guidelines Section 15123(b)(1), the summary of the Draft EIR shall identify "Each significant effect with proposed mitigation measures wand alternatives that would reduce or avoid that effect." Additionally, per CEQA Guidelines Section 15123(b)(3), the Draft EIR shall include "Issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects." CEQA Guidelines do not require that the Executive Summary of the Draft EIR include a discussion of alternatives considered but rejected. As such, the Executive Summary within the Draft EIR is sufficient and no further edits or additions are required.

5-32 The commenter states that the "Effects Found Not to be Significant" discussion was omitted from the Draft EIR. In response to this comment, the following discussion is added to page 5-2 in Chapter 5, Other CEQA Considerations, in the Draft EIR.

5.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

CEQA Guidelines Section 15128 requires that an EIR contain a statement indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Given the nature of the proposed project, the location of the project site, and current uses as the project site, the following issue areas are not discussed in detail in the EIR. As such, below are statements indicating the reasons that the proposed project would not result in significant impacts to agricultural resources and mineral resources.

5.3.1 Agricultural Resources

Approximately two-thirds of the project site is currently developed with an existing Medical Center. The land use and zoning designations on the project site include Office Commercial and Community Commercial, and the site lies within the Medical Use Overlay. No agricultural activities or resources exist on the project site, and the site is not zoned for such activities. As such, implementation of the proposed project would not result in impacts to agricultural resources.

5.3.2 Mineral Resources

Approximately two-thirds of the project site is currently developed with an existing Medical Center. The land use and zoning designations on the project site include Office Commercial and Community Commercial, and the site lies within the Medical Use

<u>Overlay. No mineral extraction activities or resources occur on the project site, and the site is not zoned for such activities. As such, implementation of the proposed project would not result in impacts to mineral resources.</u>

These text revisions do not warrant recirculation of the Draft EIR as they simply correct a clerical error and. do not provide significant new information that creates a new significant impact or mitigation measure, or increases the severity of an impact.

5-33 This comment states that page 1-3 of the Draft EIR references Chapter 5 as discussion agricultural, forestry, mineral and wildfire impacts but that these do not appear to be discussed in Chapter 5. As outlined in Response to Comment 5-32 above, discussions regarding agricultural, forestry and mineral resources are now provided and will be added to page 5-2 of the EIR. Regarding wildfire impacts, Threshold HAZ-4 on page 4.8-17 of the Draft EIR identifies that the project site is not located within a high fire zone per the City's Hazard Mitigation Plan. As such, potential wildfire impacts were discussed in Section 4.8, Hazards and Hazardous Materials, within the Draft EIR. No additional revisions to the Draft EIR are required.

5-34 This comment states that the list of required permits and approvals within the Project Description of the Draft EIR is incomplete. Additionally, this comment requests that documentation associated with the distribution of the Draft EIR be provided.

Known discretionary actions required for the proposed project are identified on page 3-15 of the Draft EIR. As stated on page 3-15, "Implementation of the project may require permits or other forms of approval from public agencies or other entities prior to construction of the project. They include, but are not limited to, the following." As such, this statement does not preclude the addition of other required discretionary actions; however, at this point in time, only the discretionary actions listed on page 3-15 of the Draft EIR are required.

In response to the distribution effort of both the Notice of Preparation (NOP) and Notice of Availability (NOA), Appendix A of the Draft EIR included the NOP, the Notice of Completion (NOC) for the State Clearinghouse, and all comment letters received in response to the NOP and NOC for the proposed project. Notice of Availability of the Draft EIR were processed in compliance with the CEQA Guidelines. Documents can be obtained by making a Public Records Request through the Moreno Valley City Clerk's office.

5-35 This comment provides concluding remarks and does not raise any environmental topics or issues. As such, no further response is provided.

References Cited

South Coast Air Quality Management District (SCAQMD). 2014. Rule 2202 – On-Road Motor Vehicle Mitigation Options. June 6. Accessed December 2019. http://www.aqmd.gov/docs/default-source/rule-book/reg-xxii/rule-2202.pdf?sfvrsn=7

United State Green Building Council (USGBC). 2016. LEED 2009 for Healthcare. July 1. Accessed December 2019. https://www.usgbc.org/sites/default/files/LEED%202009%20RS_HC_07.01.2016_clean.pdf

Comment Letter 6

Kaiser Permanente Moreno Valley Medical Center Project - SCN: 2018111051

Open House
Landmark Middle School, Moreno Valley
November 6, 2019

Comments may be turned in at this open house or sent via postal mail to: Julia Descoteaux, Associate Planner, City of Moreno Valley Community Development Department, 14177 Frederick Street, Moreno Valley, CA, 92553 postmark by November 25, 2019 at 5:30 p.m. For additional information, please contact Julia Descoteaux at 951-413-3209.

Contact Information

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Your Comments/Questions

awesome !!!! 6-1

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Response to Letter 6

Delma Willis
November 6, 2019

6-1 While no environmental comments or issues are raised in this comment, the support for the project will be noted and shared with the decision makers for the project.

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CHAPTER 3
ERRATA

The comments received by the City of Moreno Valley (City) during the public review period for the Draft EIR included information that has resulted in several minor revisions to the text of the Draft EIR and Draft EIR appendices. Additionally, several typographical errors have been identified in the Draft EIR. These revisions are shown below and are categorized by section number and page number. Text from the Draft EIR that has been removed is shown in strikethrough (i.e., ~~strikethrough~~), and text that has been added as part of the Final EIR is shown as underlined (i.e., underline). In some cases, revisions are shown with surrounding sentences for context. These errata merely clarify and correct minor facts and does not constitute "substantial revisions" requiring recirculation of the Draft EIR, as set forth in CEQA Guidelines, Section 15073.5.

Executive Summary

ES.2 Document Organization, Page ES-3

- Relevant Plans, Policies, and Ordinances – This subsection describes the laws, regulations, ordinances, plans, and policies applicable to the environmental issue area and the proposed project.
- Existing Conditions – This subsection describes the physical environmental conditions in the vicinity of the proposed project at the time of publication of the Notice of Preparation. The environmental setting establishes the baseline conditions by which the ~~County~~ City will determine whether specific project-related impacts are significant.

ES.4.3 Project Design Features

PDF-TRA-1 Traffic Control During Project Construction: The project would comply with the City's Emergency Operations Plan (EOP) for both construction and operations of all phases. Construction activities during all phases that may temporarily restrict vehicular traffic would implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures in accordance with the City's EOP. Operation of the project would not interfere with the City's EOP as driveways off Iris Avenue would be made accessible for emergency vehicles.

PDF-TRA-2 Kaiser will have a Transportation Demand Management (TDM) representative that will manage all aspects of the TDM program and participate in City-sponsored workshops and information roundtables, as well as be responsible for the TDM activities at the project site. The following TDMs would be implemented:

Transportation Information Center. Kaiser Permanente will provide information at the project site for employees, members, and visitors about local public transit services (including bus lines, future light rail lines, bus fare programs, rideshare programs and shuttles) and bicycle facilities (including routes, rental and sales locations, on-site bicycle racks and showers). Kaiser Permanente will also provide walking and biking maps for employees, visitors and residents, which would include but not be limited to information about convenient local services and restaurants within walking distance of the project site. Such transportation information will be provided at a transportation kiosk at the project site which will be maintained by the Kaiser Rider coordinator. In addition, information would be provided highlighting the environmental and health benefits of utilization of alternative transportation modes (e.g., Kaiser's Walk-for-your-Health program, etc.).

Preferential Parking for Employees**.** Kaiser Permanente will provide preferential parking (i.e., vanpool spaces, carpool spaces) within the parking facilities for employees who commute to work in Kaiser Permanente registered vanpools and carpools. For example, an employee who drives to work with at least one other employee to the project site may register as a carpool entitled to preferential parking within the meaning of this provision.

Convenient Parking and Facilities for Bicycle Riders**.** Kaiser Permanente will provide locations at all site buildings for convenient parking for bicycle commuters for employees working at the sites, members traveling to the site, and visitors to the sites. The bicycle parking will be located within the Kaiser Permanente project site and/or in the public right-of-way adjacent to the commercial uses such that long-term and short-term parkers can be accommodated.

Guaranteed Return Trip for Employees**.** Kaiser Permanente will provide vanpool and carpool reliant employees with a free return trip (or to the point of commute origin), when a personal emergency situation requires it.

ES.5 Areas of Known Controversy, Page ES-9

- Air quality emissions during construction and from traffic
- Cultural and Tribal Cultural Resources in the project vicinity
- Accessibility to transit
- Impacts to surrounding land uses
- Project-level and cumulative traffic impacts

Pages ES-34 through ES-46

Table ES-2 has been updated to reflect revisions and minor text edits to cultural resources, noise, transportation and tribal cultural resources mitigation, as set forth below, and is included as **Attachment A** to this Errata.

Chapter 3, Project Description

3.5.3 Project Design Features

PDF-TRA-1 Traffic Control During Project Construction: The project would comply with the City's Emergency Operations Plan (EOP) for both construction and operations of all phases. Construction activities during all phases that may temporarily restrict vehicular traffic would implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures in accordance with the City's EOP. Operation of the project would not interfere with the City's EOP as driveways off Iris Avenue would be made accessible for emergency vehicles.

PDF-TRA-2 Kaiser will have a Transportation Demand Management (TDM) representative that will manage all aspects of the TDM program and participate in City-sponsored workshops and information roundtables, as well as be responsible for the TDM activities at the project site. The following TDMs would be implemented:

Transportation Information Center. Kaiser Permanente will provide information at the project site for employees, members, and visitors about local public transit services (including bus lines, future light rail lines, bus fare programs, rideshare programs and shuttles) and bicycle facilities (including routes, rental and sales locations, on-site bicycle racks and showers). Kaiser Permanente will also provide walking and biking maps for employees, visitors and residents, which would include but not be limited to information about convenient local services and restaurants within walking distance of the project site. Such transportation information will be provided at a transportation kiosk at the project site which will be maintained by the Kaiser Rider coordinator. In addition, information would be provided highlighting the environmental and health benefits of utilization of alternative transportation modes (e.g., Kaiser's Walk-for-your-Health program, etc.).

Preferential Parking for Employees**.** Kaiser Permanente will provide preferential parking (i.e., vanpool spaces, carpool spaces) within the parking facilities for employees who commute to work in Kaiser Permanente registered vanpools and carpools. For example, an employee who drives to work with at least one other employee to the project site may register as a carpool entitled to preferential parking within the meaning of this provision.

Convenient Parking and Facilities for Bicycle Riders**.** Kaiser Permanente will provide locations at all site buildings for convenient parking for bicycle commuters for employees working at the sites, members traveling to the site, and visitors to the sites. The bicycle parking will be located within the Kaiser Permanente project site and/or in the public right-of-way adjacent to the commercial uses such that long-term and short-term parkers can be accommodated.

Guaranteed Return Trip for Employees**.** Kaiser Permanente will provide vanpool and carpool reliant employees with a free return trip (or to the point of commute origin), when a personal emergency situation requires it.

Section 4.2, Air Quality

Threshold AQ-2, Page 4.2-33

Demolition

At the outset of Phase III, the existing hospital tower and CUP, totaling ~~WHAT~~ 133,000 square feet, would be demolished. During the demolition phase, all other buildings and uses constructed during Phases I and II would remain open and available to provide medical services at the Medical Center.

Section 4.4, Cultural Resources

MM-CUL-1 The applicant shall ensure that all ground-disturbing activities are ceased and treatment plans are implemented if archaeological resources are encountered. In the event that archaeological resources are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 100 feet shall be established around the find where construction activities shall not be allowed to continue until a qualified archaeologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards. Should the newly discovered artifacts be determined to be prehistoric, Native American Tribes/Individuals should be contacted and consulted and Native American construction monitoring should be initiated. The Applicant and City shall coordinate with the archaeologist to develop an appropriate treatment plan for the resources. The plan may include implementation of archaeological data recovery excavations to address treatment of the resource along with subsequent laboratory processing and analysis.

In the event that a cultural resource is encountered during ground-disturbing activities, the landowner(s) shall relinquish ownership of all such resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Community Development Department, Planning Division ~~Department~~:

1. Accommodate the process for Preservation-In-Place/Onsite reburial of the discovered items with the consulting Native American tribes or bands, as detailed in the treatment plan prepared by the professional archaeologist. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed;
2. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and/or
3. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default.

Once artifact analysis is completed, a final written report detailing the results of all research procedures and interpretation of the site shall be submitted to the lead agency for review and approval.

Section 4.9, Hydrology and Water Quality

Selection portions of Section 4.9 have been updated to be consistent with the completed Water Quality Management Plan and Drainage Study for the proposed project.

Page 4.9-1

- Project Specific Water Quality Management Plan, Kaiser Permanente Moreno Valley, prepared by Kaiser Permanente (~~January~~ September 2019)
- Preliminary Technical Drainage Study, Kaiser Permanente Moreno Valley Medical Center, City of Moreno Valley, California, prepared by Michael Baker International (~~January~~ August 2019)

Page 4.9-8

The project site is relatively flat to gently sloping to the northwest, with localized moderate to steep, approximately 10-foot high, graded slopes around the western perimeter of the site (Figure 4.9-3, Existing Drainage). Infiltration testing indicates underlying soils consist of sandy silt, with a low infiltration rate of 0.05 inches per hour. The project site covers two parcels, which each contain stormwater runoff individually, with separate outflows in the northwest corners of the (west and east) parcels. An approximate 5-foot deep stormwater detention basin and associated overflow pipe is present in the northwest corner of the western parcel. Existing runoff from the northwest corner of the western parcel is ~~32~~23.19 cubic feet per second (cfs) for the 10-year storm and ~~48~~34.56 cfs for the 100-year storm. Similarly, existing runoff from the northwest corner of the eastern parcel is ~~16~~26.39 cfs for the 10-year storm and ~~24~~39.08 cfs for the 100-year storm (Appendix G-2).

Threshold HYD-1, Page 4.9-12 through 4.9-14

The project-specific water quality management plan (Appendix G-1) has been designed to accommodate stormwater runoff from all three project phases. This plan proposes to divide the project site into six separate drainage areas. Each drainage area would flow into either a ~~sand filter~~ bioretention basin~~,~~ or an underground storage vault and associated modular wetland system~~, or an underground storage pipe system~~ (Figure 4.9-4, Proposed Drainage). The bioretention ~~sand filter~~ basins are a type of treatment control BMP, where the entire feature is constructed as a stormwater filter, using an engineered soil media bed, with 30% pore space, ~~a sand bed~~ above an underdrain system. Stormwater would enter~~s~~ the bioretention basins from storm drains, which collect stormwater runoff from paved and landscaped areas. ~~sand filter basin at its forebay, where trash and sediment accumulate, or through overland sheet flow. Overland sheet flow into the sand filter basin is biofiltered through the vegetated side slopes or other pretreatment.~~ Flows would pass into the engineered soil ~~sand~~ filter surcharge zone and ~~are~~ gradually filter~~ed~~ through the underlying soil ~~sand bed~~. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff, thereby preventing clogging and allowing the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. The underdrain would gradually dewater the sand bed and discharge the filtered runoff to a nearby channel, swale, or storm drain. An overflow would be provided to drain the volume in excess of the design capture volume, or to help drain the system if clogging were to occur.

The primary advantage of the bioretention ~~sand filter~~ basin is its effectiveness in removing pollutants where infiltration into the underlying soil is not practical, and where site conditions preclude the use of a bioretention facility. ~~The primary disadvantage is a potential for clogging if silts and clays are allowed to flow into the basin. In addition, the performance of sand filter basins relies heavily on it being regularly and properly maintained. While this BMP is not considered a low impact development BMP, when designed in accordance with the water quality management guidance documents, a sand filter is considered to be a highly effective treatment control BMP~~ (Riverside County Flood Control and Water Conservation District 2011).

The proposed underground storage vault ~~and underground storage pipe~~ system would include a ~~biofiltration~~ modular wetland system designed to primarily remove oil and grease. These treatment control BMP features, which are designed to accommodate flow from Phases I, II, and III in the eastern portion of the project, are designed to have a high removal efficiency of oil/grease and trash/debris from stormwater runoff (Appendix G-1).

Based on the Riverside County Water Quality Management Plan guidance document, the preliminary project-specific water quality management plan describes and illustrates how the drainage for the entire site will comply with the water quality management plan requirements, but does not specify when BMPs must be implemented in phased projects. The obligation to install stormwater BMPs for the entire project is met if BMPs are constructed with the requisite capacity to serve the entire project (Santa Ana RWQCB 2012), but all stormwater treatment BMPs may not be required to be constructed during Phase I. Existing stormwater flows off site via two concrete spillways, from the northwest corners of the western and eastern project parcels (Figure 4.9-3).

Each of the three phases would include an increase in impervious surfaces. Phase I would include an increase in impervious surfaces as a result of new Diagnostic and Treatment Building expansion and new Central Utility Plant construction (Figure 3-1, Phase I Site Plan). Similarly, Phases II and III would include an increase in impervious surfaces as a result of new medical buildings, new parking structures, and primary hospital building expansion (Figure 3-4, Phase II Site Plan, and Figure 3-5, Phase III Site Plan). However, the preliminary project-specific water quality management plan does not require that BMPs be implemented in each phase to address the corresponding increase in impervious surfaces. Accordingly, mitigation is required to ensure that appropriate stormwater BMPs are implemented in each phase in order to treat stormwater generated from the increase in impervious surfaces in each phase. Impacts are considered less than significant with implementation of MM-HYD-1, MM-HYD-2, and MM-HYD-~~2~~3.

~~As discussed above, sand filter basins require maintenance to avoid clogging from silts and clays. As such, impacts are considered less than significant with implementation of MM-HYD-3, which requires inspection and maintenance activities that shall be implemented following basin construction.~~

In addition to incorporating these low impact development BMPs to ensure water quality treatment of runoff, the applicant may be required to provide additional low impact development principles or BMPs to avoid creating a hydrologic condition of concern (HCOC), or to mitigate any HCOC that may be created (Santa Ana RWQCB 2012). However, the proposed project would be exempt from additional hydromodification because the project is located in a HCOC exempt area (Figure 4.9-5, Hydrologic Condition of Concern – Exempt Areas). An exemption applies if all downstream conveyance channels to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River), which will receive runoff from the project, are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps. The project site generally drains northwest toward Nason Street, to an existing canal that conveys on-site flows southwest to the San Jacinto River, Canyon Lake (Railroad Canyon Reservoir), and Lake Elsinore. Canyon Lake and Lake Elsinore are engineered and regularly maintained. No sensitive stream habitats would be adversely affected by runoff from the project (Appendix G-1).

In summary, although the project proposes stormwater treatment BMPs for the entire project site, as indicated in the Water Quality Management Plan (Appendix G-1), if stormwater treatment BMPs are not constructed in sequence with phased construction, residual concentrations of oil and grease and other contaminants could be transported off site in stormwater, potentially impacting downstream beneficial uses of water bodies. Mitigation measures MM-HYD-1, MM-HYD-2, and MM-HYD-~~2~~3 will ensure that BMPs correspond to phases in order to address potential impacts of each phase~~.~~ and ~~In addition, the proposed sand filter basins have the potential clog from silts and clays. Mitigation Measure MM-HYD-3 would ensure~~ that these basins are adequately maintained to function properly. Impacts are considered less than significant with implementation of MM-HYD-1, MM-HYD-2, and MM-HYD-3.

Threshold HYD-3, Page 4.9-15 through 4.9-18

Phases I, II, and III

Drainage

The project site is relatively flat to gently sloping to the northwest, with localized moderate to steep, approximately 10-foot high, graded slopes around the western perimeter of the site (Figure

4.9-3). Infiltration testing indicates underlying soils consist of sandy silt, with a low infiltration rate of 0.05 inches per hour. The project site covers two parcels, which each contain stormwater runoff individually, with separate outflows in the northwest corners of the (west and east) parcels. An approximate 5-foot deep stormwater detention basin and associated overflow pipe is present in the northwest corner of the western parcel. No storm drains are present within the boundaries of the site and the project site does not contain a drainage channel, stream, or river.

The proposed project would involve construction of buildings, multilevel aboveground parking structures, and ancillary walkways and driveways. As a result, most of the project would be covered with impervious surfaces post-construction, which in turn could potentially result in increased off-site runoff. Based on the project-specific water quality management plan (Appendix G-1), the project site has been divided into six separate drainage areas. Each drainage area would flow into either a biofiltration ~~sand filter basin,~~ or an underground storage vault~~, or an underground storage pipe system~~ and associated modular wetland system (Figure 4.9-4). As discussed in Threshold HYD-2, these BMP features, which are designed to accommodate stormwater flow from Phases I, II, and III, would retain low impact development BMP design capture volumes, based on the Riverside County water quality management plan guidance documents (Santa Ana RWQCB 2012; Riverside County Flood Control and Water Conservation District 2011).

These low impact development BMP features would not only improve water quality, but also reduce off-site stormwater flow rates. As previously discussed, infiltration testing indicates underlying soils consist of sandy silt, with an infiltration rate of 0.05 inches per hour. Based on this infiltration rate, infiltration BMPs would not be feasible at the project site. In addition, no downstream regional and/or sub-regional low impact development BMPs exist or are available for use by the project. As a result, the entire design capture volume must be accommodated by project BMPs (Appendix G-1). In cases where excess volume cannot be infiltrated or captured and used, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year, 24-hour peak flow, unless the project is located in a HCOC exempt area (Santa Ana RWQCB 2012).

As illustrated in Table 4.9-1, although the stormwater runoff rates from the northwest overflow drain would decrease in the western parcel subsequent to project construction, stormwater runoff rates would increase in the eastern parcel. In addition, post-construction runoff from the northwest corners of the western and eastern parcels, combined, would increase for the 10-year and 100-year storm event ~~(Appendix G-1G-2)~~. Although 2-year, 24-hour peak flows have not been calculated for this project, these increased runoff rates would be greater than 110% of the pre-development 10-year and 100-year peak flows. Therefore, underground storage vaults would be installed in the eastern parcel to limit increased project related runoff to less than or equal to existing conditions. The storage vaults are sized for the 100-year, 24-hour storm event (Appendix G-2).

Table 4.9-1
Existing and Proposed Drainage

	Existing 10-Year Runoff Rate	Post-Construction 10-Year Runoff Rate	Change in Runoff Rate	Existing 100-Year Runoff Rate	Post-Construction 100-Year Runoff Rate	Change in Runoff Rate
West Parcel	23.19 ~~32.58~~ cfs	~~19.21~~ 19.16 cfs	~~-13.37~~ -4.03 cfs	~~48.25~~ 34.56 cfs	~~28.18~~ 28.01 cfs	~~-20.07~~ -6.55 cfs
	Existing 10-Year Runoff Rate	**Post-Construction 10-Year Runoff Rate**	**Change in Runoff Rate**	**Existing 100-Year Runoff Rate**	**Post-Construction 100-Year Runoff Rate**	**Change in Runoff Rate**
East Parcel	~~16.22~~ 26.39 cfs	~~36.56~~ 37.48 cfs	~~+20.34~~ +11.09 cfs	~~23.77~~ 39.08 cfs	~~54.73~~ 54.46 cfs	~~+30.96~~ +15.38 cfs
	Existing 10-Year Runoff Rate	**Post-Construction 10-Year Runoff Rate**	**Change in Runoff Rate**	**Existing 100-Year Runoff Rate**	**Post-Construction 100-Year Runoff Rate**	**Change in Runoff Rate**
West and East Parcel Combined	~~48.80~~ 49.58 cfs	~~55.77~~ 56.64 cfs	~~+6.97~~ +7.06 cfs	~~72.02~~ 73.64 cfs	~~82.91~~ 82.47 cfs	~~+10.89~~ +8.83 cfs

cfs = cubic feet per second.

~~However, as previously described for Threshold HYD-1, the proposed project would be exempt from additional hydromodification because the project is located in a HCOC exempt area (Figure 4.9-5). An exemption applies if all downstream conveyance channels to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River), which will receive runoff from the project, are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.~~

~~The project site generally drains northwest toward Nason Street, to an existing canal that conveys on-site flows southwest to the San Jacinto River, Canyon Lake (Railroad Canyon Reservoir), and Lake Elsinore. Canyon Lake and Lake Elsinore are engineered and regularly maintained. No sensitive stream habitats would be adversely affected by runoff from the project (Appendix G-1). In addition, with respect to increased stormwater runoff rates, there are no anticipated negative downstream or upstream impacts (Appendix G-1). As a result, increased stormwater runoff rates would not likely result in substantial downstream erosion or flooding as a result of exceedance of existing drainage system capacities.~~

Flooding

~~In addition, a~~ A portion of both Phase II parking structures would be located within FEMA Special Flood Hazard Zone A (Figure 3-4, Phase II Site Plan; Figure 4.9-2, Flood Zones). As a result, project construction would impede and redirect flood flows in the northwest portion of each parking structure, which in turn could result in a minor increase in downstream flood flows (i.e., rate and volume). In general, construction and regrading of the floodplain can obstruct or divert water to other areas. Construction in the floodplain reduces the ability of the floodplain to store excess water, sending more water downstream and causing floods to rise to higher levels. This also increases floodwater velocity (FEMA 2019). However, as previously described, with respect to increased stormwater runoff rates, there are no anticipated negative downstream or upstream impacts because the project is located in a HCOC exempt area, which applies to all downstream conveyance channels to an adequate sump (e.g., Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River (Appendix G-1). An exemption applies if all downstream conveyance channels to an adequate sump are engineered and regularly maintained to ensure design flow capacity. As a result, construction of portions of the parking structures within the flood zone would not likely result in substantial downstream flooding.

Conclusion

In summary, the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Although project construction would partially impede or redirect flood flows, no substantial downstream flooding would occur. Impacts are considered **less than significant** and no mitigation is required.

4.9.5 Mitigation Measures

The following mitigation measures would reduce impacts related to hydrology and water quality to a level below significance.

MM-HYD-1 Treatment control Best Management Practice (BMP) features proposed for the ~~north~~ eastern project area, including ~~an~~ underground storage vaults and a modular wetland system ~~an underground storage pipe system~~ (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase I of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley.

MM-HYD-2 Treatment control BMP features proposed for the ~~southern~~ western project area, including multiple bioretention ~~sand-filled detention~~ basins (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase II of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley.

MM-HYD-3 Consistent with the Design Handbook for Low Impact Development Best Management Practices (Riverside County Flood Control Water Conservation District 2011), Section 3.5 – Bioretention Basins, Inspection and Maintenance Schedule ~~3.7 - Sand Filter Basins, Table 1- Recommended Inspection and Maintenance Activities for Sand Filter Basins~~, the following inspection and maintenance activities shall be implemented following basin construction:

1) Ongoing, the applicant shall:
   - a) Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance areas.
   - b) Remove trash and debris.
   - c) Replace damaged grass and/or plants.
   - d) Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.

2) After storm events, the applicant shall inspect areas for ponding.

3) Annually, the applicant shall inspect/clean inlets and outlets.

~~1) Semi-monthly, including just before the annual storm season and following rainfall events, the applicant shall:~~
   - ~~a) Complete routine maintenance and inspection.~~
   - ~~b) Remove debris and litter from the entire basin to minimize filter clogging and to improve aesthetics.~~
   - ~~c) Check for obvious problems, especially filter clogging and signs of long-term ponding. Repair as needed. Address odor, insects, and overgrowth issues associated with stagnant or standing water in the basin bottom. There should be no long-term ponding of water.~~
   - ~~d) Check for erosion and sediment laden areas in the basin. Repair as needed. Clean forebay if needed.~~
   - ~~e) Revegetate side slopes where needed.~~

~~2) Annually, if possible, schedule inspections within 72 hours after a significant rainfall, including:~~
   - ~~a) Inspection of hydraulic and structural facilities. Examine the overflow outlet for clogging, the embankment and spillway integrity, and damage to any structural element.~~
   - ~~b) Check side slopes and embankments for erosion, slumping, and overgrowth.~~

~~c) Inspect the sand media at the filter drain to verify it is allowing acceptable infiltration. Annually scarify the top 3 inches by raking the filter drain's sand surface.~~

~~d) Check the filter drain underdrains for damage or clogging. Repair as needed.~~

~~e) Repair basin inlets, outlets, forebays, and energy dissipaters whenever damage is discovered.~~

~~f) No water should be present 72 hours after an event. No long-term standing water should be present at all. No algae formation should be visible. Correct problems as needed.~~

4.9.7 References Cited, Page 4.9-20

Riverside County Flood Control. 2017. Hydromodification Susceptibility Documentation Report and Mapping: Santa Ana Region. January 18, 2017. Online version: http://rcflood.org/downloads/NPDES/Documents/SA_WAP/AppA_HydromodificationSusceptibilityReport.pdf/

Figure 4.9-3, Existing Drainage, Page 4.9-25

Figures 4.9-3, Existing Drainage, is replaced as follows.

Figure 4.9-4, Proposed Drainage, Page 4.9-27

Figure 4.9-4, Proposed Drainage, is replaced as follows.

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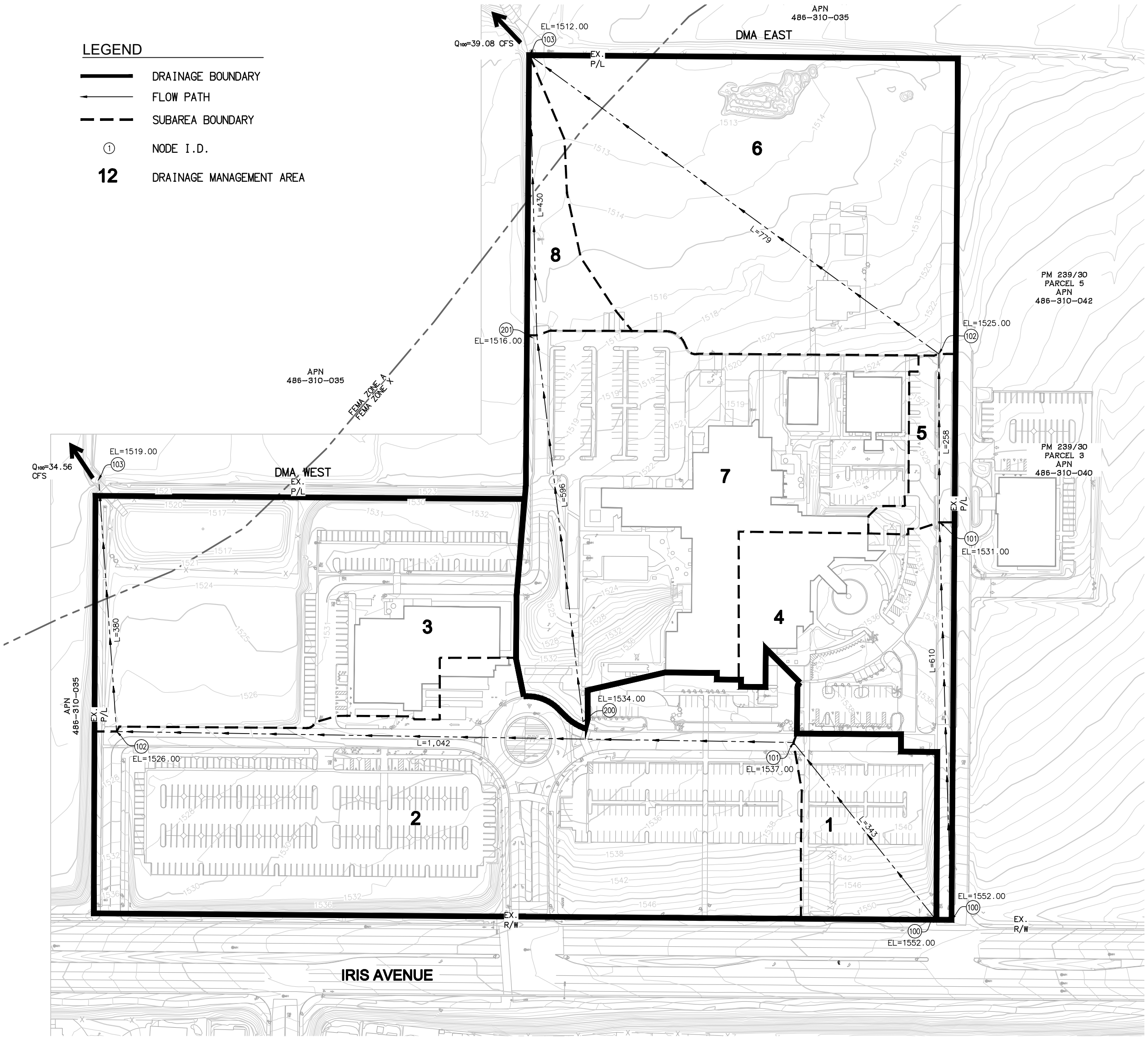
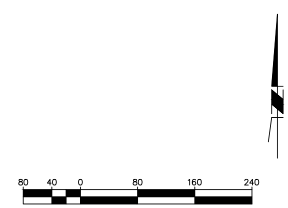


DMA WEST

DMA	SIZE [ACRE]
1	1.34
2	8.21
3	4.65

DMA EAST

DMA	SIZE [ACRE]
4	2.36
5	0.48
6	6.05
7	5.69
8	0.67



SOURCE: Michael Baker Intl 2020

DUDEK

FIGURE 4.9-3

Existing Drainage

Kaiser Permanente Moreno Valley Medical Center Project EIR

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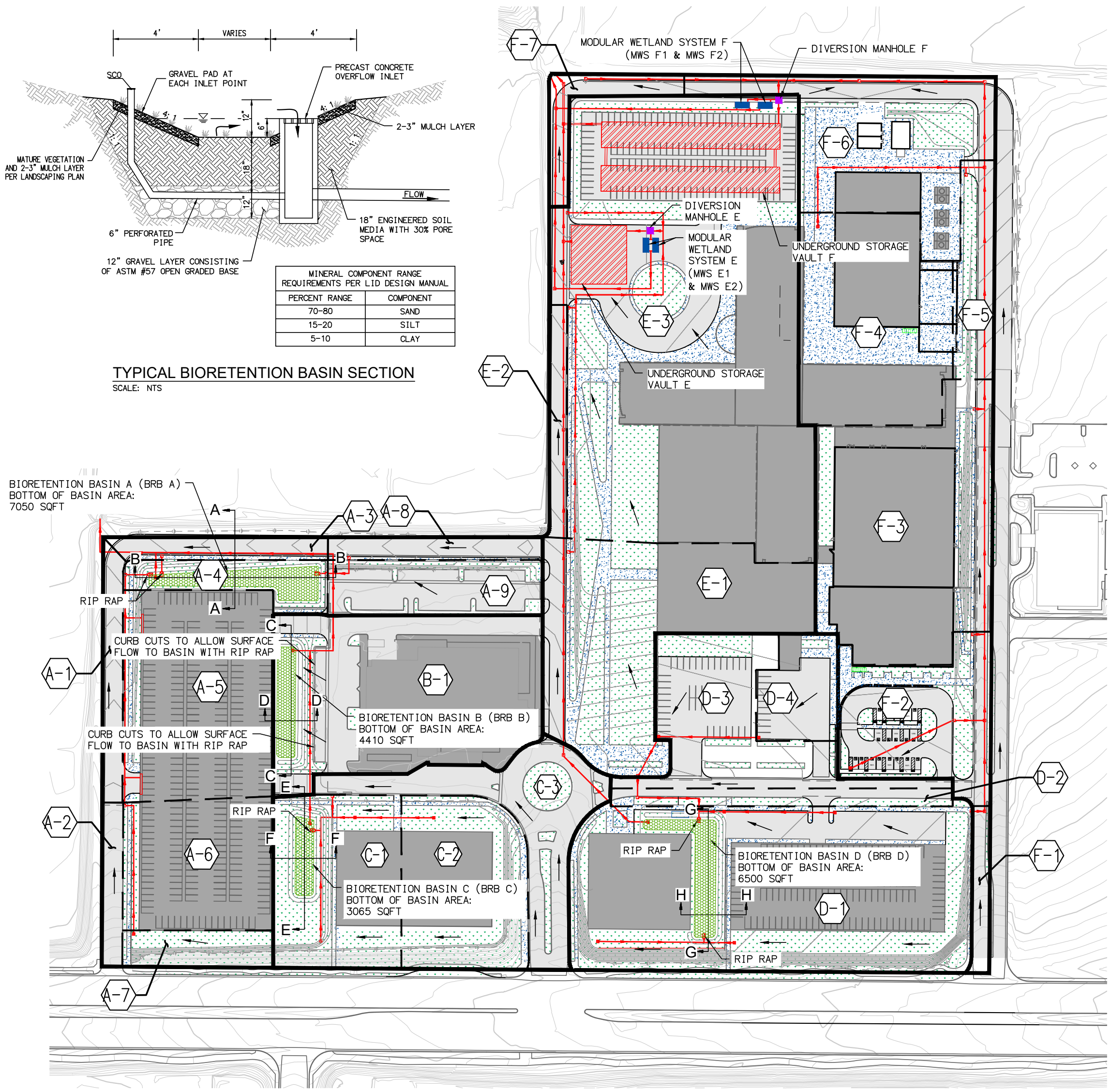
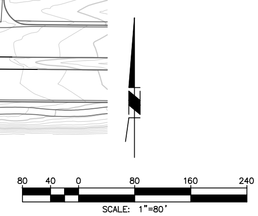


LEGEND

- MODULAR WETLAND
- EXISTING RIGHT-OF-WAY
- DMA BOUNDARY
- DMA SUB-AREA BOUNDARY
- PROPOSED STORM DRAIN
- 5'x5' RIP RAP, 12" THICK, D50=6", UNDERLAY WITH FILTER FABRIC
- UNDERGROUND STORAGE VAULT
- DIVERSION MANHOLE
- DMA NUMBER
- DMA SUB-AREA NUMBER

NOTE:

BIORETENTION BASIN SECTIONS A-G SHOWN ON NEXT SHEET



DMA SUB AREA	IMPERVIOUS (SQ/FT)	PERVIOUS (SQ/FT)
DRAINAGE MANAGEMENT AREA - A		
A-1	11,099.55	0
A-2	7,381.86	0
A-3	10,638.18	0
A-4	15,316.28	882.23
A-5	61,278.90	4,720.53
A-6	39377.84	3,399.92
A-7	405.16	11,650.67
A-8	10,668.91	0
A-9	18,627.58	7,089.86
TOTAL	174,794.26	27,743.21
DRAINAGE MANAGEMENT AREA - B		
B-1	79,438.59	14,937.99
DRAINAGE MANAGEMENT AREA - C		
C-1	16,556.09	31,582.35
C-2	22,034.62	24,152.67
C-3	33,241.85	6,421.19
TOTAL	71,832.56	62,156.21
DRAINAGE MANAGEMENT AREA - D		
D-1	88,116.08	55,428.60
D-2	8,090	5,288.20
D-3	39,175.22	7,510.24
D-4	16,645.83	715.45
TOTAL	152,027.36	68,942.49
DRAINAGE MANAGEMENT AREA - E		
E-1	53,279.49	32,593.43
E-2	8,842.15	0
E-3	189,289.96	46,171.70
TOTAL	251,411.60	78,765.13
DRAINAGE MANAGEMENT AREA - F		
F-1	6,188.51	717.31
F-2	31,586.47	11,811.17
F-3	82,640.82	9,580.26
F-4	66,796.49	0
F-5	11,922.48	6,235.56
F-6	52,041.88	11,755.41
F-7	7,917.31	3,256.75
TOTAL	259,093.96	43,356.46
TOTAL SUMMATION	988,598.33	295,901.49

SOURCE: Kaiser 2020

DUDEK

FIGURE 4.9-4

Proposed Drainage

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Section 4.11, Noise

MM-NOI-2 The construction contractor shall require that all construction equipment be operated with original factory-installed or factory-approved noise control equipment (e.g., exhaust mufflers and silencers, intake filters, and engine shrouds as appropriate) that is properly installed and in good working order. Enforcement shall be accomplished via field inspections by applicant or third-party personnel during construction activities to the satisfaction of the City of Moreno Valley ~~Engineering~~ Public Works Department.

Section 4.14, Transportation

Section 4.14, Transportation, identifies a number of intersections and roadway segments where physical improvements are not available, or available physical improvements are not sufficient to mitigate potential impacts. In such cases, “right-of-way constraints” are identified as the explanation for the lack of available physical improvements. As clarified in Chapter 2, Responses to Comments, of this Final EIR, and in Tables 9-M and 9-N to the Transportation Impact Analysis (Appendix I), the reference to “right-of-way constraints” refers to the fact that the specified intersections and roadway segment have been, or following recommended improvements will be, built out to the roadway designation specified in the Circulation Element of the City’s General Plan, or that expansion to the specified roadway designation would require significant encroachment on existing adjacent development and therefore, consistent with the policies of the General Plan, is not recommended. References to the explanation of “right-of-way constraints” should be understood to refer to the specific explanations provided in Chapter 2, Responses to Comments, of this Final EIR, and in Tables 9-M and 9-N to the Transportation Impact Analysis (Appendix I).

4.14.5 Impact Analysis

The following changes are being made to reflect that significant and unavoidable level of service impacts at Driveway 1/Iris Avenue are now identified under Threshold TRA-1 instead of Threshold TRA-3. Threshold TRA-3 only discusses queuing impacts. These errata are merely points of clarification and do not constitute “substantial revisions” requiring recirculation of the Draft EIR, as set forth in CEQA Guidelines, Section 15073.5.

Threshold TRA-1, Page 4.14-46

All the above intersections, except the two intersections of Heacock Street/Alessandro Boulevard and Driveway 1/Iris Avenue, operate at an unsatisfactory LOS under Phase III project completion year without project conditions. The addition of project traffic would cause the intersections of Heacock Street/Alessandro Boulevard and Driveway 1/Iris Avenue to operate at an unsatisfactory LOS from a satisfactory LOS without the project. ~~After the implementation of project frontage and~~

~~site improvements, Driveway 1/Iris Avenue would have no conflicting movements, and thus, would not be impacted.~~ Since the project contributes traffic to forecast deficiency at these 30 intersections, it is considered to have a cumulative impact at these intersections.

As shown in Table 4.14-32, mitigation measures at the impacted intersections are recommended for the proposed project. However, even with the implementation of the recommended mitigation measures, two of the impacted intersections (Intersection Nos. 21 and 39) would continue to operate at an unacceptable LOS based on the acceptable LOS standards used in the analysis (Table 4.14-28). No improvements are feasible at Intersection Nos. 6, 7, 19, 27, 28, 30, 32, 33, ~~and~~ 38, and 62) due to right-of-way constraints. Therefore, the project would have a significant and unavoidable impact.

Page 4.14-50

All the above intersections, with the exception of the Driveway 1/Iris Avenue intersection, operate at an unsatisfactory LOS under General Plan build-out without project conditions. Since the project contributes traffic to forecast deficiency at these intersections, it is considered to have a cumulative impact. ~~After the implementation of project frontage and site improvements, Driveway 1/Iris Avenue would have no conflicting movements, and thus, would not be impacted.~~

As shown in Table 4.14-32, mitigation measures at the impacted intersections are recommended for the proposed project. However, even with the implementation of the recommended mitigation measures or due to no feasible mitigation, 16~~5~~ of the impacted intersections (Intersection Nos. 6, 7, 8, 13, 19, 21, 27, 28, 30, 32, 33, 38, 39, 45, ~~and~~ 49, and 62) would continue to operate at an unacceptable LOS based on the acceptable LOS standards used in the analysis (Table 4.14-30). Therefore, the project would have a **significant and unavoidable impact**.

Threshold TRA-3, Page 4.14-88 through 91

The proposed project includes a circulation network that would serve the project site. Proposed project driveways and internal circulation elements have been designed to reflect the specific opportunities and constraints within the project site. All intersection and circulation improvements, and access to the site would be designed consistent with City roadway standards and would not create a hazard for vehicles, bicycles, or pedestrians entering or exiting the site.

The proposed p~~P~~roject ~~access~~ will not substantially increase hazards due to design features or incompatible uses since it would not introduce new access points (driveways) on to the adjacent public street (Iris Avenue), nor would the project introduce a new or incompatible use to the project site (an existing hospital). Vehicular queuing at the project driveways may pose a hazard to through traveling vehicles on Iris Avenue when vehicles that are queued outside of a designated storage lane may impede through traffic.

Primary site access is provided by three existing driveways to the existing Kaiser Permanente hospital located on Iris Avenue. The existing signalized driveway (Driveway 2) will continue to operate as a full-access driveway. The driveway farthest west (Driveway 1) would remain operating as right-in/right-out (RIRO) only. Phase I proposes the modification of the driveway farthest east (Driveway 3) to operate as a right-in-right-out only driveway from its existing full-access configuration. This modification would remove critical left turning movements from the intersection which lessens the potential for queuing hazards on Iris Avenue. T~~t~~he project design would allow for additional project access to Oliver Street if the adjacent property owner were to provide a reciprocal access agreement. However, because no such access agreement is currently in place, the traffic analysis, has not considered access to Oliver Street from the project.

The City requires a site access analysis to evaluate project access driveways to identify ~~LOS and~~ queuing issues at the driveways which may present a hazard to through traffic on Iris Avenue if queues cannot be stored within their storage lanes. The purpose of this analysis is to identify any improvements that will ~~help the driveways operate at satisfactory LOS (see LOS analysis results in Section 4.14.4 above) and~~ meet the vehicle queue storage ~~ing~~ requirements (analysis results shown below). As such, a driveway analysis was conducted for all analysis scenarios (Existing Phase I, Phase II, Phase III, and General Plan Buildout with project) and the improvements discussed below were identified to address circulation needs at these locations. Table 4.14-21 illustrates the queues at these driveways without and with these proposed improvements.

Based on the analysis of these driveways, the following improvements are recommended for satisfactory operations at these locations and are included as mitigation measures in Section 4.14.6 below:

Project Driveway 1: No feasible improvements have been identified at this project driveway due to right-of-way constraints, and that Iris Avenue is already built out to its ultimate General Plan Circulation Element roadway configuration. ~~The Driveway 1/ Iris Avenue intersection would operate at deficient LOS.~~ The queue on the southbound right turn lane of Driveway 1 would exceed 230 feet, and would queue on site beyond the entrance to the proposed parking structure on the west side of the project site. However, since this queue would occur on site, and not potentially block through traffic movements on a public street, it would not be considered a significant queuing impact. Therefore, the project would have a less than significant ~~and unavoidable~~ impact at the Project Driveway 1/Iris Avenue intersection related to queuing hazards.

Project Driveway 2: Under Phase I project completion conditions, extend the existing eastbound left-turn storage by 30 feet. Under Phase II project completion conditions, remove existing raised median on Iris Avenue for the eastbound approach, restripe eastbound approach to accommodate a second eastbound left-turn lane, and extend the dual left-turn pocket up to 400~~375~~ feet. Additionally, the existing southbound left-turn lane storage needs to be extended to 200 feet (back to the existing roundabout) under Phase II project completion conditions.

Figure 4.14-23 is a conceptual striping plan illustrating the proposed driveway improvements. As shown in Tables 4.14-21, with implementation of the proposed improvements, the driveways are forecast to operate at a satisfactory LOS and meet the queuing requirements at these locations.

Project Driveway 3: As previously indicated, Phase I proposes the modification of the driveway farthest east (Driveway 3) to operate as a right-in-right-out only driveway from its existing full-access configuration. This modification would remove critical left turning movements from the intersection which lessens the potential for queuing hazards on Iris Avenue.

Modifications to existing project access driveways to the site have been proposed to improve ~~LOS and~~ vehicle queuing. Those would be designed according to City standards and would not create sharp curves or dangerous intersections. The proposed project does not include any other project elements that could potentially create a hazard to the public.

For reasons described above, the proposed project would not increase hazards due to a design feature or incompatible uses;~~, with the exception of Project Driveway 1/Iris Avenue intersection. Since no feasible improvements have been identified, the Project Driveway 1 would continue to operate at deficient LOS. T~~therefore impacts would be less than significant.

~~**Project Driveway 3**: Phase I proposes the modification of the driveway farthest east (Driveway 3) to operate as a right-in-right-out only driveway from its existing full-access configuration. This modification would remove critical left turning movements from the intersection which lessens the potential for queuing hazards on Iris Avenue.~~

4.14.6 Mitigation Measures

Page 4.14-99 through 4.14-100

Prior to obtaining a Certificate of Occupancy for Phase I, the project shall comply with the mitigation measures specified below, which require payment of a fair share contribution and/or TUMF fee towards the implementation of the specified improvements. The following feasible mitigation measures would reduce project impacts by increasing capacity at the specified intersections, however, they would not be sufficient to achieve an acceptable LOS at these intersections. Additional improvements are required but are not feasible due to right-of-way constraints. Accordingly, these intersections are forecast to continue to operate at a deficient LOS following mitigation, and therefore, project impacts at these intersections would be **significant and unavoidable**.

MM-TRA-7 Intersection No. 30 – Lasselle Street/Cactus Avenue: Pay fair-share (16.3%) for the following improvement: add right-turn overlap phasing for westbound right (WBR) turn lane.

MM-TRA-8 Intersection No. 33 – Lasselle Street/~~Cactus~~ Krameria Avenue: Pay fair-share (~~9.2~~ 9.66%) for the following improvements: restripe eastbound approach from eastbound left (EBL), eastbound through (EBT) and eastbound right (EBR) to two EBL, EBT, and EBTR, restripe westbound approach from westbound left (WBL), westbound through (WBT), and westbound right (WBR) to WBL, WBT and WBTR. ~~add westbound right (WBR) turn lane.~~

MM-TRA-9 Intersection No. 27 – Kitching Street/Cactus Avenue: Pay fair share (29.6%) for the following improvements: restripe southbound right (SBR) to a southbound through right (SBTR), widen the south leg of the intersection for a second receiving lane.

MM-TRA-54 Intersection No. 8 - Elsworth Street/Cactus Avenue: Pay fair share (6.24%) for the following improvement: widen the south leg of the intersection to add a northbound through lane (NBT).

For the following significantly impacted intersections, no feasible mitigation measures are available due to right-of-way constraints. Therefore, these intersections would continue to operate at a deficient LOS, and project impacts at these intersections would be **significant and unavoidable**.

- Intersection No. 8 – Elsworth Street Street/Cactus Avenue:
- Intersection No. 17 – Indian Street/Cactus Avenue:
- ~~Intersection No. 27 – Kitching Street/Cactus Avenue:~~
- Intersection No. 28 – Kitching Street/Iris Avenue
- ~~Intersection No. 33 – Lasselle Street/Cactus Avenue: Pay fair-share (9.2%) for the following improvement: add westbound right (WBR) turn lane.~~
- Intersection No. 38 – Lasselle Street/Via De Anza - Rancho Verde High School

Page 4.14-103

MM-TRA-~~9~~10 Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard: Pay fair-share (17.3%) to improve the roadway segment to the classification of four-lane divided arterial.

MM-TRA-~~10~~11 Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue: Pay fair-share (15.2%) to improve the roadway segment to the classification of four-lane divided arterial.

MM-TRA-~~11~~12 Alessandro Boulevard between Kitching Street and Lasselle Street: Pay TUMF fee to improve the roadway segment to the classification of four-lane divided arterial.

MM-TRA-~~12~~13 Alessandro Boulevard between Lasselle Street and Nason Street: Pay TUMF fee to improve the roadway segment to the classification of four-lane divided arterial.

MM-TRA-~~13~~14 Alessandro Boulevard between Nason Street and Moreno Beach Drive: Pay TUMF fee to improve the roadway segment to the classification of a four-lane divided arterial.

Page 4.14-104

MM-TRA-~~14~~15 Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street: Pay TUMF fee to improve the roadway segment to the classification of six-lane divided arterial.

Pages 4.14-106 through 4.14-108

The following improvements listed below have been identified to mitigate the cumulative traffic impacts of the Project in the Phase II Completion Year (2032) with Project traffic conditions at the following significantly impacted intersections.

Prior to obtaining a Certificate of Occupancy for Phase II, the project shall comply with the mitigation measures specified below, which require payment of a fair share contribution and/or TUMF fee towards the implementation of the specified improvements necessary for the impacted intersections to operate with an acceptable LOS However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase II is obtained. Therefore, the project's impacts at these intersections would be **significant and unavoidable.**

MM-TRA-~~15~~16 Intersection No. 5 – I-215 northbound ramps - Old 215 Frontage Road/Cactus Avenue: Pay TUMF fee for the following improvements: interchange redesign and widening of the bridge to 6 lanes. Add second northbound left (NBL) and northbound through (NBT), second southbound left (SBL), dedicated southbound right (SBR) with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing.

MM-TRA-~~16~~17 Intersection No. 6 – Day Street/Alessandro Boulevard: ~~Pay TUMF fee for the addition of a westbound through (WBT) lane.~~ Pay fair-share (1.0%) for the following improvements: convert north-south movement to protected phasing, add southbound right (SBR), add second ~~southbound~~ eastbound left (~~S~~EBL) second westbound left (WBL), ~~southbound right (SBR) with overlap phasing, second eastbound left (EBL) turn lane,~~ and add overlap phasing to westbound right (WBR).

MM-TRA-~~17~~18 Intersection No. 11 – Graham Street/Alessandro Boulevard: Pay TUMF fee for the addition of an eastbound through (EBT) lane.

MM-TRA-~~18~~19 Intersection No. 25 – Perris Boulevard/Harley Knox Boulevard: Pay fair-share (1.3%) for the following improvements: add right-turn overlap phasing for westbound right (WBR) and southbound right (SBR) movements.

MM-TRA-~~19~~20 Intersection No. 29 – Lasselle Street/Alessandro Boulevard: Pay fair-share (4.3%) for the addition of a southbound through (SBT) lane.

MM-TRA-~~20~~21 Intersection No. 45 – Nason Street/Eucalyptus Avenue: Pay fair-share (6.1%) for the following improvements: add eastbound right (EBR) turn lane, northbound right (NBR) turn lane, and southbound right (SBR) turn lanes. Add right-turn overlap phasing for eastbound right (EBR), northbound right (NBR), and southbound right (SBR) movements.

MM-TRA-~~21~~22 Intersection No. 56 – Pearl Lane – Moreno Beach Drive/SR-60 Eastbound Ramps: Pay TUMF fee for the following improvements: add second northbound through (NBT), add second southbound through (SBT), restripe southbound through left to southbound left and restripe eastbound left through to eastbound left-through-right.

MM-TRA-~~22~~23 Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay TUMF fee for the addition of second eastbound through (EBT) lane, second westbound through (WBT) lane, second northbound through (NBT) lane, second southbound through (SBT) lane and northbound right (NBR) lane. Pay fair-share (8.0%) for northbound right overlap phasing.

Prior to obtaining a Certificate of Occupancy for Phase II, the project shall comply with the mitigation measures specified below, which require payment of a fair share towards the implementation of the specified improvements. The following impacted intersection has adequate right-of-way to implement the improvements identified below, which would result in increased capacity at the specified intersections. However, the identified improvements would not be sufficient to achieve an acceptable LOS at this intersection. Additional improvements are required but are not feasible due to right-of-way constraints. Therefore, this intersection is forecast to continue to operate at a deficient LOS after mitigation, and the project impact would be **significant and unavoidable**.

MM-TRA-~~23~~24 Intersection No. 19 – Perris Boulevard/Alessandro Boulevard: Pay fair-share (2.7%) for the following improvements: add eastbound through (EBT) by removing the center median along both east and west leg approaches and shifting the left-turn lanes to accommodate the through lane. Add right-turn overlap phasing for the NBR, SBR, and EBR. No further mitigations feasible due to right-of-way constraints.

MM-TRA-~~24~~25 Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue: Pay fair-share (26.8%) for the following improvements: a second southbound right (SBR). No further mitigations feasible due to right-of-way constraints.

For the following significantly impacted intersections, no feasible mitigation is available due to right-of-way constraints. Therefore, these intersections would continue to operate at a deficient LOS, and project impacts at these intersection would be **significant and unavoidable**.

- Intersection No. 7 – Elsworth Street/Alessandro Boulevard
- Intersection No. 8 – Elsworth Street Street/Cactus Avenue
- Intersection No. 12 – Graham Street - Riverside Drive/Cactus Avenue
- Intersection No. 17 – Indian Street/Cactus Avenue
- Intersection No. 27 – Kitching Street/ Cactus Avenue
- Intersection No. 28 – Kitching Street/Iris Avenue
- Intersection No. 30 – Lasselle Street/Cactus Avenue
- Intersection No. 32 – Lasselle Street/Iris Avenue
- Intersection No. 33 – Lasselle Street/Krameria Avenue
- Intersection No. 38 – Lasselle Street/Via De Anza - Rancho Verde High School

Table 4.14-26 provides a comparison under Phase II Project Completion Year (2032) with Project and Phase II Project Completion Year (2032) with Project with Improvements for the above mentioned intersections that operate at an unacceptable LOS. Figures 4.14-26A and 4.14-26B illustrate the Phase II Project Completion Year (2032) with Project with Improvements Study Intersection Geometrics and Traffic Control.

Thus, under Phase II Project Completion Year (2032) with Project with Improvements, impacts would be significant and unavoidable at twelve study intersections.

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Roadway Segments

The results of the roadway segment analyses for Phase II Project Completion Year (2032) with Project and Phase II Project Completion Year (2032) with Project with Improvements are summarized in Table 4.14-27. The following feasible mitigation measures have been recommended for the roadway segment impacts.

Prior to obtaining a Certificate of Occupancy for Phase II, the project shall comply with the mitigation measures specified below, which require payment of a fair-share contribution and/or TUMF fee towards the implementation of the specified improvements necessary in order for the impacted roadway segment to operate with acceptable LOS. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase II is obtained. Therefore, the project's impacts at these roadway segments would be **significant and unavoidable.**

MM-TRA-~~25~~26 Lasselle Street-Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway: Pay fair-share (4.0%) to improve the roadway segment to the classification of a six-lane arterial.

Please note, the following mitigation measure is being deleted because it erroneously recommends widening this roadway segment to six lanes; however, the City's General Plan designation for this roadway segment is four lanes and not six lanes.

~~**MM-TRA-26**~~ ~~Nason Street-Evans Road between Eucalyptus Avenue and Cottonwood Avenue: Pay fair-share (6.7%) to improve the roadway segment to the classification of a six-lane arterial.~~

For the following significantly impacted roadway segments, no feasible mitigation is available due to right-of-way constraints. Therefore, these roadway segments would continue to operate at a deficient LOS, and project impacts at these roadway segments would be **significant and unavoidable**.

- Lasselle Street between Iris Avenue and Krameria Avenue
- Lasselle Street between Krameria Avenue and Via Xavier Lane
- Lasselle Street between Via Xavier Lane and Lasselle Sports Park – Rojo Tierra
- Lasselle Street between Lasselle Sports Park – Rojo Tierra and Cremello Way – Avenida De Plata
- Lasselle Street between Cremello Way – Avenida De Plata and Avenida Classica – Kentucky Derby Drive

- Cactus Avenue between I-215 northbound ramps – Old Frontage Road and Elsworth Street
- Nason Avenue-Evans Street between Eucalyptus Avenue and Cottonwood Avenue

Page 4.14-117 through 4.14-118

MM-TRA-42 Intersection No. 50: Peal Lane-Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the addition of an eastbound left (EBL) turn lane.

MM-TRA-43 Intersection No. 57: Moreno Beach Drive/Eucalyptus Avenue: Pay fair share (5.4%) for the following improvements: add southbound left (SBL) and southbound through (SBT).

MM-TRA-4~~3~~44 Intersection No. 58: Moreno Beach Drive/Cottonwood Avenue: Pay fair-share (9.4%) for the following improvements: add westbound left (WBL), and restripe westbound approach as westbound left (WBL) and shared westbound through-right (WBTR). Change the split phasing for the east-west approach to permitted phasing.

MM-TRA-4~~4~~45 Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay fair-share (8.0%) for addition of second westbound left (WBL) turn-lane.

Prior to obtaining a Certificate of Occupancy for Phase III, the project shall comply with the mitigation measures specified below, which require payment of a fair-share contribution and/or TUMF fee towards the implementation of the specified improvements. The following impacted intersections have adequate right-of-way to implement the improvements identified below, which would reduce the project impacts by increasing capacity at the specified intersections. However, the identified improvements would not be sufficient to achieve an acceptable LOS at these intersections. Additional improvements are required but are not feasible due to right-of-way constraints. Therefore, these intersections are forecast to continue to operate at a deficient LOS after implementation of the recommended improvements, and the project impacts at these intersections would be **significant and unavoidable**.

MM-TRA-4~~5~~46 Intersection No. 21: Perris Boulevard/Iris Avenue: Pay fair-share (3.1%) to add overlap phasing to northbound right (NBR).

MM-TRA-4~~6~~47 Intersection No. 39 – Evans Road/Ramona Expressway: Pay TUMF fee for addition of westbound through (WBT) lane.

For the following significantly impacted intersections, no feasible mitigation is available due to right-of-way constraints. Therefore, those intersections would continue to operate at a deficient LOS, and project impacts at these intersections would be **significant and unavoidable**.

- Intersection No. 6 – Day Street/Alessandro Boulevard
- Intersection No. 7 – Elsworth Street/Alessandro Boulevard
- Intersection No. 8 – Elsworth Street Street/Cactus Avenue
- Intersection No. 12 – Graham Street - Riverside Drive/Cactus Avenue
- Intersection No. 17 – Indian Street/Cactus Avenue
- Intersection No. 19 – Perris Boulevard/Alessandro Boulevard
- Intersection No. 27 – Kitching Street/ Cactus Avenue
- Intersection No. 28 – Kitching Street/Iris Avenue
- Intersection No. 30 – Lasselle Street/Cactus Avenue
- Intersection No. 32 – Lasselle Street/Iris Avenue
- Intersection No. 33 – Lasselle Street/Krameria Avenue
- Intersection No. 38 – Lasselle Street/Via De Anza - Rancho Verde High School
- ~~Intersection No. 57: Moreno Beach Drive/Eucalyptus Avenue~~
- Intersection No. 62 – Driveway 1/Iris Avenue

Table 4.14-28 provides a comparison under Phase III Project Completion Year (2038) with Project and Phase III Project Completion Year (2038) with Project with Improvements for the above mentioned intersections that operate at an unacceptable LOS. Figures 4.14-27A and 4.14-27B illustrate the Phase III Project Completion Year (2038) with Project with Improvements Study Intersection Geometrics and Traffic Control.

Thus, under Phase III Project Completion Year (2038) with Project with Improvements, impacts would be **significant and unavoidable** at eleven study intersections.

Page 4.14-122

MM-TRA-4~~7~~48 Alessandro Boulevard between Perris Boulevard and Kitching Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.

Page 4.14-127

MM-TRA-~~48~~49 Intersection No. 47: Nason Street/Alessandro Boulevard: Pay fair-share (9.6%) fee for the addition of a northbound left (NBL) turn-lane.

MM-TRA-~~49~~50 Intersection No. 50: Pearl Lane-Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the addition of a westbound left (WBL) turn lane.

Page 4.14-132

MM-TRA-~~50~~51 Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue: Pay fair-share (15.18%) to improve the roadway segment to the classification of a six-lane divided arterial.

MM-TRA-~~51~~52 Alessandro Boulevard between Lasselle Street and Nason Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.

Page 4.14-133

In order to further address Phase I impacts for which physical improvements are not available, the following additional mitigation measure shall be implemented:

MM-TRA-53. The project shall contribute a total fair share contribution of $26,100 to the following Capital Improvement Plan (CIP) improvements: Heacock Street, between Nandina Avenue and Harley Knox Boulevard; and Indian Street, between Krameria Avenue and San Michele Road. As provided in the City's CIP, these improvements consist of extending Heacock Street's existing southern terminus to Harley Knox Boulevard and constructing a four-lane bridge on Indian Street over the Flood Control Channel Lateral A to connect to the existing terminus.

Pages 4.14-137 through 4.14-145

Table 4.14-32 has been updated to reflect edits made to recommended improvements to intersections as set forth above, and is included as **Attachment B** to this Errata.

Page 4.14-146

Phase I Completion Year (2023) with Project Traffic Conditions

Driveway Queuing

The following improvements listed below have been identified to mitigate the project's driveway queuing impacts in the Phase I Completion Year (2023) with Project traffic conditions at the following significantly impacted driveway.

MM-TRA-55 Intersection No. 63 Project Driveway 2/Iris Avenue: Prior to completion of Phase I construction, the project shall extend the existing eastbound left-turn storage lane of Driveway 2 by 30 feet.

Phase II Completion Year (2032) with Project Traffic Conditions

Driveway Queuing

The following improvements listed below have been identified to mitigate the project's driveway queuing impacts in the Phase II Completion Year (2032) with Project traffic conditions at the following significantly impacted driveways.

MM-TRA-56 Intersection No. 63 Project Driveway 2/Iris Avenue: Prior to completion of Phase II construction, the project shall remove existing raised median on Iris Avenue for the eastbound approach to Driveway 2, stripe eastbound approach to accommodate a second eastbound left-turn lane, and extend the dual left-turn pocket up to 400 feet. Additionally, the existing southbound left-turn lane storage needs to be extended to 200 feet prior to the completion of Phase II construction.

Therefore, with implementation of above mitigation measures, the project's queueing impacts (under Threshold TRA-3) at Project Driveway 2 would be less than significant.

4.14.7 Level of Significance After Mitigation

Pages 4.14-146 through 4.14-149

As discussed above in Section 4.14.6, mitigation has been identified that would eliminate or reduce impacts at certain intersections and roadway segments. The proposed mitigation requires the payment of fair share contributions and/or TUMF fees towards specified improvements. For mitigation that consists of a TUMF fee payment, the amount to be paid shall be paid per the fee structure in the Transportation Uniform Mitigation Fee Calculation Handbook (Western Riverside Council of Governments, 2019). For mitigation that consists of a fair-share payment, the amount to be paid shall be determined by an analysis of the anticipated cost of the improvement and application of the percentages identified in Tables 4.14-33 and 4.14-34 (the "Fair Share" contribution).

As indicated above, the project applicant shall pay its TUMF fees and/or fair-share of the costs of these measures before the City issues a final certificate of occupancy for each of the project phases. As previously discussed because the City does not have control whether or when the mitigation measures would be constructed or whether there is insufficient right-of-way and therefore, impacts to those specific intersections and roadway segments (specified below) are considered significant and unavoidable.

As shown in Tables 4.14-33 and 4.14-34, several intersections and roadway segments have no feasible mitigations possible due to right-of-way constraints. To mitigate the project cumulative impacts at these locations, the project shall pay a fair share contribution for the development of trip reduction and / or trip redistribution strategies on the City's roadway network. The fair share contribution for this purpose will be based on the percentages shown in 4.14-33 and 4.14-34. A fair share cost calculation table will be required prior to construction of the project.

TRA-1 Study Intersections

Phase I Completion Year (2023) with Project Traffic Conditions

- Implementation of **MM-TRA-1** through **MM-TRA-6** for the impacted intersections (Intersection Nos. 29, 39, 49, 50, 56, and 59) would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase I is obtained. Therefore, the project's impacts at these intersections would be **significant and unavoidable.**
- With payment of the project's TUMF and/or fair-share towards the implementation of **MM-TRA-7** ~~and~~ <u>through</u> **MM-TRA-~~8~~<u>9</u>** <u>and **MM-TRA-54**</u>, the impacted intersections (Intersection Nos. 27, 30, and 33) would result in increased capacity, however, the proposed improvements would not achieve acceptable LOS standards. Therefore, the project's impact at these intersections would be **significant and unavoidable**.
- It has been determined that no physical improvements can be implemented at Intersection Nos. 8, 17, ~~27,~~ 28, 33 and 38. Therefore, the project's impact at these locations would be **significant and unavoidable.**
- <u>Implementation of **MM-TRA-53** would be required to further address Phase I impacts for which no physical improvements are available. However, payment of the required fees does not guarantee that this mitigation would be in place before the Certificate of Occupancy for Phase I is obtained. Therefore impacts identified above would still remain **significant and unavoidable**.</u>

Phase II Completion Year (2028) with Project Traffic Conditions

- Implementation of **MM-TRA-~~15~~16** through **MM-TRA-~~22~~23** for the impacted intersections (Intersection Nos. 5, 6, 11, 25, 29, 45, 56 and 59) would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase II is obtained. Therefore, the project's impacts at these intersections would be **significant and unavoidable.**
- With payment of the project's TUMF and/or fair-share towards the implementation of **MM-TRA-~~23~~24** and **MM-TRA-~~24~~25**, the impacted Intersection No. 19 and 49 would result in increased capacity, however, the proposed improvements would not achieve acceptable LOS standards. Therefore, the project's impact at these intersection would be **significant and unavoidable**.
- It has been determined that no feasible mitigation measures can be implemented at Intersection Nos. 7, 8, 12, 17, 27, 28, 30 32, 33 and 38. Therefore, impacts would be **significant and unavoidable**.

Phase III Completion Year (2038) with Project Traffic Conditions

- Implementation of **MM-TRA-34** through **MM-TRA-~~44~~45** for the impacted intersections (Intersection Nos. 9, 11, 13, 22, 25, 29, 47, 49, 50, 57, 58, and 59) would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase III is obtained. Therefore, the project's impacts at these intersections would be **significant and unavoidable.**
- With payment of the project's TUMF and/or fair-share towards the implementation of **MM-TRA-~~45~~46** and **MM-TRA-~~46~~47**, the impacted Intersection No. 21 and No. 39 would result in increased capacity, however, the proposed improvements would not achieve acceptable LOS standards. Therefore, the project's impact at these intersection would be **significant and unavoidable**.
- It has been determined that no feasible mitigation measures can be implemented at Intersection Nos. 6, 7, 8, 12, 17, 19, 27, 28, 30 32, 33, 38, ~~and~~ 57, and 62.

General Plan Buildout (2040) with Project Traffic Conditions

- Implementation of **MM-TRA-~~48~~49** and **MM-TRA-~~49~~50** for the impacted intersections (Intersection Nos. 47 and 50) would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase III is obtained. Therefore, the project's impacts at these intersections would be **significant and unavoidable.**

- It has been determined that no feasible mitigation measures can be implemented at Intersection Nos. 6, 7, 8, 12, 13, 17, 19, 20, 21, 27, 28, 30 32, 33, 38, 39, 45, 49 ~~and~~ 57, and 62.

TRA-1 Roadway segments

Phase I Completion Year (2023) with Project Traffic Conditions

- Implementation of **MM-TRA-~~9~~10** through **MM-TRA-~~13~~14** for the impacted roadway segments would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase I is obtained. Therefore, the project's impacts at these roadway segments would be **significant and unavoidable.**
- With payment of the project's TUMF and/or fair-share towards the implementation of **MM-TRA-~~14~~15**, the impacted roadway segment would result in increased capacity, however, the proposed improvements would not achieve an acceptable LOS standards. In addition to the above mitigation, implementation of **MM-TRA-53** would be required for the project to contribute its fair share for the development of trip reduction and/or trip redistribution strategies on the City's roadway network. However, payment of the required fees does not guarantee that this mitigation would be in place before the Certificate of Occupancy for Phase I is obtained. Therefore, the project's impact would be **significant and unavoidable**.

Phase II Completion Year (2032) with Project Traffic Conditions

- Implementation of **MM-TRA-~~25~~26** through **MM-TRA-32** for the impacted roadway segments would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase II is obtained. Therefore, the project's impacts at these roadway segments would be **significant and unavoidable.**

- With payment of the project's TUMF and/or fair-share towards the implementation of **MM-TRA-33**, the impacted roadway segment would result in increased capacity, however, the proposed improvements would not achieve an acceptable LOS standards. Therefore, the project's impact would be **significant and unavoidable**.
- It has been determined that no feasible mitigation measures can be implemented on roadway segments of Lasselle Street and Cactus Avenue.

Phase III Completion Year (2038) with Project Traffic Conditions

- Implementation of **MM-TRA-~~47~~<u>48</u>** for the impacted roadway segment would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase III is obtained. Therefore, the project's impact at this roadway segment would be **significant and unavoidable.**
- It has been determined that no physical improvements can be implemented on 21 roadway segments of Perris Boulevard, Lasselle Street, Nason Street, Alessandro Boulevard, Cactus Avenue, and Iris Avenue.

General Plan Buildout (2040) with Project Traffic Conditions

- Implementation of **MM-TRA-~~50~~<u>51</u>** and **MM-TRA-~~51~~<u>52</u>** for the impacted roadway segments would improve the level of service standards at these locations to be less than significant. The project would be required to pay TUMF and/or its fair-share towards these improvements. However, payment of the required fees does not guarantee that these improvements would be in place before the Certificate of Occupancy for Phase III is obtained. Therefore, project's impacts at this roadway segment would be **significant and unavoidable.**
- It has been determined that no feasible mitigation measures can be implemented on 21 roadway segments of Perris Boulevard, Lasselle Street, Nason Street, Alessandro Boulevard, Cactus Avenue, and Iris Avenue. <u>Implementation of **MM-TRA-53** would be required for the project to contribute its fair share for the development of trip reduction and/or trip redistribution strategies on the City's roadway network. However, payment of the required fees does not guarantee that this mitigation would be in place before the Certificate of Occupancy for Phase III is obtained. Therefore, impacts would still remain **significant and unavoidable**.</u>

TRA-3 Project Driveways

Phase I Completion Year (2023) with Project Traffic Conditions

- Implementation of **MM-TRA-55** for the impacted driveway queue roadway segments would provide for adequate vehicle storage at Project Driveway 2/Iris Avenue and queuing impacts at this location would be less than significant. The project would be required to construct this improvement prior to completion of Phase I construction. Therefore, the project's impacts at this driveway ese roadway segments would be less than significant and unavoidable.

Phase II Completion Year (2032) with Project Traffic Conditions

- Implementation of **MM-TRA-56** for the impacted driveway queue would provide for adequate vehicle storage at Project Driveway 2/Iris Avenue and queuing impacts at this location would be less than significant. The project would be required to construct these improvements prior to completion of Phase II construction. Therefore, the project's impact at this driveway would be less than significant.

Pages 4.14-150 through 4.14-154

Table 4.14-33 has been updated to reflect edits made to mitigation measures and recommended improvements for intersections, as set forth above, and is included as **Attachment C** to this Errata.

Pages 4.14-155 through 4.14-158

Table 4.14-34 has been updated to reflect edits made to mitigation measures and recommended improvements to roadway segments as set forth above, and is included as **Attachment D** to this Errata.

Section 4.15, Tribal Cultural Resources

The City has completed the tribal consultation process, and in response to the consultation process, the following changes to mitigation measures within Section 4.15.10 are incorporated on pages 4.15-24 through 4.15-26 of the EIR.

MM-TCR-1 Prior to the issuance of a grading permit, the Applicant shall retain a qualified professional archaeologist who meets U.S. Secretary of the Interior's Professional Qualifications and Standards. The project archaeologist, in consultation with the Soboba Band of Luiseno Indians~~Consulting Tribe(s)~~, the construction manager, and any contractors ~~(hereafter referred to as "Native American Tribal Representatives")~~ will conduct an Archaeological Sensitivity Training for construction personnel prior to commencement of excavation activities. The training session will include a handout and will focus on how to identify archaeological and Tribal Cultural Resources that may be encountered during earthmoving activities and the procedures to be followed in such an event, including who to contact and the appropriate avoidance measures that need to be undertaken until the find(s) can be properly evaluated; the duties of archaeological and Soboba Band of Luiseno Indians ~~Native American~~ monitors; and the general steps a qualified professional archaeologist would follow in conducting a salvage investigation if one is necessary. All new construction personnel that will conduct earthwork or grading activities must take the Archaeological Sensitivity Training prior to beginning work on the project and the professional archaeologist shall make themselves available to provide the training on an as-needed basis. A sign-in sheet shall be compiled to track attendance and shall be submitted to the City of Moreno Valley with the Phase IV Archaeological Monitoring Report.

MM-TCR-2 Preconstruction Notification of Soboba Band of Luiseno Indians ~~Native American Tribal~~ Representatives. Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that Soboba Band of Luiseno Indians ~~the Native American Tribal~~ Representatives received a minimum of 30 days advance notice of all mass grading and trenching activities, and provide evidence of monitoring agreements between the Applicant and the Tribe~~s~~. The Soboba Band of Luiseno Indians ~~Native American Tribal Representatives~~ shall be notified a minimum of 48 hours in advance and allowed to attend the pre-grading meeting with the City and project construction contractors and/or monitor all project mass grading and trenching activities.

MM-TCR-3 Prior to grading permit issuance, the Applicant and the City of Moreno Valley 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 archaeological monitor or Soboba Band of Luiseno Indians ~~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 Soboba Band of Luiseno Indians ~~Native American Tribal~~ Representatives to the site to assess the significance of the find."

MM-TCR-4 Prior to the issuance of a grading permit, the Applicant shall retain a qualified archaeological monitor as well as secure an agreement with the Soboba Band of Luiseno Indians for tribal monitoring. The archaeological monitor will work under the direction and guidance of the qualified professional archaeologist and will meet the U.S. Secretary of the Interior's Professional Qualifications and Standards. The archeological monitor and the Soboba Band of Luiseno Indians monitor shall have the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. Archaeological and tribal cultural monitoring is required at all depths and strata. The archaeological and tribal cultural monitors shall be present during all construction excavations (e.g., grading, trenching, or clearing/grubbing) into non-fill younger Pleistocene alluvial sediments. Multiple earth-moving construction activities may require multiple archaeological monitors. The frequency of monitoring shall be based on the rate of excavation and grading activities, proximity to any known archaeological resources, the materials being excavated (native versus artificial fill soils), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered. Full-time monitoring can be reduced to part-time inspections if determined adequate by the qualified professional archaeologist.

MM-TCR-5 The applicant shall ensure that all ground-disturbing activities are ceased and treatment plans are implemented if tribal cultural resources (TCRs) are encountered. In the event that TCRs are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 100 feet shall be established around the find where construction activities shall not be allowed to continue until a qualified archaeologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside of the buffer area. All TCRs unearthed by project construction activities shall be evaluated by a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards.

In the event that a TCR is encountered during ground-disturbing activities, the landowner(s) shall relinquish ownership of all such resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Planning Department:

1. Accommodate the process for Preservation-In-Place/Onsite reburial of the discovered items with the Soboba Band of Luiseno Indians~~consulting Native American tribes or bands~~, as detailed in the treatment plan prepared by the professional archaeologist. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed;
2. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate

curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and/or

3. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default.

MM-TCR-6 Prior to the issuance of a grading permit, project archaeologist, in consultation with the Soboba Band of Luiseno Indians, the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the CRMP shall include:

a. Project grading and development scheduling;

b. The project archeologist and the Soboba Band of Luiseno Indians as defined in MM-TCR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and shall conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training shall 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 shall 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 Soboba Band of Luiseno Indians shall make themselves available to provide the training on an as-needed basis;

c. The protocols and stipulations that the contractor, City, Soboba Band of Luiseno Indians, and project archaeologist shall 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.

MM-TCR-7~~6~~ Prior to building permit issuance, the project archaeologist shall prepare a final Phase IV Monitoring Report as outlined in the Cultural Resources Management Plan ~~Monitoring Program~~ (CRMP), which shall be submitted to the City of Moreno Valley Planning Division, the Soboba Band of Luiseno Indians~~appropriate Native~~

~~American tribe(s)~~, and the Eastern Information Center at the University of California, Riverside. The report shall include a description of resources unearthed, if any, evaluation of the resources with respect to the California Register and CEQA, and treatment of these resources. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated in a Riverside County repository according to the current professional repository standards and may include the ~~Pechanga Band's curatorial facility in Temecula, California, the~~ Western Science Center or other federally approved repository.

<u>**MM-TCR-8**</u> <u>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), Soboba Band of Luiseno Indians 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 the Soboba Band of Luiseno Indians, as defined in the Cultural Resources Management Plan, prepared under MM-TCR-6, before any further work commences in the affected area.</u>

MM-TCR-~~7~~<u>9</u> In the event that any human remains are unearthed during project construction, the City of Moreno Valley and the Applicant shall comply with State Health and Safety Code Section 7050.5 The City of Moreno Valley and the Applicant shall immediately notify the Riverside County Coroner's office and no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition. If remains are determined to be of Native American descent, the coroner has 24-hours to notify the Native American Heritage Commission (NAHC). The NAHC shall identify the person(s) thought to be the Most Likely Descendant (MLD). After the MLD has inspected the remains and the site, they have 48 hours to recommend to the landowner the treatment or disposal, with appropriate dignity, of the human remains and any associated funerary objects. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the landowner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and cultural items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the MLD all reasonable options regarding the MLDs preferences for treatment.

If the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

Chapter 5, Mandatory CEQA Discussion Topics

5.3 Effects Found Not to be Significant

CEQA Guidelines Section 15128 requires that an EIR contain a statement indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Given the nature of the proposed project, the location of the project site, and current uses as the project site, the following issue areas are not discussed in detail in the EIR. As such, below are statements indicating the reasons that the proposed project would not result in significant impacts to agricultural resources and mineral resources.

5.3.1 Agricultural Resources

Approximately two-thirds of the project site is currently developed with an existing Medical Center. The land use and zoning designations on the project site include Office Commercial (OC) District and Community Commercial (CC) District, and the site lies within the Medical Use Overlay. No agricultural activities or resources exist on the project site, and the site is not zoned for such activities. As such, implementation of the proposed project would not result in impacts to agricultural resources.

5.3.2 Mineral Resources

Approximately two-thirds of the project site is currently developed with an existing Medical Center. The land use and zoning designations on the project site include Office Commercial (OC)

District and Community Commercial (CC) District, and the site lies within the Medical Use Overlay. No mineral extraction activities or resources occur on the project site, and the site is not zoned for such activities. As such, implementation of the proposed project would not result in impacts to mineral resources.

Chapter 6, Cumulative Impacts

6.3 Cumulative Projects

Table 6-1
Cumulative Projects List

ID	Project Name	Project Type	DUs/TSF	
1	PA15 - Global Investment & DEV LLC	Single-Family Housing	272	DU
2	Tract 31305 - RSI	Single-Family Housing	168	DU
3	Tract 36933 - Beazer Homes	Single-Family Housing	275	DU
4	Tract 32548 - Gabel, Cook, and Associates	Single-Family Housing	107	DU
5	PA 15-0046 - LA Jolla Development/Rocas Grandes	Multi-Family Housing	426	DU
6	PA 13-0006 - Rancho Belago Developers Inc.	Multi-Family Housing	141	DU
7	PEN 16 - MV Bella Vista GP LLC (Aquabella)	~~Multi-Family Housing~~ Single-/Multi-Family Housing	~~220~~ 2,922	~~DU~~ DU
8	Moreno Valley Medical Plaza	Medical Office Building	217.00	TSF
9	Tract 33436 - Winchester Associates	Single-Family Housing	105	DU
10	Riverside University Health System Expansion	Medical Office Building	200.00	TSF
11	Eucalyptus Industrial Park	Warehousing, High-Cube Warehousing	2,244.60	TSF
12	World Logistics Center	Warehousing	40,600.00	TSF
13	TownGate Square	Office	463.48	TSF
14	Westcoast Textiles (DPR-0001)	Single-Family Housing	135	DU
15	Tract 22180 - RSI	Single-Family Housing	140	DU
16	Tract 30268	Multi-Family Housing	82	DU
17	PA15-0042 - Latco SC Inc.	Multi-Family Housing	112	DU
18	Winchester Associates - "Scottish Village"	Multi-Family Housing	194	DU
19	Tract 36401 - Continental East	Multi-Family Housing	125	DU
20	Tract 36708 - Nova Homes	Multi-Family Housing	122	DU
21	Latco SC Inc.	Multi-Family Housing	272	DU
22	Mainstreet Post-acute Care	Office/Medical	57.00	TSF
23	Gateway Business Park	Warehousing, High-Cube Warehousing	184.00	TSF
24	Elsworth Plaza	Warehousing, High-Cube Warehousing	30.00	TSF
25	Cactus Commerce Center	Warehousing, High-Cube Warehousing	44.30	TSF
26	MV Professional Office	Office	84.00	TSF
27	March Commerce Center	Commercial	42.15	TSF
28	Plaza Del Sol	Commercial	56.00	TSF
29	Iris Plaza	Commercial	87.12	TSF
30	Prologis Centerpointe	Warehousing, High-Cube Warehousing	601.81	TSF

Table 6-1
Cumulative Projects List

ID	Project Name	Project Type	DUs/TSF	
31	Brodiaea Business Park	Warehousing, High-Cube Warehousing	99.98	TSF
32	Alessandro Plaza	Commercial	122.16	TSF
33	Moreno Valley Commerce Center	Commercial	110.86	TSF
34	Moreno Valley Industrial Park	Warehousing, High-Cube Warehousing	207.68	TSF
35	Moreno Valley Industrial Park	Warehousing, High-Cube Warehousing	400.94	TSF
36	March Business Center	Warehousing, High-Cube Warehousing	1,703.00	TSF
37	17825 Indian St	Warehousing, High-Cube Warehousing	1,109.38	TSF
38	First Nandina Logistics	Warehousing, High-Cube Warehousing	1,388.21	TSF
39	Indian Street Commerce Center	Warehousing, High-Cube Warehousing	433.92	TSF
40	17825 Indian St	Warehousing, High-Cube Warehousing	360.45	TSF
41	Wal-Mart	Commercial	193.00	TSF
42	Tract 32515 - Lennar Homes-Meadow Creek	Single-Family Housing	148	DU
43	Tract 32005 - Red Hill Village	Single-Family Housing	214	DU
44	Tract 31592 - KB Homes	Single-Family Housing	139	DU
45	Tract 33256 - Pacific Communities	Single-Family Housing	100	DU
46	Tract 35823 - Lansing Companies	Single-Family Housing	562	DU
47	Tact 33222 - 26th Corp	Single-Family Housing	235	DU
48	Tract 36436 - KB Homes	Single-Family Housing	159	DU
49	Tract 34748 - Rados	Single-Family Housing	135	DU
50	Tract 35414 - Oak Park Partners	Multi-Family Housing	266	DU
51	PEN16-0039 - Latco SC Inc.	Multi-Family Housing	272	DU
52	PEN17-004 - City of Moreno Valley "Boulder Bridge"	Multi-Family Housing	141	DU
53	Tract 36760	Single-Family Housing	221	DU
54	Centerpointe Office Area	Office	258.00	TSF
55	First Industrial	Warehousing, High-Cube Warehousing	350.00	TSF
56	Towngate Highlands	Commercial	251.90	TSF
57	Stoneridge Towne Center	Commercial	124.17	TSF
58	Alessandro and Lasselle	Commercial	140.00	TSF
59	Stravisky Development Group	Warehousing, High-Cube Warehousing	330.00	TSF
60	Phelan Development	Warehousing, High-Cube Warehousing	98.00	TSF
61	Meridian March Business Park SP	Warehousing, High-Cube Warehousing	41,917.00	TSF
62	March Lifecare Medical Office	Medical Office Building	275.00	TSF
63	March Airport General Plan	Airport	559.00	TSF
64	Freeway Business Center	High Cube	710.00	TSF
65	Meridian Business Park North	Industrial park	5,985.00	TSF

Table 6-1
Cumulative Projects List

ID	Project Name	Project Type	DUs/TSF	
66	PLN 16-00013	Warehousing, High-Cube Warehousing	241.00	TSF
67	Bookend DPR 15-00010	Warehousing, High-Cube Warehousing	172.00	TSF
68	DPR 17-00001	Warehousing, High-Cube Warehousing	811.00	TSF
69	IPT Perris DC II	Warehousing, High-Cube Warehousing	273.00	TSF
70	Circle Industrial DPR 13-02-0005	Warehousing, High-Cube Warehousing	600.00	TSF
71	TTM 36648 Stratford Ranch	Single-Family Housing	275	DU
72	Harvest Landing Specific Plan	Single-Family Housing	345	DU
		Multi-Family Housing	1,856	DU
		Sports Park	727.45	TSF
		Business Park	1,233.40	TSF
		Commercial	73.18	TSF
73	Mission Pacific Commercial	Single-Family Housing	192.00	TSF
		Retail	15.00	TSF
		Supermarket	50.00	TSF
		Pharmacy	20.00	TSF
		High Turnover Restaurant	15.00	TSF
74	Tract Map 32917	Multi-Family Housing	227	DU
75	Alere	High Cube	644.00	TSF
76	Jordan Distribution Center	High Cube	378.00	TSF
77	Investment Development Services (IDS) II	High Cube	350.00	TSF
78	TR 30592	Single-Family	131	DU
79	Alessandro Commerce Center	Warehouse or High Cube	808.00	TSF
80	Villages at Lakeview	SFDH (MDR, MHDR)	2,200	DU
		High Density Residential	3,750	DU
		Mixed Use - Dwelling Units	2,775	DU
		Mixed Use - Commercial	555.00	TSF
		Commercial Office	825.00	TSF
		Schools	114.20	AC

Source: Appendix I, Traffic Impact Analysis. DU = dwelling unit; TSF = thousand square feet.

Appendix I, Traffic Impact Analysis

In response to comments, clarifications and updates were made to the TIA. The following table summarizes these changes, and updated TIA pages are included in Attachment E to this Errata.

Draft TIA Figure/Table	Description of Revision
Figure 2-1*	This figure has been updated to reflect the correct roadway network. *It should be noted that this figure is derived from the City's General Plan Circulation Element LOS Standard, dated July 2006. The City is currently updating its General Plan and the current figure with the roadway network LOS standard is not yet available. As such, the LOS standard for the

Draft TIA Figure/Table	Description of Revision
	project study area roadway segments and intersections will not change since these do not fall within the Moreno Highlands Specific Plan.
Figure 4-1	This figure has been updated to reflect the correct roadway network.
Figure 7-1	This figure has been updated to reflect the correct roadway network.
Figure 7-2	This figure has been updated to reflect the correct roadway network.
Figure 7-3	This figure has been updated to reflect the correct roadway network.
Figure 7-4	This figure has been updated to reflect the correct roadway network.
Figure 7-5	This figure has been updated to reflect the correct roadway network.
Figure 7-6	This figure has been updated to reflect the correct roadway network.
Figure 7-7	This figure has been updated to reflect the correct roadway network.
Figure 7-8	This figure has been updated to reflect the correct roadway network.
Figure 7-9	This figure has been updated to reflect the correct roadway network.
Figure 7-10	This figure has been updated to reflect the correct roadway network.
Figure 7-11	This figure has been updated to reflect the correct roadway network.
Figure 7-12	This figure has been updated to reflect the correct roadway network.
Figure 7-13	This figure has been updated to reflect the correct roadway network.
Figure 7-14	This figure has been updated to reflect the correct roadway network.
Figure 7-15	This figure has been updated to reflect the correct roadway network.
Table 4-B	This table has been updated to reflect that Cumulative Project No. 7 represents the Aquabella Specific Plan.
Table 8-E	This table has been updated with the pocket lengths for the proposed mitigation for Intersection No. 63 (Driveway 2/Iris Avenue).
Table 9-A	This table has been updated to reflect changes to Tables 9-M and 9-N. Additionally, the table title has been updated.
Table 9-B	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-C	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-D	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-E	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-F	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-G	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-H	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-I	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-J	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-K	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-L	This table has been updated to reflect changes to Tables 9-M and 9-N.
Table 9-M	This table has been updated to explain the reference to why no physical improvements are available at intersections.
Table 9-N	This table has been updated to explain the reference to why no physical improvements are available at roadway segments.
TIA	Text within the TIA has been updated to reflect changes shown in Tables 9-M and 9-N.

Attachments to Errata

A – Table ES-2
B – Table 4.14-32
C – Table 4.14-33
D – Table 4.14-34
E – Traffic Impact Analysis (TIA) Errata Pages

Appendix G1, Project Specific Water Quality Management Plan

Appendix G1 is revised and replaced with the new Project Specific Water Quality Management Plan (September 2019) included at the end of this Final EIR.

Appendix G2, Preliminary Technical Drainage Study

Appendix G2 is revised and replaced with the new Preliminary Technical Drainage Study (August 2019) included at the end of this Final EIR.

ATTACHMENT A

Table ES-2

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Cultural Resources			
CUL-2. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	Potentially Significant	**MM-CUL-1.** The applicant shall ensure that all ground-disturbing activities are ceased and treatment plans are implemented if archaeological resources are encountered. In the event that archaeological resources are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 100 feet shall be established around the find where construction activities shall not be allowed to continue until a qualified archaeologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards. Should the newly discovered artifacts be determined to be prehistoric, Native American Tribes/Individuals should be contacted and consulted and Native American construction monitoring should be initiated. The Applicant and City shall coordinate with the archaeologist to develop an appropriate treatment plan for the resources. The plan may include implementation of archaeological data recovery excavations to address treatment of the resource along with subsequent laboratory processing and analysis. In the event that a cultural resource is encountered during ground-disturbing activities, the landowner(s) shall relinquish ownership of all such resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Community Development Department, Planning Division ~~Department~~: 1. Accommodate the process for Preservation-In-Place/Onsite reburial of the discovered items with the consulting Native American tribes or bands, as detailed in the treatment plan prepared by the professional archaeologist. This shall include measures and provisions to protect the	Less than Significant

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed; 2. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and/or 3. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default. Once artifact analysis is completed, a final written report detailing the results of all research procedures and interpretation of the site shall be submitted to the lead agency for review and approval.	
Hydrology and Water Quality			
HYD-1. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Potentially Significant	**MM-HYD-1**. Treatment control Best Management Practice (BMP) features proposed for the ~~north~~ eastern project area, including ~~an~~ underground storage vaults and a modular wetland system ~~an underground storage pipe system~~ (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase I of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley. **MM-HYD-2**. Treatment control BMP features proposed for the ~~southern~~ western project area, including multiple bioretention ~~sand-filled detention~~ basins (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase II of the project.	Less than Significant

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley. **MM-HYD-3**. Consistent with the Design Handbook for Low Impact Development Best Management Practices (Riverside County Flood Control Water Conservation District 2011), Section 3.5 – Bioretention Basins, Inspection and Maintenance Schedule~~3.7 - Sand Filter Basins, Table 1- Recommended Inspection and Maintenance Activities for Sand Filter Basins~~, the following inspection and maintenance activities shall be implemented following basin construction: 1. Ongoing, the applicant shall a. Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance areas. b. Remove trash and debris. c. Replace damaged grass and/or plants. d. Replace surface mulch layer as needed to maintain a 2-3 inch soil cover. 2. After storm events, the applicant shall inspect areas for ponding. 3. Annually, the applicant shall inspect/clean inlets and outlets. ~~4. Semi-monthly, including just before the annual storm season and following rainfall events, the applicant shall:~~ ~~a. Complete routine maintenance and inspection.~~ ~~b. Remove debris and litter from the entire basin to minimize filter clogging and to improve aesthetics.~~ ~~c. Check for obvious problems, especially filter clogging and signs of long-term ponding. Repair as needed. Address odor, insects, and overgrowth issues associated with stagnant or standing water in the basin bottom. There should be no long-term ponding of water.~~	

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		~~d. Check for erosion and sediment laden areas in the basin. Repair as needed. Clean forebay if needed.~~ ~~e. Revegetate side slopes where needed.~~ ~~5. Annually, if possible, schedule inspections within 72 hours after a significant rainfall, including:~~ ~~a. Inspection of hydraulic and structural facilities. Examine the overflow outlet for clogging, the embankment and spillway integrity, and damage to any structural element.~~ ~~b. Check side slopes and embankments for erosion, slumping, and overgrowth.~~ ~~c. Inspect the sand media at the filter drain to verify it is allowing acceptable infiltration. Annually scarify the top 3 inches by raking the filter drain's sand surface.~~ ~~d. Check the filter drain underdrains for damage or clogging. Repair as needed.~~ ~~e. Repair basin inlets, outlets, forebays, and energy dissipaters whenever damage is discovered.~~ **f.** ~~No water should be present 72 hours after an event. No long-term standing water should be present at all. No algae formation should be visible. Correct problems as needed.~~	
HYD-5. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Potentially Significant	**MM-HYD-1**. Treatment control Best Management Practice (BMP) features proposed for the ~~north~~ eastern project area, including ~~an~~ underground storage vaults and a modular wetland system ~~an underground storage pipe system~~ (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase I of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley. **MM-HYD-2**. Treatment control BMP features proposed for the ~~southern~~ western project area, including multiple bioretention ~~sand-filled detention~~ basins (Figure	Less than Significant

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		4.9-4, Proposed Drainage), shall be constructed during Phase II of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley. **MM-HYD-3**. Consistent with the Design Handbook for Low Impact Development Best Management Practices (Riverside County Flood Control Water Conservation District 2011), Section 3.5 – Bioretention Basins, Inspection and Maintenance Schedule~~3.7 - Sand Filter Basins, Table 1- Recommended Inspection and Maintenance Activities for Sand Filter Basins~~, the following inspection and maintenance activities shall be implemented following basin construction: 1. Ongoing, the applicant shall a. Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance areas. b. Remove trash and debris. c. Replace damaged grass and/or plants. d. Replace surface mulch layer as needed to maintain a 2-3 inch soil cover. 2. After storm events, the applicant shall inspect areas for ponding. 3. Annually, the applicant shall inspect/clean inlets and outlets. ~~4. Semi-monthly, including just before the annual storm season and following rainfall events, the applicant shall:~~ ~~a. Complete routine maintenance and inspection.~~ ~~b. Remove debris and litter from the entire basin to minimize filter clogging and to improve aesthetics.~~ ~~c. Check for obvious problems, especially filter clogging and signs of long-term ponding. Repair as needed. Address odor, insects, and overgrowth issues associated with stagnant or standing~~	

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		~~water in the basin bottom. There should be no long-term ponding of water.~~ ~~d. Check for erosion and sediment laden areas in the basin. Repair as needed. Clean forebay if needed.~~ ~~e. Revegetate side slopes where needed.~~ ~~5. Annually, if possible, schedule inspections within 72 hours after a significant rainfall, including:~~ ~~a. Inspection of hydraulic and structural facilities. Examine the overflow outlet for clogging, the embankment and spillway integrity, and damage to any structural element.~~ ~~b. Check side slopes and embankments for erosion, slumping, and overgrowth.~~ ~~c. Inspect the sand media at the filter drain to verify it is allowing acceptable infiltration. Annually scarify the top 3 inches by raking the filter drain's sand surface.~~ ~~d. Check the filter drain underdrains for damage or clogging. Repair as needed.~~ ~~e. Repair basin inlets, outlets, forebays, and energy dissipaters whenever damage is discovered.~~ ~~No water should be present 72 hours after an event. No long-term standing water should be present at all. No algae formation should be visible. Correct problems as needed.~~	
Noise			
NOI-1. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance,	Potentially Significant	**MM-NOI-2**. The construction contractor shall require that all construction equipment be operated with original factory-installed or factory-approved noise control equipment (e.g., exhaust mufflers and silencers, intake filters, and engine shrouds as appropriate) that is properly installed and in good working order. Enforcement shall be accomplished via field inspections by applicant or third-party personnel during construction activities to the satisfaction of the City of Moreno Valley Public Works ~~Engineering~~ Department.	Less than Significant

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
or applicable standards of other agencies?			
Transportation			
TRA-1. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Potentially Significant	**Phase I Completion Year (2023) with Project Traffic Conditions** ***Intersections*** **MM-TRA-1**. Intersection No. 29 – Lasselle Street/Alessandro Boulevard: Pay TUMF fee for the following improvements: add eastbound through (EBT) and westbound through (WBT) lanes. **MM-TRA-2**. Intersection No. 39 – Evans Road/Ramona Expressway: Pay fair-share (1.6%) for the following improvements: add right-turn overlap phasing for westbound right (WBR) and southbound right (SBR) turn lanes. **MM-TRA-3**. Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue: Pay fair-share (26.8%) for the following improvements: add southbound left (SBL) turn lane. **MM-TRA-4**. Intersection No. 50 – Pearl Lane - Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the following improvement: install traffic signal. **MM-TRA-5**. Intersection No. 56 – Pearl Lane - Moreno Beach Drive/SR-60 Eastbound Ramps: Pay TUMF fee for the following improvements: add second southbound through (SBT) lane and eastbound right (EBR) turn lane. **MM-TRA-6**. Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay fair-share (8.0%) for the following improvements: add second southbound through (SBT) lane and northbound through (NBT) lane.	Significant and Unavoidable

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-TRA-7. Intersection No. 30 – Lasselle Street/Cactus Avenue: Pay fair-share (16.3%) for the following improvement: add right-turn overlap phasing for westbound right (WBR) turn lane. **MM-TRA-8**. Intersection No. 33 – Lasselle Street/~~Cactus~~ Krameria Avenue: Pay fair-share (9.2 9.66%) for the following improvements: restripe eastbound approach from eastbound left (EBL), eastbound through (EBT) and eastbound right (EBR) to two EBL, EBT, and EBTR, restripe westbound approach from westbound left (WBL), westbound through (WBT), and westbound right (WBR) to WBL, WBT and WBTR. ~~add westbound right (WBR) turn lane.~~ **MM-TRA-9.** Intersection No. 27 – Kitching Street/Cactus Avenue: Pay fair share (29.6%) for the following improvements: restripe southbound right (SBR) to a southbound through right (SBTR), widen the south leg of the intersection for a second receiving lane. **MM-TRA-54**. Intersection No. 8 – Elsworth Street/Cactus Avenue: Pay fair share (6.24%) for the following improvement: widen the south leg of the intersection to add a northbound through lane (NBT).	Significant and Unavoidable
		No feasible mitigation measures available for: • Project Driveway 1/Iris Avenue • Intersection No. 8 – Elsworth Street/Cactus Avenue • Intersection No. 17 – Indian Street/Cactus Avenue ~~• Intersection No. 27 – Kitching Street/Cactus Avenue~~ • Intersection No. 28 – Kitching Street/Iris Avenue ~~• Intersection No. 33 – Lasselle Street/Cactus Avenue: Pay fair-share (9.2%) for the following improvement: add westbound right turn lane~~ • Intersection No. 38 – Lasselle Street/Via De Anza - Rancho Verde High School	Significant and Unavoidable

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Roadway Segments **MM-TRA-~~9~~10**. Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard: Pay fair-share (17.3%) to improve the roadway segment to the classification of four-lane divided arterial. **MM-TRA-~~10~~11**. Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue: Pay fair-share (15.2%) to improve the roadway segment to the classification of four-lane divided arterial. **MM-TRA-~~11~~12**. Alessandro Boulevard between Kitching Street and Lasselle Street: Pay TUMF fee to improve the roadway segment to the classification of four-lane divided arterial. **MM-TRA-~~12~~13**. Alessandro Boulevard between Lasselle Street and Nason Street: Pay TUMF fee to improve the roadway segment to the classification of four-lane divided arterial. **MM-TRA-~~13~~14**. Alessandro Boulevard between Nason Street and Moreno Beach Drive: Pay TUMF fee to improve the roadway segment to the classification of a four-lane divided arterial.	Significant and Unavoidable
		MM-TRA-~~14~~15. ~~Alessandro Boulevard between Nason Street and Moreno Beach Drive: Pay TUMF fee to improve the roadway segment to the classification of a four-lane divided arterial.~~ Cactus Avenue between -215 Northbound Ramps – Old Frontage Road and Elsworth Street: Pay TUMF/fair-share fee to widen roadway from four lanes to six lanes.	Significant and Unavoidable

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Phase II Completion Year (2032) with Project Traffic Conditions ***Intersections*** **MM-TRA-~~15~~16**. Intersection No. 5 – I-215 northbound ramps - Old 215 Frontage Road/Cactus Avenue: Pay TUMF fee for the following improvements: interchange redesign and widening of the bridge to 6 lanes. Add second northbound left (NBL) and northbound through (NBT), second southbound left (SBL), dedicated southbound right (SBR) with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing. **MM-TRA-~~16~~17**. Intersection No. 6 – Day Street/Alessandro Boulevard: Pay TUMF fee for the addition of a westbound through (WBT) lane. Pay fair-share (1.0%) for the following improvements: convert north-south movement to protected phasing, add southbound right, add second ~~southbound~~ eastbound left (~~S~~EBL) and second westbound left (WBL), ~~southbound right (SBR) with overlap phasing, second eastbound left (EBL) turn lane,~~ add overlap phasing to westbound right (WBR). **MM-TRA-~~17~~18**. Intersection No. 11 – Graham Street/Alessandro Boulevard: Pay TUMF fee for the addition of an eastbound through (EBT) lane. **MM-TRA-~~18~~19**. Intersection No. 25 – Perris Boulevard/Harley Knox Boulevard: Pay fair-share (1.3%) for the following improvements: add right-turn overlap phasing for westbound right (WBR) and southbound right (SBR) movements. **MM-TRA-~~19~~20**. Intersection No. 29 – Lasselle Street/Alessandro Boulevard: Pay fair-share (4.3%) for the addition of a southbound through (SBT) lane. **MM-TRA-~~20~~21**. Intersection No. 45 – Nason Street/Eucalyptus Avenue: Pay fair-share (6.1%) for the following improvements: add eastbound right (EBR) turn lane, northbound right (NBR) turn lane, and southbound right (SBR) turn lanes.	Significant and Unavoidable

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Add right-turn overlap phasing for eastbound right (EBR), northbound right (NBR), and southbound right (SBR) movements. **MM-TRA-~~21~~22**. Intersection No. 56 – Pearl Lane – Moreno Beach Drive/SR-60 Eastbound Ramps: Pay TUMF fee for the following improvements: add second northbound through (NBT), add second southbound through (SBT), restripe southbound through left to southbound left and restripe eastbound through left through to eastbound left-through-right. **MM-TRA-~~22~~23**. Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay TUMF fee for the addition of second eastbound through (EBT) lane and second westbound through (WBT) lane, second northbound through (NBT) lane, second southbound through (SBT) lane and northbound right (NBR) lane. Pay fair-share (8.0%) for northbound right overlap phasing.	
		MM-TRA-~~23~~24. Intersection No. 19 – Perris Boulevard/Alessandro Boulevard: Pay fair-share (2.7%) for the following improvements: add eastbound through (EBT) by removing the center median along both east and west leg approaches and shifting the left-turn lanes to accommodate the through lane. Add right-turn overlap phasing for the NBR, SBR, and EBR. No further mitigations feasible due to right-of-way constraints. **MM-TRA-~~24~~25**. Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue: Pay fair-share (26.8%) for the following improvements: a second southbound right (SBR). No further mitigations feasible due to right-of-way constraints.	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		No feasible mitigation measures available for: • Intersection No. 7 – Elsworth Street/Alessandro Boulevard • Intersection No. 8 – Elsworth Street/Cactus Avenue • Intersection No. 12 – Graham Street-Riverside Drive/Cactus Avenue • Intersection No. 17 – Indian Street/Cactus Avenue • Intersection No. 27 – Kitching Street/ Cactus Avenue • Intersection No. 28 – Kitching Street/Iris Avenue • Intersection No. 30 – Lasselle Street/Cactus Avenue • Intersection No. 32 – Lasselle Street/Iris Avenue • Intersection No. 33 – Lasselle Street/Krameria Avenue • Intersection No. 38 – Lasselle Street/Via De Anza - Rancho Verde High School	Significant and Unavoidable
		Roadway Segments **MM-TRA-~~25~~26**. Lasselle Street-Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway: Pay fair-share (4.0%) to improve the roadway segment to the classification of a six-lane arterial. ~~**MM-TRA-26**. Nason Street-Evans Road between Eucalyptus Avenue and Cottonwood Avenue: Pay fair-share (6.7%) to improve the roadway segment to the classification of a six-lane arterial.~~ **MM-TRA-27**. Nason Street-Evans Road between Cottonwood Avenue and Alessandro Boulevard: Pay fair-share (9.0%) to improve the roadway segment to the classification of a six-lane arterial. **MM-TRA-28**. Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue: Pay fair-share (7.4%) to improve the roadway segment to the classification of a six-lane divided arterial.	Significant and Unavoidable

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-TRA-29. Alessandro Boulevard between Day Street and Elsworth Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial. **MM-TRA-30.** Alessandro Boulevard between Frederick Street and Graham Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial. **MM-TRA-31**. Alessandro Boulevard between Graham Street and Heacock Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial. **MM-TRA-32**. Alessandro Boulevard between Kitching Street and Lasselle Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	
		MM-TRA-33. Alessandro Boulevard between I-215 northbound ramps and Day Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Significant and Unavoidable
		No feasible mitigation measures available for: • Lasselle Street between Iris Avenue and Krameria Avenue • Lasselle Street between Krameria Avenue and Via Xavier Lane • Lasselle Street between Via Xavier Lane and Lasselle Sports Park – Rojo Tierra • Lasselle Street between Lasselle Sports Park – Rojo Tierra and Cremello Way – Avenida De Plata • Lasselle Street between Cremello Way – Avenida De Plata and Avenida Classica – Kentucky Derby Drive • Cactus Avenue between I-215 northbound ramps – Old Frontage Road and Elsworth Street	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Nason Street-Evans Road between Eucalyptus Avenue and Cottonwood Avenue	
		Phase III Completion Year (2038) with Project Traffic Conditions ***Intersections*** **MM-TRA-34**. Intersection No. 9: Frederick Street/Alessandro Boulevard: Pay TUMF fee for the addition of an eastbound through (EBT) lane. **MM-TRA-35**. Intersection No. 11: Graham Street/Alessandro Boulevard: Pay TUMF fee for the addition of second eastbound through (EBT) lane and a second westbound through (WBT) lane. **MM-TRA-36**. Intersection No. 13: Heacock Street/Alessandro Boulevard: Pay fair-share (2.6%) for the following improvements: add second eastbound left (EBL) turn lane. **MM-TRA-37**. Intersection No. 22: Perris Boulevard/Krameria Avenue: Pay fair-share (1.5%) to restripe westbound approach to westbound left (WBL) and shared westbound through-right (WBTR). **MM-TRA-38**. Intersection No. 25: Perris Boulevard/Harley Knox Boulevard: Pay fair-share (1.3%) for the addition of an eastbound left (EBL) turn lane and add right-turn overlap phasing for westbound right (WBR) and southbound right (SBR) movements. **MM-TRA-39**. Intersection No. 29: Lasselle Street/Alessandro Boulevard: Pay TUMF fee for the addition of a second westbound through (WBT) and a second eastbound through (EBT) lane.	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-TRA-40. Intersection No. 47: Nason Street/Alessandro Boulevard: Pay TUMF fee for the addition of a westbound through (WBT) lane. **MM-TRA-41**. Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue; pay fair-share (26.8%) for the addition of a southbound right (SBR) turn lane. **MM-TRA-42**. Intersection No. 50: Peal Lane-Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the addition of an eastbound left (EBL) turn lane. **MM-TRA-43** Intersection No. 57: Moreno Beach Drive/Eucalyptus Avenue: Pay fair share (5.4%) for the following improvements: add southbound left (SBL) and southbound through (SBT). **MM-TRA-~~43~~44**. Intersection No. 58: Moreno Beach Drive/Cottonwood Avenue: Pay fair-share (9.4%) for the following improvements: add westbound left (WBL), and restripe westbound approach as westbound left (WBL) and shared westbound through-right (WBTR). Change the split phasing for the east-west approach to permitted phasing. **MM-TRA-~~44~~45**. Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay fair-share (8.0%) for addition of second westbound left (WBL) turn-lane.	
		MM-TRA-~~45~~46. Intersection No. 21: Perris Boulevard/Iris Avenue: Pay fair-share (3.1%) to add overlap phasing to northbound right (NBR). **MM-TRA-~~46~~47**. Intersection No. 39 – Evans Road/Ramona Expressway: Pay TUMF fee for addition of westbound through (WBT) lane.	Significant and Unavoidable
		No feasible mitigation measures available for: • Intersection No. 6 – Day Street/Alessandro Boulevard	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Intersection No. 7 – Elsworth Street/Alessandro Boulevard • Intersection No. 8 – Elsworth Street/Cactus Avenue • Intersection No. 12 – Graham Street-Riverside Drive/Cactus Avenue • Intersection No. 17 – Indian Street/Cactus Avenue • Intersection No. 19 – Perris Boulevard/Alessandro Boulevard • Intersection No. 27 – Kitching Street/ Cactus Avenue • Intersection No. 28 – Kitching Street/Iris Avenue • Intersection No. 30 – Lasselle Street/Cactus Avenue • Intersection No. 32 – Lasselle Street/Iris Avenue • Intersection No. 33 – Lasselle Street/Krameria Avenue • Intersection No. 38 – Lasselle Street/Via De Anza - Rancho Verde High School • ~~Intersection No. 57 – Moreno Beach Drive/Eucalyptus Avenue~~	
		Roadway Segments **MM-TRA-4~~7~~48**. Alessandro Boulevard between Perris Boulevard and Kitching Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Significant and Unavoidable
		No feasible mitigation measures available for: • Perris Boulevard between Krameria Avenue to San Michele Road • Perris Boulevard between San Michele Road to Nandina Avenue • Perris Boulevard between Nandina Avenue to Harley Knox Boulevard • Lasselle Street between Iris Avenue and Krameria Avenue • Lasselle Street between Krameria Avenue and Via Xavier Lane • Lasselle Street between Via Xavier Lane and Lasselle Sports Park – Rojo Tierra • Lasselle Street between Lasselle Sports Park – Rojo Tierra and Cremello Way – Avenida De Plata	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Lasselle Street between Cremello Way – Avenida De Plata and Avenida Classica – Kentucky Derby Drive • Lasselle Street between Avenida Classica – Kentucky Derby Drive and Via De Anza-Rancho Verde High School • Nason Street between Eucalyptus Avenue and Cottonwood Avenue • Alessandro Boulevard between I-215 northbound ramps and Day Street • Alessandro Boulevard between Graham Street and Heacock Street • Alessandro Boulevard between Heacock Street and Indian Street • Cactus Avenue between I-215 northbound ramps – Old Frontage Road and Elsworth Street • Cactus Avenue between Elsworth Street and Frederick Street • Cactus Avenue between Frederick Street and Graham Street – Riverside Drive • Iris Avenue between Perris Boulevard and Kitching Street • Iris Avenue between Lasselle Street and Camino Flores • Iris Avenue between Camino Flores and Coachlight Court – Avenida De Circo • Iris Avenue between Coachlight Court – Avenida De Circo and Grade Vista Drive • Iris Avenue between Grande Vista Drive and Nason Street – Hillrose Lane	
		General Plan Buildout (2040) with Project Traffic Conditions ***Intersections*** **MM-TRA-~~48~~49.** Intersection No. 47: Nason Street/Alessandro Boulevard: Pay fair-share (9.6%) fee for the addition of a northbound left (NBL) turn-lane. **MM-TRA-~~49~~50.** Intersection No. 50: Pearl Lane-Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the addition of a westbound left (WBL) turn lane.	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		No feasible mitigation measures available for: • Intersection No. 6: Day Street/Alessandro Boulevard: • Intersection No. 7 – Elsworth Street/Alessandro Boulevard • Intersection No. 8 – Elsworth Street/Cactus Avenue • Intersection No. 12 – Graham Street-Riverside Drive/Cactus Avenue • Intersection No. 13 - Heacock Street/Alessandro Boulevard • Intersection No. 17 – Indian Street/Cactus Avenue • Intersection No. 19 – Perris Boulevard/Alessandro Boulevard • Intersection No. 20 – Perris Boulevard/Cactus Avenue • Intersection No. 21- Perris Boulevard/Iris Avenue • Intersection No. 27 – Kitching Street/ Cactus Avenue • Intersection No. 28 – Kitching Street/Iris Avenue • Intersection No. 30 – Lasselle Street/Cactus Avenue • Intersection No. 32 – Lasselle Street/Iris Avenue • Intersection No. 33 – Lasselle Street/Krameria Avenue • Intersection No. 38 – Lasselle Street/Via De Anza - Rancho Verde High School • Intersection No. 39 – Evans Road/Ramona Expressway • Intersection No. 45 - Nason Street/Eucalyptus Avenue • Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue • Intersection No. 57 – Moreno Beach Drive/Eucalyptus Avenue	Significant and Unavoidable
		Roadway Segments **MM-TRA-~~50~~51.** Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue: Pay fair-share (15.18%) to improve the roadway segment to the classification of a six-lane divided arterial.	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		MM-TRA-~~51~~52. Alessandro Boulevard between Lasselle Street and Nason Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	
		No feasible mitigation measures available for: • Perris Boulevard between Iris Avenue and Krameria Avenue • Perris Boulevard between Krameria Avenue to San Michele Road • Perris Boulevard between San Michele Road to Nandina Avenue • Perris Boulevard between Nandina Avenue to Harley Knox Boulevard • Lasselle Street between Iris Avenue and Krameria Avenue • Lasselle Street between Krameria Avenue and Via Xavier Lane • Lasselle Street between Via Xavier Lane and Lasselle Sports Park – Rojo Tierra • Lasselle Street between Lasselle Sports Park – Rojo Tierra and Cremello Way – Avenida De Plata • Lasselle Street between Cremello Way – Avenida De Plata and Avenida Classica – Kentucky Derby Drive • Lasselle Street between Avenida Classica – Kentucky Derby Drive and Via De Anza-Rancho Verde High School • Nason Street between Eucalyptus Avenue and Cottonwood Avenue • Alessandro Boulevard between I-215 northbound ramps and Day Street • Alessandro Boulevard between Day Street and Elsworth Street • Alessandro Boulevard between Frederick Street and Graham Street • Alessandro Boulevard between Graham Street and Heacock Street • Alessandro Boulevard between Heacock Street and Indian Street • Alessandro Boulevard between Indian Street and Perris Boulevard • Cactus Avenue between I-215 northbound ramps – Old • Cactus Avenue between Elsworth Street and Frederick Street	Significant and Unavoidable

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Cactus Avenue between Frederick Street and Graham Street – Riverside Drive • Iris Avenue between Perris Boulevard and Kitching Street • Iris Avenue between Lasselle Street and Camino Flores • Iris Avenue between Camino Flores and Coachlight Court – Avenida De Circo • Iris Avenue between Coachlight Court – Avenida De Circo and Grade Vista Drive • Iris Avenue between Grande Vista Drive and Nason Street – Hillrose Lane • Iris Avenue between Nason Street-Hillrose Lane and Driveway 1	
		Intersections and Roadway Segments with No Available Physical Improvements **MM-TRA-53**. The project shall contribute a total fair share contribution of $26,100 to the following Capital Improvement Plan (CIP) improvements: Heacock Street, between Nandina Avenue and Harley Knox Boulevard; and Indian Street, between Krameria Avenue and San Michele Road. As provided in the City's CIP, these improvements consist of extending Heacock Street's existing southern terminus to Harley Knox Boulevard and constructing a four-lane bridge on Indian Street over the Flood Control Channel Lateral A to connect to the existing terminus.	Significant and Unavoidable
TRA-2. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Less than Significant	N	N/A
TRA-3. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	~~Less than~~ Potentially Significant	**MM-TRA-55**. Prior to the completion of Phase I construction, the project shall extend the existing eastbound left-turn storage lane of Driveway 2 by 30 feet. **MM-TRA-56**. Prior to the completion of Phase II construction, the project shall remove the existing raised median on Iris Avenue for the eastbound approach to Driveway 2, stripe the eastbound approach to accommodate a second eastbound	~~N/A~~ Less than Significant

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		left-turn lane, and extend the dual left-turn pocket up to 400 feet. Additionally, the existing southbound left-turn storage at Driveway 2 shall be extended to 200 feet prior to the completion of Phase II construction. ~~N/A~~	
TRA-4. Would the project result in inadequate emergency access?	Less than Significant	N/A	N/A
Tribal Cultural Resources			
TCR-1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, 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:			
i) 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	N/A	N/A

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ii) 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 American tribe.)	Potentially Significant	**MM-TCR-1.** Prior to the issuance of a grading permit, the Applicant shall retain a qualified professional archaeologist who meets U.S. Secretary of the Interior's Professional Qualifications and Standards. The project archaeologist, in consultation with the Soboba Band of Luiseno Indians ~~Consulting Tribe(s)~~, the construction manager, and any contractors ~~(hereafter referred to as "Native American Tribal Representatives")~~ will conduct an Archaeological Sensitivity Training for construction personnel prior to commencement of excavation activities. The training session will include a handout and will focus on how to identify archaeological and Tribal Cultural Resources that may be encountered during earthmoving activities and the procedures to be followed in such an event, including who to contact and the appropriate avoidance measures that need to be undertaken until the find(s) can be properly evaluated; the duties of archaeological and Soboba Band of Luiseno Indians~~Native American~~ monitors; and the general steps a qualified professional archaeologist would follow in conducting a salvage investigation if one is necessary. All new construction personnel that will conduct earthwork or grading activities must take the Archaeological Sensitivity Training prior to beginning work on the project and the professional archaeologist shall make themselves available to provide the training on an as-needed basis. A sign-in sheet shall be compiled to track attendance and shall be submitted to the City of Moreno Valley with the Phase IV Archaeological Monitoring Report. **MM-TCR-2.** Preconstruction Notification of Soboba Band of Luiseno Indians ~~Native American Tribal~~ Representatives. Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that the Soboba Band of Luiseno Indians ~~Native American Tribal~~ Representatives received a minimum of 30 days advance notice of all mass grading and trenching activities, and provide evidence of monitoring agreements between the Applicant and the Tribes. The Soboba Band of Luiseno Indians ~~Native American Tribal~~ Representatives shall be notified a minimum of 48 hours in advance and allowed	Less than Significant

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		to attend the pre-grading meeting with the City and project construction contractors and/or monitor all project mass grading and trenching activities. **MM-TCR-3.** Prior to grading permit issuance, the Applicant and the City of Moreno Valley 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 archaeological monitor or Soboba Band of Luiseno Indians ~~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 Soboba Band of Luiseno Indians ~~Native American Tribal~~ Representatives to the site to assess the significance of the find." **MM-TCR-4.** Prior to the issuance of a grading permit, the Applicant shall retain a qualified archaeological monitor as well as secure an agreement with the Soboba Band of Luiseno Indians for the tribal monitoring. The archaeological monitor will work under the direction and guidance of the qualified professional archaeologist and will meet the U.S. Secretary of the Interior's Professional Qualifications and Standards. The archeological monitor and the Soboba Band of Luiseno Indians monitor shall have the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. Archaeological and tribal cultural monitoring is required at all depths and strata. The archaeological and tribal cultural monitors shall be present during all construction excavations (e.g., grading, trenching, or clearing/grubbing) into non-fill younger Pleistocene alluvial sediments. Multiple earth-moving construction activities may require multiple archaeological monitors. The frequency of monitoring shall be based on the rate of excavation and grading activities, proximity to any known archaeological resources, the materials being excavated (native versus artificial fill soils), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered. Full-	

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		time monitoring can be reduced to part-time inspections if determined adequate by the qualified professional archaeologist. **MM-TCR-5.** The applicant shall ensure that all ground-disturbing activities are ceased and treatment plans are implemented if tribal cultural resources (TCRs) are encountered. In the event that TCRs are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 100 feet shall be established around the find where construction activities shall not be allowed to continue until a qualified archaeologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside of the buffer area. All TCRs unearthed by project construction activities shall be evaluated by a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards. In the event that a TCR is encountered during ground-disturbing activities, the landowner(s) shall relinquish ownership of all such resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Planning Department: 1. Accommodate the process for Preservation-In-Place/Onsite reburial of the discovered items with the Soboba Band of Luiseno Indians ~~consulting Native American tribes or bands~~, as detailed in the treatment plan prepared by the professional archaeologist. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed; 2. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal	

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Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Regulations (CFR) Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and/or 3. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default. **MM-TCR-6.** Prior to the issuance of a grading permit, project archaeologist, in consultation with the Soboba Band of Luiseno Indians, the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the CRMP shall include: d. Project grading and development scheduling; e. The project archeologist and the Soboba Band of Luiseno Indians as defined in MM-TCR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and shall conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training shall 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 shall conduct earthwork or grading activities that begin	

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Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		work on the project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the project archaeologist and Soboba Band of Luiseno Indians shall make themselves available to provide the training on an as-needed basis; f. The protocols and stipulations that the contractor, City, Soboba Band of Luiseno Indians, and project archaeologist shall 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. **MM-TCR-~~6~~7.** Prior to building permit issuance, the project archaeologist shall prepare a final Phase IV Monitoring Report as outlined in the Cultural Resources Monitoring Program (CRMP), which shall be submitted to the City of Moreno Valley Planning Division, the Soboba Band of Luiseno Indians ~~appropriate Native American tribe(s)~~, and the Eastern Information Center at the University of California, Riverside. The report shall include a description of resources unearthed, if any, evaluation of the resources with respect to the California Register and CEQA, and treatment of these resources. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated in a Riverside County repository according to the current professional repository standards and may include ~~the Pechanga Band's curatorial facility in Temecula, California,~~ the Western Science Center or other federally approved repository. **MM-TCR-8.** 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), Soboba Band of Luiseno Indians Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend	

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		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 the Soboba Band of Luiseno Indians, as defined in the Cultural Resources Management Plan, prepared under MM-TCR-6, before any further work commences in the affected area. **MM-TCR-~~7~~9.** In the event that any human remains are unearthed during project construction, the City of Moreno Valley and the Applicant shall comply with State Health and Safety Code Section 7050.5 The City of Moreno Valley and the Applicant shall immediately notify the Riverside County Coroner's office and no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition. If remains are determined to be of Native American descent, the coroner has 24-hours to notify the Native American Heritage Commission (NAHC). The NAHC shall identify the person(s) thought to be the Most Likely Descendant (MLD). After the MLD has inspected the remains and the site, they have 48 hours to recommend to the landowner the treatment or disposal, with appropriate dignity, of the human remains and any associated funerary objects. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the landowner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and cultural items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple	

Table ES-2
Summary of Environmental Impacts and Mitigation Measures

Environmental Topic	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		human remains. The landowner shall discuss and confer with the MLD all reasonable options regarding the MLDs preferences for treatment. If the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.	

ATTACHMENT B

Table 4.14-32

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
3	I-215 Southbound Ramps/Cactus Avenue			Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.
4	I-215 Northbound Ramps/Cactus Avenue			Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.
5	I-215 Northbound Ramps - Old 215 Frontage Road/Cactus Avenue			Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing
6	Day Street/Alessandro Boulevard			Convert N-S to protected phasing. Add SBR 2nd EBL and 2nd ~~,~~ WBR~~L WBT, add overlap phasing to WBR~~. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Convert N-S to protected phasing. Add SBR 2nd EBL and 2nd ~~,~~ WBR~~L WBT, add overlap phasing to WBR~~. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Convert N-S to protected phasing. Add SBR 2nd EBL and 2nd ~~,~~ WBR~~L WBT, add overlap phasing to WBR~~. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
7	Elsworth Street/Alessandro Boulevard			No physical improvements are available~~mitigations feasible due to right-of-way constraints~~.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~.
8	Elsworth Street/Cactus Avenue		Add NBT. No other physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Add NBT. No other physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Add NBT. No other physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Add NBT. No other physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
9	Frederick Street/Alessandro Boulevard				Add EBT.	Add EBT.
11	Graham Street/Alessandro Boulevard			Add EBT,	Add EBT, Add a 2nd EBL. Add a 2nd WBL.	Add EBT, Add a 2nd EBL. Add a 2nd WBL.
12	Graham Street - Riverside Drive/Cactus Avenue			No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
13	Heacock Street/Alessandro Boulevard				Add 2nd EBL. Add 2nd WBL.	Add 2nd WBL. Intersection is forecasted to operate at a deficient

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
						LOS after implementation of the recommended improvements.
17	Indian Street/Cactus Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
19	Perris Boulevard/Alessandro Boulevard			Add EBT by removing the center median along both east and west leg approaches and shifting the left-turn lanes to accommodate the through lane. Add right-turn overlap phasing for the NBR, SBR, and EBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the	Add EBT by removing the center median along both east and west leg approaches and shifting the left-turn lanes to accommodate the through lane. Add right-turn overlap phasing for the NBR, SBR, and EBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the	Add EBT by removing the center median along both east and west leg approaches and shifting the left-turn lanes to accommodate the through lane. Add right-turn overlap phasing for the NBR, SBR, and EBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
				recommended improvements.	recommended improvements.	recommended improvements.
20	Perris Boulevard/Cactus Avenue			No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
21	Perris Boulevard/Iris Avenue				Add EBR with overlap phasing, add overlap phasing to NBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add EBR with overlap phasing, add overlap phasing to NBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
22	Perris Boulevard/Krameria Avenue				Restripe westbound approach to WBL and WBTR.	Restripe westbound approach to WBL and WBTR.

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
25	Perris Boulevard/Harley Knox Boulevard			Add right-turn overlap phasing for WBR and SBR.	Add one EBL. Add right-turn overlap phasing for WBR and SBR.	Add one EBL. Add right-turn overlap phasing for WBR and SBR.
27	Kitching Street/Cactus Avenue	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further physical improvements are available~~mitigations feasible due to right-of-way constraints s~~. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
28	Kitching Street/Iris Avenue		No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
29	Lasselle Street/Alessandro Boulevard		Add one EBT and WBT.	Add one SBT, one EBT, and one WBT.	Add one SBT, two EBT, and two WBT.	Add one SBT, two EBT, and two WBT.
30	Lasselle Street/Cactus Avenue	Add right-turn overlap phasing for WBR. No further physical improvements are available~~mitigations~~	Add right-turn overlap phasing for WBR. No physical improvements are available~~mitigations feasible due to right-of-~~	Add right-turn overlap phasing for WBR. No physical improvements are available~~mitigations feasible due to right-of-~~	Add right-turn overlap phasing for WBR. No physical improvements are available~~mitigations feasible due to right-of-~~	Add right-turn overlap phasing for WBR. No physical improvements are available~~mitigations feasible due to right-of-~~

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
		~~feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	~~way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	~~way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	~~way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	~~way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
32	Lasselle Street/Iris Avenue			No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
33	Lasselle Street/Krameria Avenue	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
		to operate at a deficient LOS.	to operate at a deficient LOS.	to operate at a deficient LOS.	to operate at a deficient LOS.	to operate at a deficient LOS.
38	Lasselle Street/Via De Anza - Rancho Verde High School	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
39	Evans Road/Ramona Expressway		Add right-turn overlap phasing for WBR and SBR.	Add right-turn overlap phasing for WBR and SBR.	Add WBT. Add right-turn overlap phasing for WBR and SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add WBT. Add right-turn overlap phasing for WBR and SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
45	Nason Street/Eucalyptus Avenue			Add EBR, NBR, and SBR. Add right-turn overlap phasing for EBR, NBR, and SBR.	Add EBR, NBR, and SBR. Add right-turn overlap phasing for EBR, NBR, and SBR.	Add EBR, NBR, and SBR. Add right-turn overlap phasing for EBR, NBR, and SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~.

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
						Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
47	Nason Street/Alessandro Boulevard				Add WBT. Right-of-way for the WBT can be taken from the northerly sidewalk along the east leg.	Add NBL and WBT. Right-of-way for the WBT can be taken from the northerly sidewalk along the east leg.
49	Nason Street-Hillrose Lane/Iris Avenue	Add second SBL.	Add second SBL.	Add second SBL, second SBR, No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add a second SBL, second SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add second SBL, second SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
50	Pearl Lane - Oliver Street/Alessandro Boulevard	Install a signal.	Install a signal.	Install a signal.	Add EBL. Install a Signal.	Add EBL. Add WBL. Install a Signal.
56	Moreno Beach Drive/SR-60 Eastbound Ramps		Add second SBT Restripe SBTL to SBL. Restripe EBTL to EBLTR.[3]	Add second NBT, second SBT, Restripe SBTL to SBL. Restripe EBTL to EBLTR.	Add NBT, SBT, Restripe SBTL to SBL. Restripe EBTL to EBLTR.	Add NBT, SBT, Restripe SBTL to SBL. Restripe EBTL to EBLTR.

Table 4.14-32
Recommended Improvements for Intersections

	Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 Mitigations[2,4]
57	Moreno Beach Drive/Eucalyptus Avenue				Add SLB and SBT. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Add SLB and SBT. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.
58	Moreno Beach Drive/Cottonwood Avenue				Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.	Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.
59	Moreno Beach Drive/Alessandro Boulevard		Add second SBT and NBT.	Add second EBT, second WBT, second NBT, second SBT, and NBR	Add second EBL, Add second WBL, second EBT, second WBT, second NBT, second SBT, and NBR	Add second EBL ,Add second WBL, second EBT, second WBT, second NBT, second SBT, and NBR

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ATTACHMENT C

Table 4.14-33

Table 4.14-33
Intersection Improvement Funding Mechanism and Fair Share

	Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1,3]	Improvements Covered Under Fair Share	Fair Share Percentage[2,3]
3	I-215 Southbound Ramps/Cactus Avenue	Interchange Redesign, widen bridge to 6 lanes.	TUMF	Interchange Redesign, widen bridge to 6 lanes.		N/A
4	I-215 Northbound Ramps/Cactus Avenue	Interchange Redesign, widen bridge to 6 lanes.	TUMF	Interchange Redesign, widen bridge to 6 lanes.		N/A
5	I-215 Northbound Ramps - Old 215 Frontage Road/Cactus Avenue	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing	TUMF	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing		N/A
6	Day Street/Alessandro Boulevard	Convert N-S to protected phasing, add SBR, add~~ , SBR,~~ 2nd EBL and 2nd WBL, ~~WBT,~~ add overlap phasing to WBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	~~TUMF/~~Fair Share	~~Add WBT.~~	Convert N-S to protected phasing, SBR 2nd EBL and 2nd WBL, add overlap phasing to WBR	1.00%
7	Elsworth Street/Alessandro Boulevard	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~.	Fair Share			1.42%
8	Elsworth Street/Cactus Avenue	Add NBT. No other physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Fair Share			6.24%
9	Frederick Street/Alessandro Boulevard	Add EBT.	TUMF	Add EBT.		N/A
11	Graham Street/Alessandro Boulevard	Add EBT, add a 2nd EBL and add a 2nd WBL.	TUMF/Fair Share	Add EBT.	Add 2nd EBL and 2nd WBL	1.65%

Table 4.14-33
Intersection Improvement Funding Mechanism and Fair Share

	Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1,3]	Improvements Covered Under Fair Share	Fair Share Percentage[2,3]
12	Graham Street - Riverside Drive/Cactus Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Fair Share			10.67%
13	Heacock Street/Alessandro Boulevard	Add 2nd EBL and a 2nd WBL. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Fair Share		Add 2nd EBL and 2nd WBL	2.57%
17	Indian Street/Cactus Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Fair Share			26.73%
19	Perris Boulevard/Alessandro Boulevard	Add EBT No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	TUMF	Add EBT.		2.69%
20	Perris Boulevard/Cactus Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Fair Share		Add EBR.	6.98%
21	Perris Boulevard/Iris Avenue	Add overlap phasing to NBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Fair Share		Add overlap phasing to NBR.	3.11%

Table 4.14-33
Intersection Improvement Funding Mechanism and Fair Share

	Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1,3]	Improvements Covered Under Fair Share	Fair Share Percentage[2,3]
22	Perris Boulevard/Krameria Avenue	Restripe westbound approach to WBL and WBTR.	Fair Share		Restripe westbound approach to WBL and WBTR.	1.50%
25	Perris Boulevard/Harley Knox Boulevard	Add one EBL. Add right-turn overlap phasing for WBR and SBR.	Fair Share		Add one EBL. Add right-turn overlap phasing for WBR and SBR.	1.30%
27	Kitching Street/Cactus Avenue	~~No mitigations feasible due to right-of-way constraints. Intersection will continue to operate at a deficient LOS.~~ Restripe SBR to SBTR, widen the south leg of the intersection for a second receiving lane.	Fair Share			29.62%
28	Kitching Street/Iris Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Fair Share			4.83%
29	Lasselle Street/Alessandro Boulevard	Add one SBT, two EBT, and two WBT.	TUMF/Fair Share	Add two EBT and two WBT.	Add one SBT.	4.31%
30	Lasselle Street/Cactus Avenue	Add right-turn overlap phasing for WBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Fair Share		Add right-turn overlap phasing for WBR.	16.30%
32	Lasselle Street/Iris Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Fair Share			10.44%
33	Lasselle Street/Krameria Avenue	~~No mitigations feasible due to right-of-way constraints. Intersection will continue to operate at a deficient LOS.~~ Restripe	Fair Share			~~9.20~~9.66%

Table 4.14-33
Intersection Improvement Funding Mechanism and Fair Share

	Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1,3]	Improvements Covered Under Fair Share	Fair Share Percentage[2,3]
		eastbound approach from EBL, EBT, and EBR to two EBL, EBT, and EBTR, restripe westbound approach from WBL, WBT, WBR to WBL, WBT, and WBTR.				
38	Lasselle Street/Via De Anza - Rancho Verde High School	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection will continue to operate at a deficient LOS.	Fair Share			8.50%
39	Evans Road/Ramona Expressway	Add WBT. Add right-turn overlap phasing for WBR and SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	TUMF/Fair Share	Add WBT.	Add right-turn overlap phasing for WBR and SBR.	1.61%
43	Nason Street/Elder Avenue - SR-60 Westbound Ramps	Optimize cycle length and splits.				
45	Nason Street/Eucalyptus Avenue	Add EBR, NBR, and SBR. Add right-turn overlap phasing for NBR, and SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Fair Share		Add EBR, NBR, and SBR. Add right-turn overlap phasing for NBR, and SBR.	6.13%
47	Nason Street/Alessandro Boulevard	Add second NBL and WBT.	TUMF/Fair Share	Add WBT.	Add second NBL.	9.60%
49	Nason Street-Hillrose Lane/Iris Avenue	Add second SBL, second SBR. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Intersection is forecasted to	Fair Share		Add SBL, SBR.	26.81%

Table 4.14-33
Intersection Improvement Funding Mechanism and Fair Share

	Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1,3]	Improvements Covered Under Fair Share	Fair Share Percentage[2,3]
		operate at a deficient LOS after implementation of the recommended improvements.				
50	Pearl Lane - Oliver Street/Alessandro Boulevard	Add EBL. Add WBL. Install a Signal.	Fair Share		Add EBL. Add WBL. Install a Signal.	1.87%
56	Moreno Beach Drive/SR-60 Eastbound Ramps	Add second NBT, second SBT and restripe SBTL to SBL. Restripe EBTL to EBLTR.	TUMF	Add second NBT, second SBT and second EBR. Restripe SBTL to SBL. Restripe EBTL to EBLTR.		N/A
57	Moreno Beach Drive/Eucalyptus Avenue	~~No mitigations feasible due to right-of-way constraints. Intersection will continue to operate at a deficient LOS.~~ Add SBL and SBT.	Fair Share		.	5.40%
58	Moreno Beach Drive/Cottonwood Avenue	Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.	Fair Share		Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.	9.37%
59	Moreno Beach Drive/Alessandro Boulevard	Add second EBL, WBL, EBT, WBT, NBT, SBT, and NBR	TUMF/Fair Share	Add EBT and WBT.	Add second WBL, NBT, SBT, and NBR	8.03%
Recommended Improvements for Intersections - Project Responsibility						
62	Driveway 1/Iris Avenue	No mitigation required under Phase I and II. Under Phase III, no physical improvements are available. ~~No mitigations feasible due to right-of-way constraints.~~ Intersection will continue to operate at a deficient LOS.	Project Responsibility			100.00%
63	Driveway 2/Iris Avenue	Under Phase I project completion conditions, extend the existing eastbound left-turn storage by 30 feet. Under Phase II project completion	Project Responsibility			100.00%

Table 4.14-33
Intersection Improvement Funding Mechanism and Fair Share

	Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1,3]	Improvements Covered Under Fair Share	Fair Share Percentage[2,3]
		conditions, remove existing raised median on the eastbound approach, restripe eastbound approach to accommodate a second eastbound left-turn lane, and extend the dual left-turn pocket up to ~~375~~ 400 feet. Additionally, the existing southbound left-turn lane storage needs to be extended to 200 feet (back to the existing roundabout) under Phase II project completion conditions.				

ATTACHMENT D

Table 4.14-34

Table 4.14-34
Roadway Segment Improvement Funding Mechanism and Fair Share

	Roadway Segment	Mitigations[1]	Funding Mechanism	Improvements Covered by TUMF	Improvements Covered Under Fair Share	Fair Share Percentage
Segments on Perris Boulevard						
1	between Iris Avenue and Krameria Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			2.06%
2	between Krameria Avenue and San Michele Road	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			2.03%
3	between San Michele Road and Nandina Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			1.99%
4	between Nandina Avenue and Harley Knox Boulevard	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			2.06%
Segments on Lasselle Street						
6	between Iris Avenue and Krameria Avenue	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			12.25%
7	between Krameria Avenue and Via Xavier Lane	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			11.88%
8	between Via Xavier Lane and Lasselle Sports Park - Rojo Tierra	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			10.55%
9	between Lasselle Sports Park - Rojo Tierra and Cremello Way - Avenida De Plata	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			9.61%
10	between Cremello Way - Avenida De Plata and Avenida	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			8.63%

Table 4.14-34
Roadway Segment Improvement Funding Mechanism and Fair Share

	Roadway Segment	Mitigations[1]	Funding Mechanism	Improvements Covered by TUMF	Improvements Covered Under Fair Share	Fair Share Percentage
	Classica - Kentucky Derby Drive					
11	between Avenida Classica - Kentucky Derby Drive and Via De Anza - Rancho Verde High School	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			7.64%
Segment on Lasselle Street - Evans Road						
12	between Via De Anza - Rancho Verde High School and Ramona Expressway	Widen from 4 to 6 lanes.	Fair Share		Widen from 4 to 6 lanes.	3.99%
Segments on Nason Street						
14	between Eucalyptus Avenue and Cottonwood Avenue	~~Widen from 4 lanes to 6 lanes. No further mitigations feasible due to right-of-way constraints. The roadway segment will continue to operate at a deficient LOS.~~ No physical improvements are available. Roadway segment will continue to operate at a deficient LOS.	Fair Share		Widen from 4 lanes to 6 lanes.	6.71%
15	between Cottonwood Avenue and Alessandro Boulevard	Widen from 4 lanes to 6 lanes.	Fair Share		Widen from 4 lanes to 6 lanes.	8.97%
Segments on Moreno Beach Drive						
21	between SR-60 Eastbound Ramps and Eucalyptus Avenue	Widen from 4 lanes to 6 lanes.	Fair Share		Widen from 4 lanes to 6 lanes.	7.40%
23	between Cottonwood Avenue and Alessandro Boulevard	Widen from 2 lanes to 4 lanes.	Fair Share		Widen from 2 lanes to 4 lanes.	17.28%
24	between Alessandro Boulevard and Cactus Avenue	Widen from 2 lanes to 6 lanes.	Fair Share		Widen from 2 lanes to 6 lanes.	15.18%
Segments on Alessandro Boulevard						
27	between I-215 Northbound Ramps and Day Street	Widen from 4 lanes to 6 lanes. No further mitigations feasible due to right-of-way constraints. The roadway segment will continue to operate at a deficient LOS.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		1.13%

Table 4.14-34
Roadway Segment Improvement Funding Mechanism and Fair Share

	Roadway Segment	Mitigations[1]	Funding Mechanism	Improvements Covered by TUMF	Improvements Covered Under Fair Share	Fair Share Percentage
		No further physical improvements are available. Roadway segment will continue to operate at a deficient LOS.				
28	between Day Street and Elsworth Street	Widen from 4 lanes to 6 lanes. No further mitigations feasible due to right-of-way constraints. The roadway segment will continue to operate at a deficient LOS. No further physical improvements are available. Roadway segment will continue to operate at a deficient LOS.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		1.70%
30	between Frederick Street and Graham Street	Widen from 5 lanes to 6 lanes. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. The roadway segment will continue to operate at a deficient LOS.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		2.59%
31	between Graham Street and Heacock Street	Widen from 5 lanes to 6 lanes. No further physical improvements are available~~mitigations feasible due to right-of-way constraints~~. The roadway segment will continue to operate at a deficient LOS.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		2.62%
32	between Heacock Street and Indian Street	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			2.84%
33	between Indian Street and Perris Boulevard	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			3.52%
34	between Perris Boulevard and Kitching Street	Widen from 5 lanes to 6 lanes.	TUMF	Widen from 5 lanes to 6 lanes.		N/A
35	between Kitching Street and Lasselle Street	Widen from 2 lanes to 4~~6~~ lanes.	TUMF	Widen from 2 lanes to 4~~6~~ lanes.		N/A

Table 4.14-34
Roadway Segment Improvement Funding Mechanism and Fair Share

	Roadway Segment	Mitigations[1]	Funding Mechanism	Improvements Covered by TUMF	Improvements Covered Under Fair Share	Fair Share Percentage
36	between Lasselle Street and Nason Street	Widen from 2 lanes undivided to 6 lanes divided.	TUMF	Widen from 2 lanes undivided to 6 lanes divided.		N/A
37	between Nason Street and Moreno Beach Drive	Widen from 2 lanes undivided to 4 lanes divided.	TUMF	Widen from 2 lanes undivided to 4 lanes divided.		N/A
Segments on Cactus Avenue						
38	between I-215 Northbound Ramps – Old Frontage Road and Elsworth Street	Widen from 4 lanes to 6 lanes.	TUMF	Widen from 4 lanes to 6 lanes.		N/A
39	between Elsworth Street and Frederick Street	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			18.15%
40	between Frederick Street and Graham Street - Riverside Drive	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			21.42%
Segments on Iris Avenue						
50	between Perris Boulevard and Kitching Street	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			10.46%
52	between Lasselle Street and Camino Flores	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			12.57%
53	between Camino Flores and Coachlight Court - Avenida De Circo	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			13.01%
54	between Coachlight Court - Avenida De Circo and Grande Vista Drive	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			12.06%

Table 4.14-34
Roadway Segment Improvement Funding Mechanism and Fair Share

	Roadway Segment	Mitigations[1]	Funding Mechanism	Improvements Covered by TUMF	Improvements Covered Under Fair Share	Fair Share Percentage
55	between Grande Vista Drive and Nason Street – Hillrose Lane	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			12.06%
56	between Nason Street – Hillrose Lane and Driveway 1	No physical improvements are available~~mitigations feasible due to right-of-way constraints~~. Roadway segment will continue to operate at a deficient LOS.	Fair Share			34.99%

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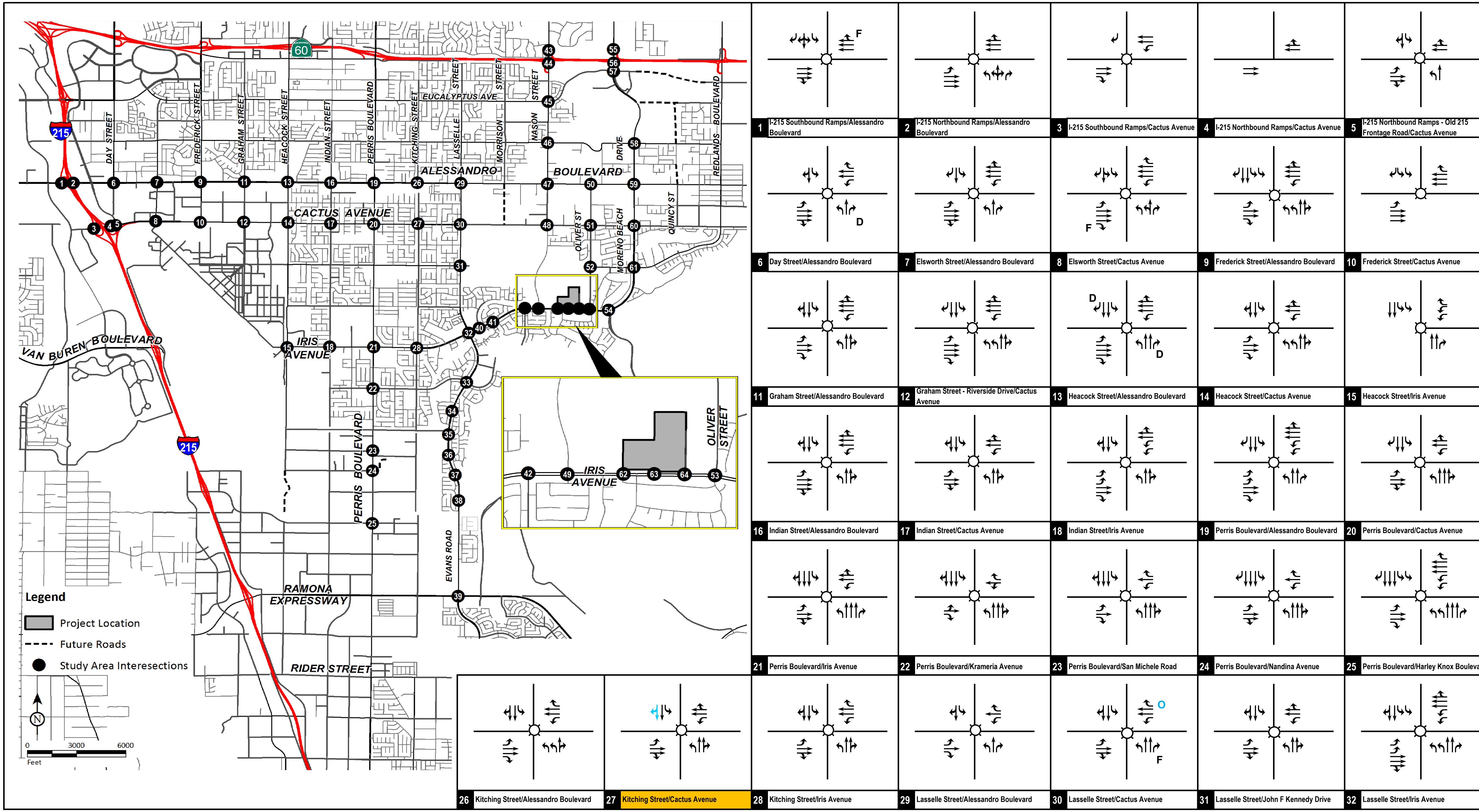
ATTACHMENT E1

Traffic Impact Analysis (TIA) Errata Pages



LSA

Legend

Signal

Stop Sign

D De-Facto Right

O Overlap

F Free-Right

Recommended Improvements

Revised Recommended Improvements

FIGURE 9-1A

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Existing with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

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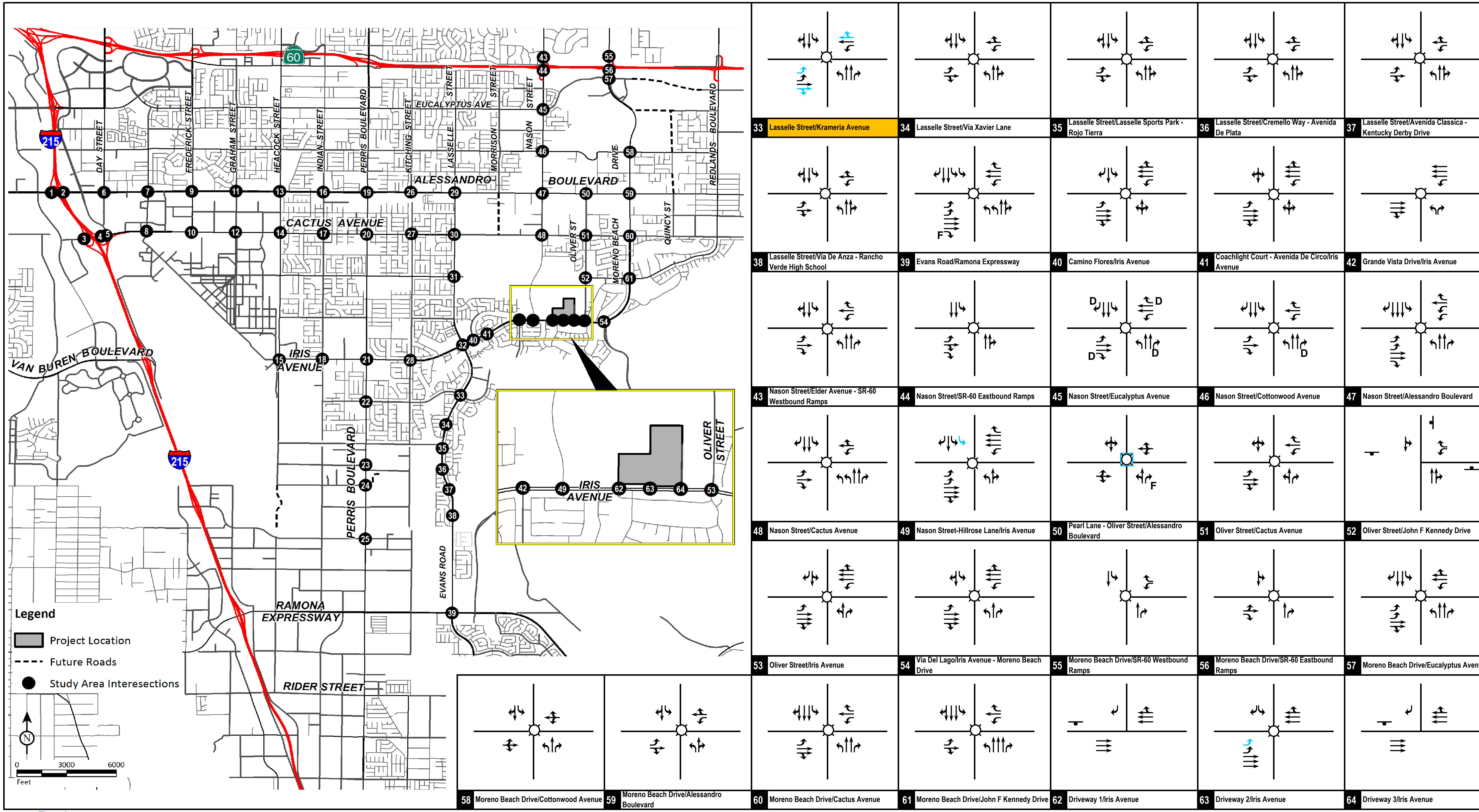

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Recommended Improvements

Revised Recommended Improvements

FIGURE 9-1B

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Existing with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

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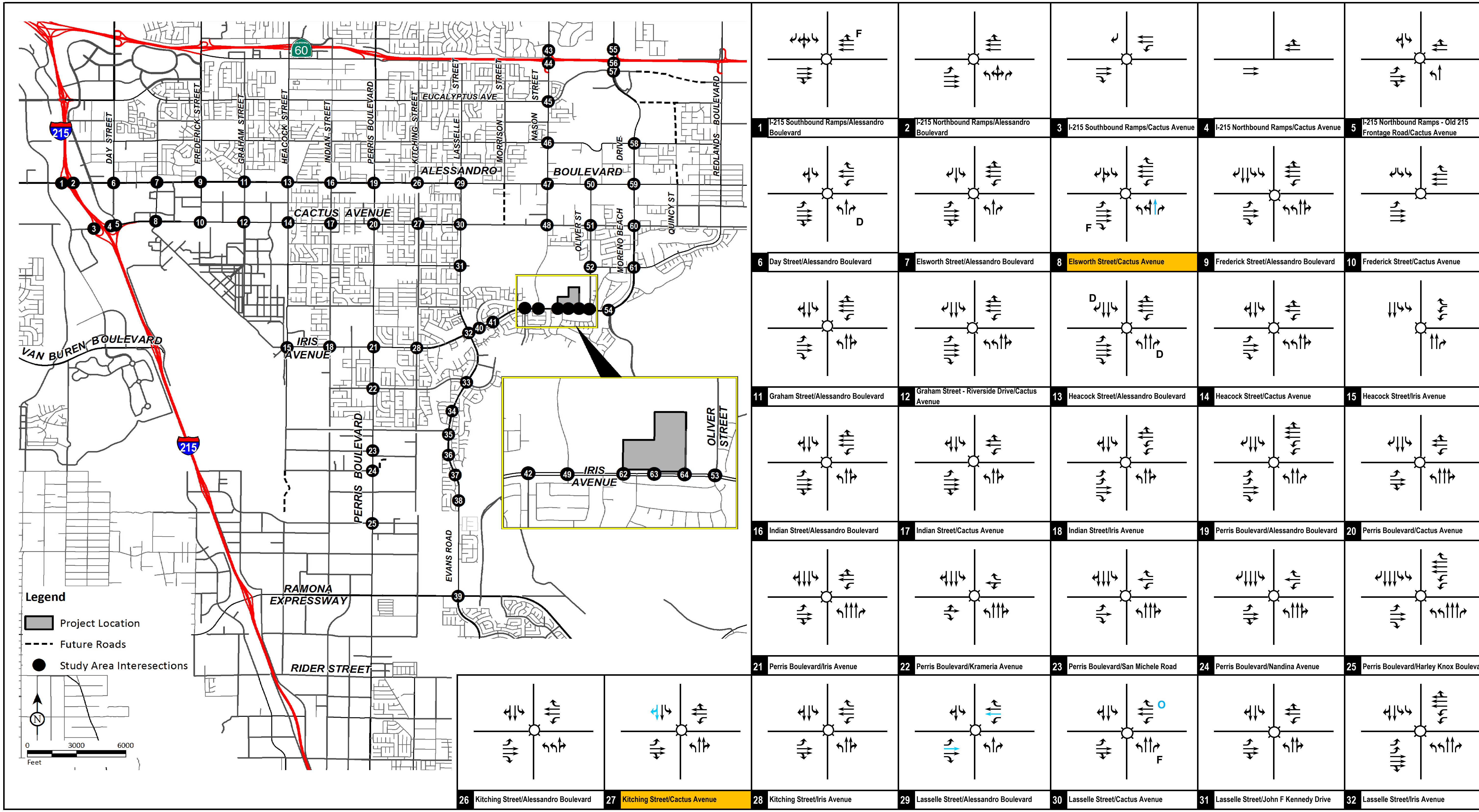

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Recommended Improvements

Revised Recommended Improvements

FIGURE 9-2A

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Phase I Project Completion Year (2023) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

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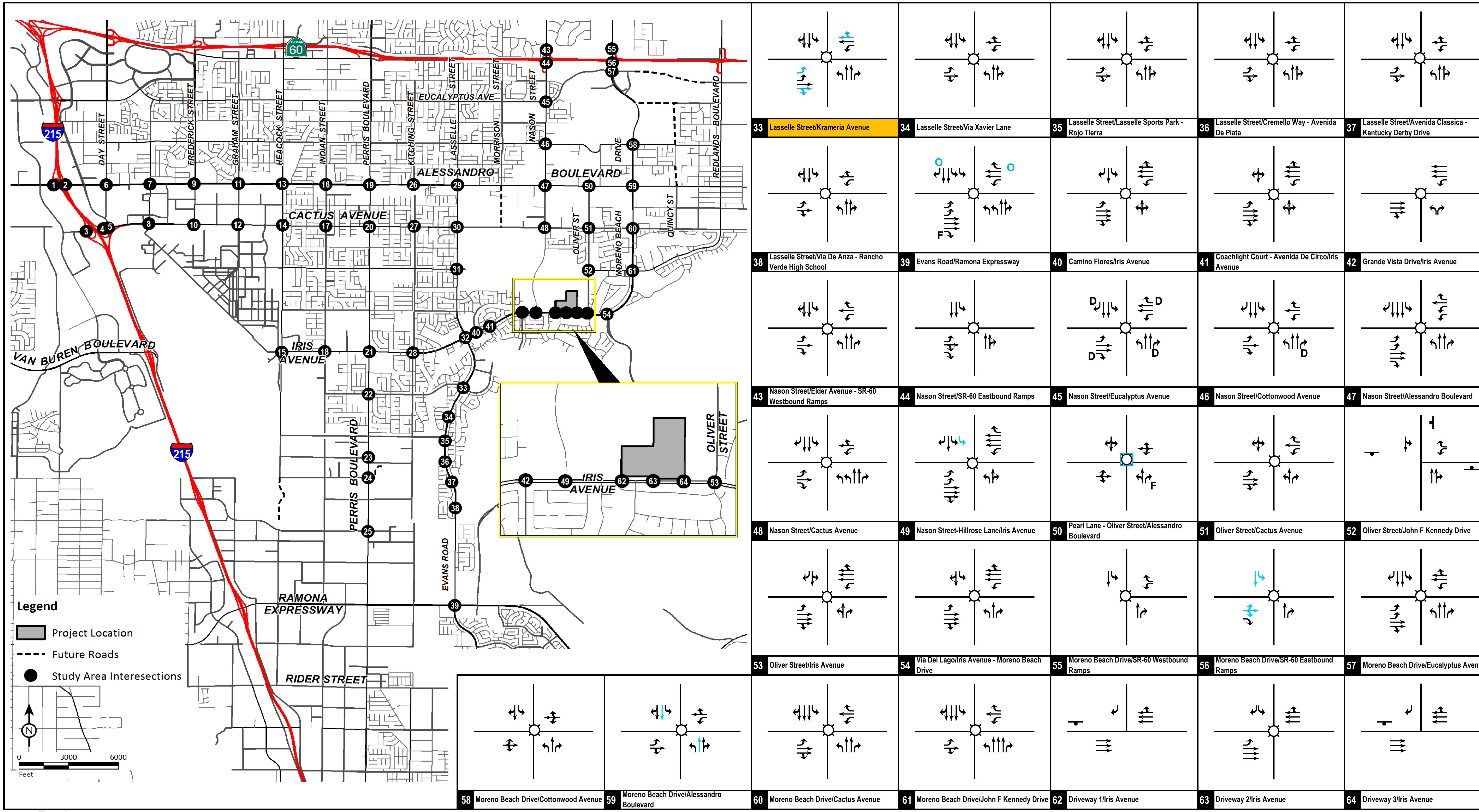

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Stop Sign

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Recommended Improvements

Revised Recommended Improvements

FIGURE 9-2B

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Phase I Project Completion Year (2023) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

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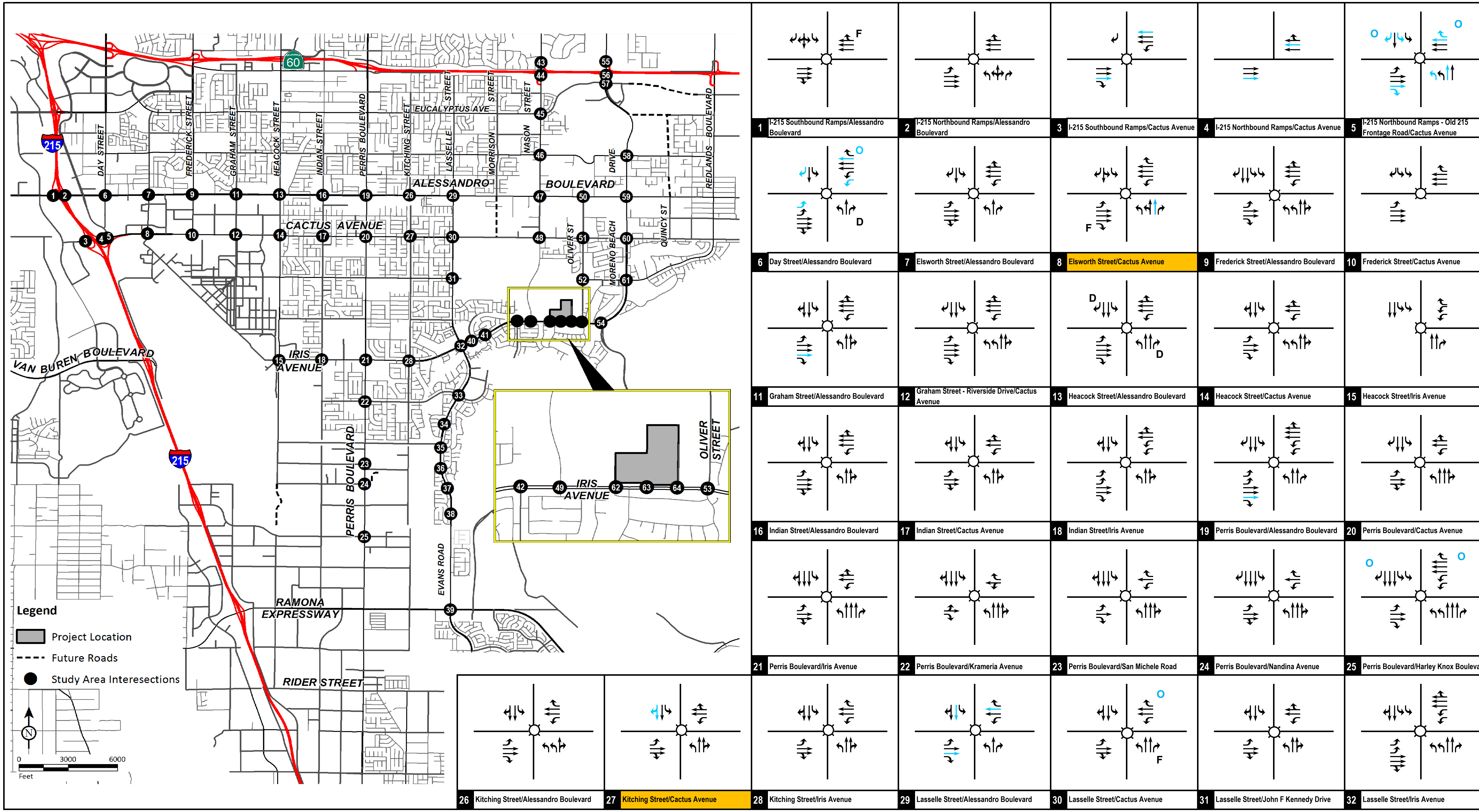

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Stop Sign

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Recommended Improvements
Revised Recommended Improvements

FIGURE 9-3A

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Phase II Project Completion Year (2032) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

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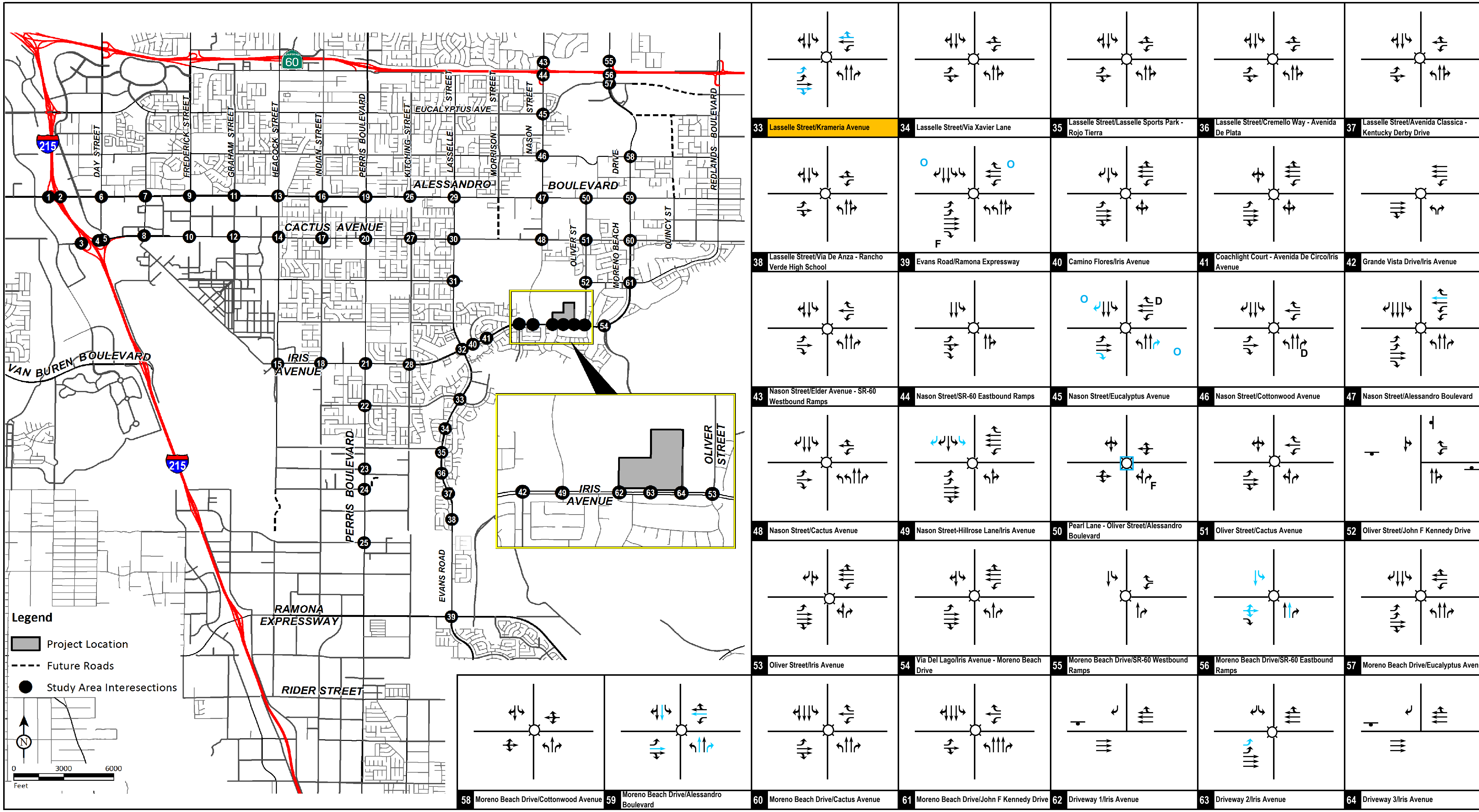

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Recommended Improvements

Revised Recommended Improvements

FIGURE 9-3B

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Phase II Project Completion Year (2032) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

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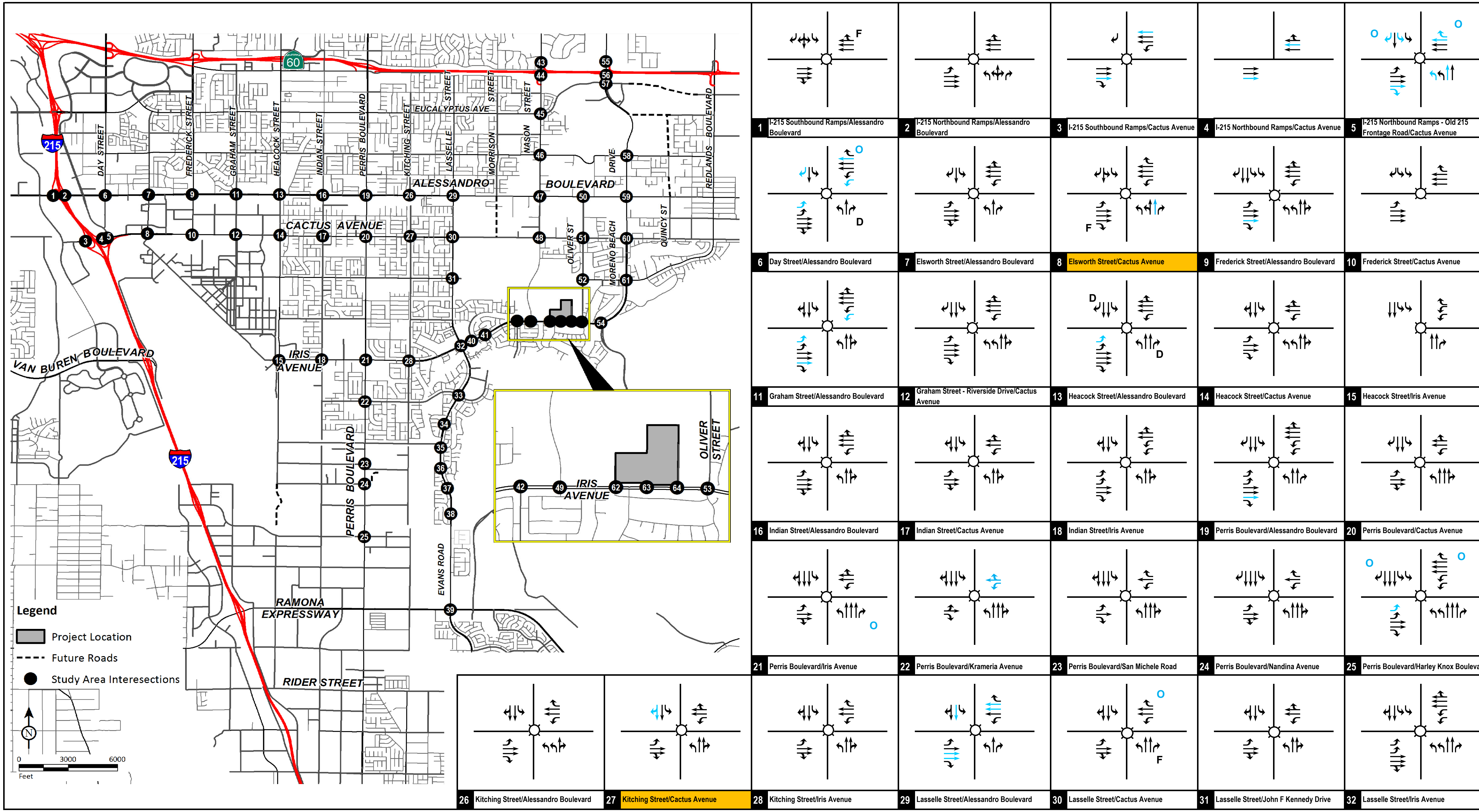

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Signal

Stop Sign

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O Overlap

F Free-Right

Recommended Improvements

Revised Recommended Improvements

FIGURE 9-4A

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Phase III Project Completion Year (2038) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

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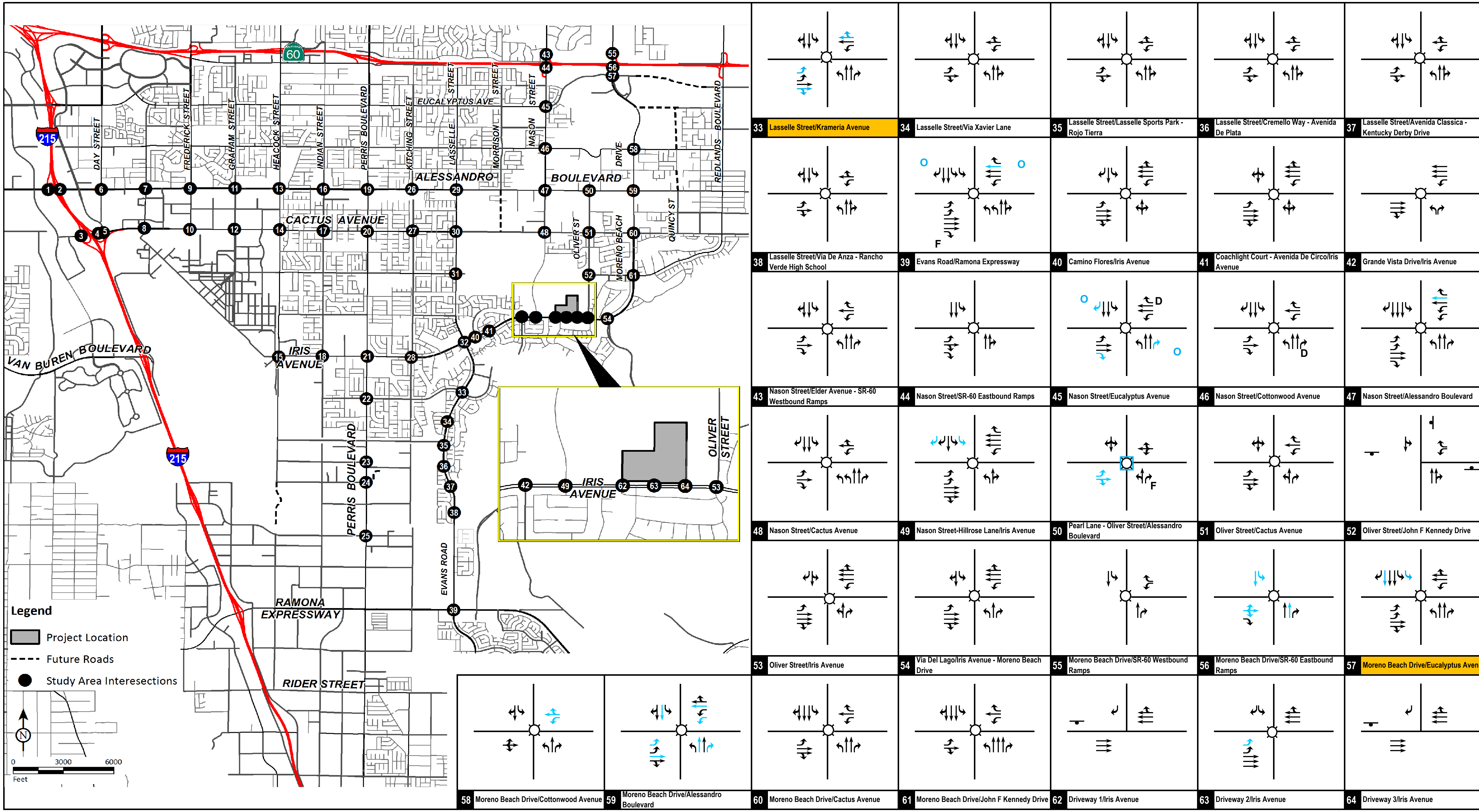

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- Signal
- Stop Sign
- D De-Facto Right
- O Overlap
- F Free-Right
- Recommended Improvements
- Revised Recommended Improvements

FIGURE 9-4B

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Phase III Project Completion Year (2038) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

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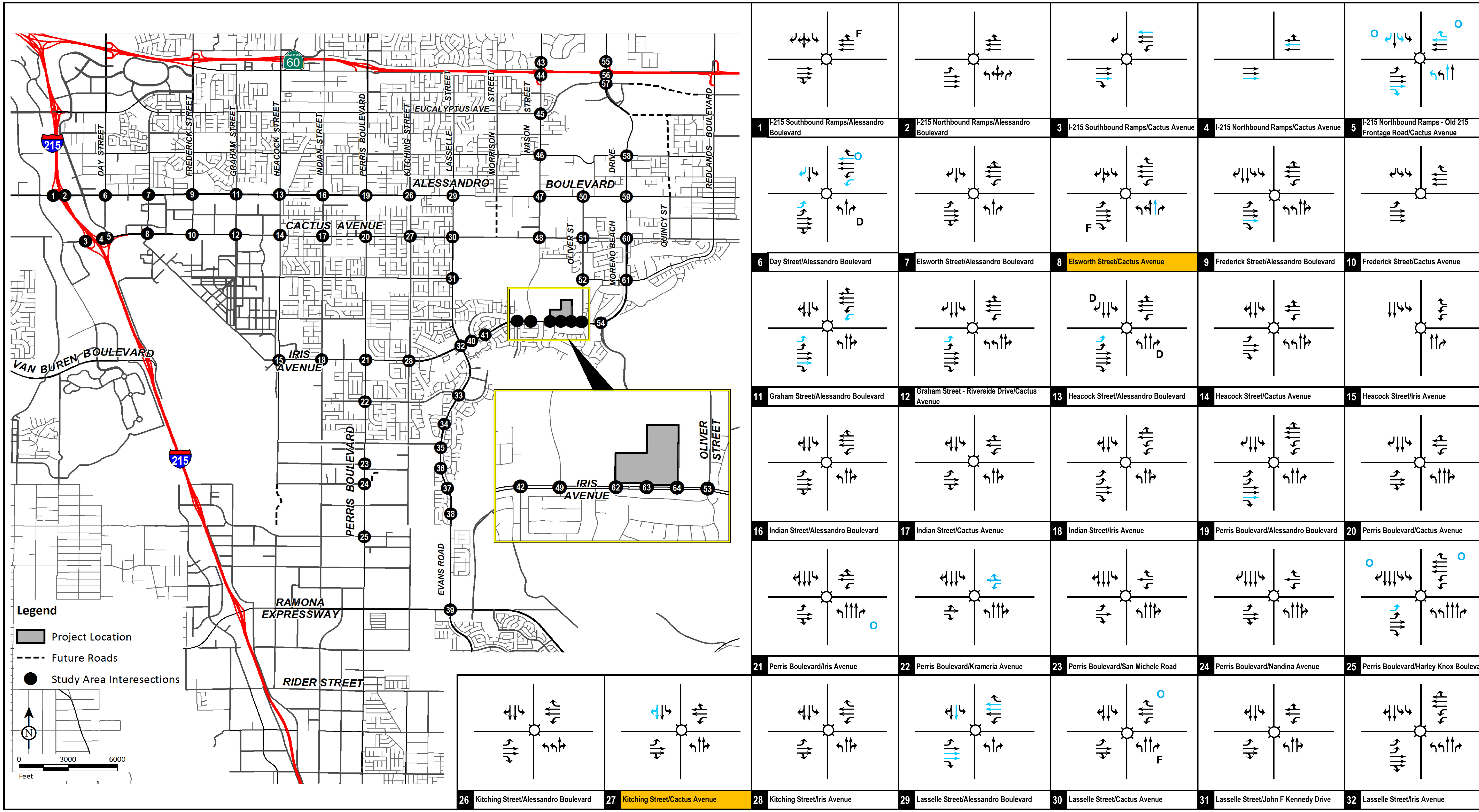

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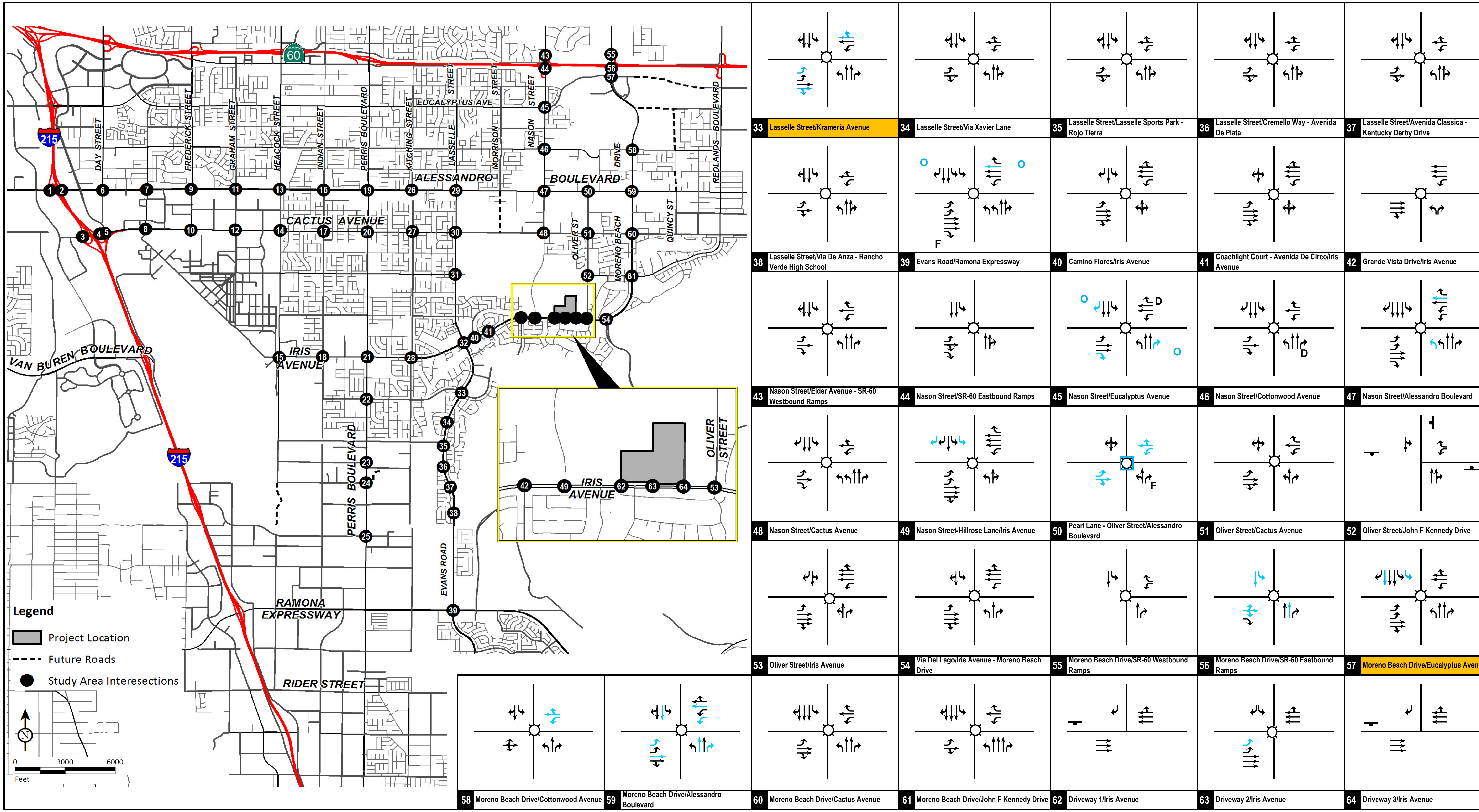
- Signal
- Stop Sign
- D De-Facto Right
- O Overlap
- F Free-Right
- Recommended Improvements
- Revised Recommended Improvements

FIGURE 9-5A

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

General Plan Build-out (2040) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)



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- Stop Sign
- D De-Facto Right
- O Overlap
- F Free-Right
- Recommended Improvements
- Revised Recommended Improvements

FIGURE 9-5B

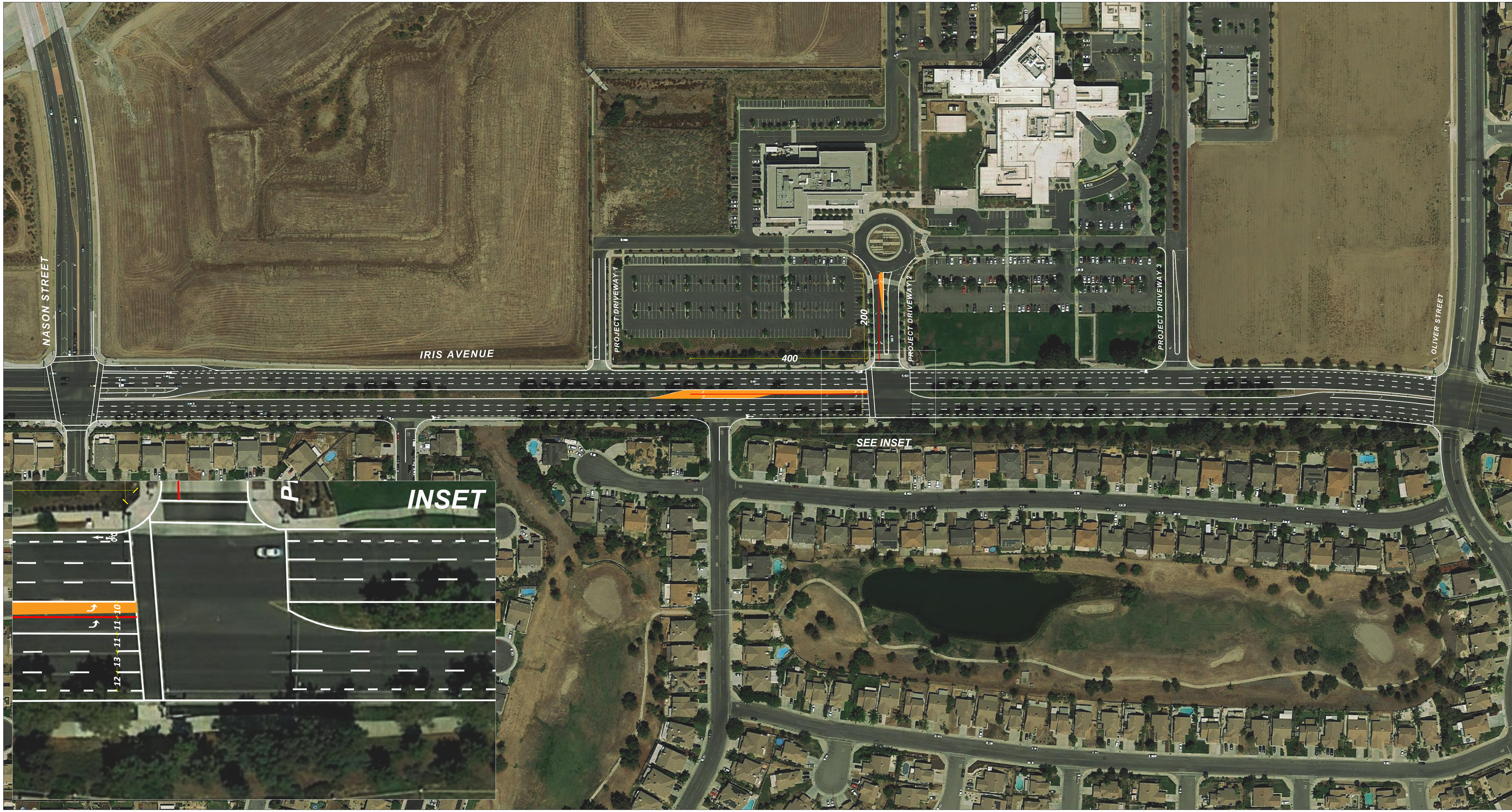
Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

General Plan Build-out (2040) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

R:\KSP1702_Kaiser Moreno Valley\Traffic\February 2020\g60_Geo_MIT_2040_B.xls 1/29/2020

FIGURE 11-1



LEGEND

- Removal of Existing Median
- Proposed Striping

N

0 100 200
FEET

SOURCE: Google Earth, 2018.

R:\KSP1702_Kaiser Moreno Valley\Traffic\CAD\fig11-1_Striping.dwg (01/29/2020)

Kaiser Permanente Moreno Valley Medical Center Master Plan Project

Traffic Impact Analysis

Conceptual Striping Plan with Proposed Improvements along Project Frontage

LSA

Table 9-A - Recommended Improvements for Intersections - Project Responsibility

Intersection	Phase I Completion Year (2023) with Project Mitigations	Phase II Completion Year (2032) with Project Mitigations	Phase III Completion Year (2038) with Project Mitigations	Year 2040 Mitigations
62 . Driveway 1/Iris Avenue	No mitigations required.	No mitigations required.	No mitigations feasible because Iris Avenue is built out to it's General Plan designation of 6 lanes. Intersection will continue to operate at a deficient LOS.	No mitigations feasible because Iris Avenue is built out to it's General Plan designation of 6 lanes. Intersection will continue to operate at a deficient LOS.
63 . Driveway 2/Iris Avenue	Extend the existing eastbound left-turn lane storage pocket from 195 feet to 225 feet.	Remove existing raised median on the eastbound approach. Restripe eastbound approach to accommodate a second eastbound left-turn lane. Extend the dual left-turn pocket from 225 feet to 375 feet. Extend the southbound left-turn pocket up to 200 feet.	No additional improvements required.	No additional improvements required.

Notes:

The project will be fully responsible for implementation of the above listed improvements as each phase is completed.

LSA

Table 9-B - Recommended Improvements for Intersections - Fair Share or TUMF Contribution

Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 with Project Mitigations[2, 4]
3 . I-215 Southbound Ramps/Cactus Avenue			Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.
4 . I-215 Northbound Ramps/Cactus Avenue			Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.	Interchange Redesign, widen bridge to 6 lanes.
5 . I-215 Northbound Ramps - Old 215 Frontage Road/Cactus Avenue			Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing.	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing.	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing.
6 . Day Street/Alessandro Boulevard			Convert N-S to protected phasing. Add SBR, WBT. Add 2nd EBL and 2nd WBL. Add overlap phasing to WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Convert N-S to protected phasing. Add SBR, WBT. Add 2nd EBL and 2nd WBL. Add overlap phasing to WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Convert N-S to protected phasing. Add SBR, WBT. Add 2nd EBL and 2nd WBL. Add overlap phasing to WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
7 . Elsworth Street/Alessandro Boulevard			No mitigations feasible.	No mitigations feasible.	No mitigations feasible.
8 . Elsworth Street/Cactus Avenue		Add NBT. No other mitigation is feasible in the other three legs. Intersection will continue to operate at a deficient LOS.	Add NBT. No other mitigation is feasible in the other three legs. Intersection will continue to operate at a deficient LOS.	Add NBT. No other mitigation is feasible in the other three legs. Intersection will continue to operate at a deficient LOS.	Add NBT. No other mitigation is feasible in the other three legs. Intersection will continue to operate at a deficient LOS.
9 . Frederick Street/Alessandro Boulevard				Add EBT.	Add EBT.
11 . Graham Street/Alessandro Boulevard			Add EBT.	Add EBT. Add a 2nd EBL. Add a 2nd WBL.	Add EBT. Add a 2nd EBL. Add a 2nd WBL.
12 . Graham Street - Riverside Drive/Cactus Avenue			No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.
13 . Heacock Street/Alessandro Boulevard				Add 2nd EBL. Add 2nd WBL.	Add 2nd EBL. Add 2nd WBL. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
17 . Indian Street/Cactus Avenue	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.
19 . Perris Boulevard/Alessandro Boulevard			Add EBT. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add EBT. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add EBT. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
20 . Perris Boulevard/Cactus Avenue			No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.
21 . Perris Boulevard/Iris Avenue				Add overlap phasing to NBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add overlap phasing to NBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
22 . Perris Boulevard/Krameria Avenue				Restripe westbound approach to WBL and WBTR.	Restripe westbound approach to WBL and WBTR.
25 . Perris Boulevard/Harley Knox Boulevard			Add right-turn overlap phasing for WBR and SBR.	Add one EBL. Add right-turn overlap phasing for WBR and SBR.	Add one EBL. Add right-turn overlap phasing for WBR and SBR.
27 . Kitching Street/Cactus Avenue	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe SBR to SBTR. Widen the south leg for a second receiving lane. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.

LSA

Table 9-B - Recommended Improvements for Intersections - Fair Share or TUMF Contribution

Intersection	Existing with Project Mitigations[1, 4]	Phase I Completion Year (2023) with Project Mitigations[2, 4]	Phase II Completion Year (2032) with Project Mitigations[2, 4]	Phase III Completion Year (2038) with Project Mitigations[2, 4]	Year 2040 with Project Mitigations[2, 4]
28 . Kitching Street/Iris Avenue		No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.
29 . Lasselle Street/Alessandro Boulevard		Add one EBT and WBT.	Add one SBT, one EBT, and one WBT.	Add one SBT, two EBT, and two WBT.	Add one SBT, two EBT, and two WBT.
30 . Lasselle Street/Cactus Avenue	Add right-turn overlap phasing for WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add right-turn overlap phasing for WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add right-turn overlap phasing for WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add right-turn overlap phasing for WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add right-turn overlap phasing for WBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
32 . Lasselle Street/Iris Avenue			No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.
33 . Lasselle Street/Krameria Avenue	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Restripe the eastbound approach from EBL, EBT, EBR to 2 EBL, EBT, and EBTR. Restripe the westbound approach from WBL, WBT, WBR to WBL, WBT, WBTR. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.
38 . Lasselle Street/Via De Anza - Rancho Verde High School	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.	No mitigations feasible. Intersection will continue to operate at a deficient LOS.
39 . Evans Road/Ramona Expressway		Add right-turn overlap phasing for WBR and SBR.	Add right-turn overlap phasing for WBR and SBR.	Add WBT. Add right-turn overlap phasing for WBR and SBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add WBT. Add right-turn overlap phasing for WBR and SBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
45 . Nason Street/Eucalyptus Avenue			Add EBR, NBR, and SBR. Add right-turn overlap phasing for NBR and SBR.	Add EBR, NBR, and SBR. Add right-turn overlap phasing for NBR and SBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add EBR, NBR, and SBR. Add right-turn overlap phasing for NBR and SBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
47 . Nason Street/Alessandro Boulevard				Add WBT.	Add second NBL and WBT.
49 . Nason Street-Hillrose Lane/Iris Avenue	Add a second SBL.	Add a second SBL.	Add a second SBL, second SBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add a second SBL, second SBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.	Add a second SBL, second SBR. No further mitigations feasible. Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements.
50 . Pearl Lane - Oliver Street/Alessandro Boulevard	Install a signal.	Install a signal.	Install a signal.	Add EBL. Install a Signal.	Add EBL. Add WBL. Install a Signal.
56 . Moreno Beach Drive/SR-60 Eastbound Ramps		Add SBT. Restripe SBTL to SBL. Restripe EBTL to EBLTR.[3]	Add second NBT. Add SBT. Restripe SBTL to SBL. Restripe EBTL to EBLTR.	Add second NBT. Add SBT. Restripe SBTL to SBL. Restripe EBTL to EBLTR.	Add second NBT. Add SBT. Restripe SBTL to SBL. Restripe EBTL to EBLTR.
57 . Moreno Beach Drive/Eucalyptus Avenue				Add SBL, SBT. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.	Add SBL, SBT. No further mitigations feasible. Intersection will continue to operate at a deficient LOS.
58 . Moreno Beach Drive/Cottonwood Avenue				Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.	Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.
59 . Moreno Beach Drive/Alessandro Boulevard		Add second SBT and NBT.	Add second EBT, second WBT, second NBT, second SBT, and NBR.	Add second EBL, second WBL, second EBT, second WBT, second NBT, second SBT, and NBR.	Add second EBL, second WBL, second EBT, second WBT, second NBT, second SBT, and NBR.

Notes:

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

L = Left, T = Through, R = Right

[1] Recommended mitigation for Existing with Project is for informational purposes only. As such, the project shall only implement the recommended mitigations for Phase I and beyond.

[2] Recommended improvements covered through the Transportation Uniform Mitigation Fee (TUMF) program are not considered adequate mitigation measures. This is because there is no guaranteed timeline for implementation of these improvements through the TUMF program. Therefore, impacts at intersections where mitigations are included through TUMF should be considered signficiant and unavoidable.

[3] Improvements recommended for this interchange are included in the TUMF program. There is no guaranteed timeline or adequate funding available for implementation of the proposed improvements. Therefore, impacts at this intersection should be considered significant and unavoidable.

[4] Further explanations of recommended mitigations are located in Table 9-M.

LSA

Table 9-C - Existing with Project with Improvements Intersection Levels of Service

Intersection	Jurisdiction	LOS Standard	With Project Control	With Project A.M. Peak Hour Delay (sec.)	With Project A.M. Peak Hour LOS		With Project P.M. Peak Hour Delay (sec.)	With Project P.M. Peak Hour LOS	With Project With Improvements Control	With Project With Improvements A.M. Peak Hour Delay (sec.)	With Project With Improvements A.M. Peak Hour LOS		With Project With Improvements P.M. Peak Hour Delay (sec.)	With Project With Improvements P.M. Peak Hour LOS
27 . Kitching Street/Cactus Avenue	Moreno Valley	C	Signal	41.5	D	*	28.5	C	Signal	49.7	D	*	28.5	C
33 . Lasselle Street/Krameria Avenue	Moreno Valley	C	Signal	57.9	E	*	20.6	C	Signal	41.1	D	*	20.2	C

Notes:

OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; LOS = Level of Service

Delay = Average control delay in seconds (For OWSC/TWSC intersections, reported delay is for worst-case movement).

* Exceeds LOS Standard

LSA

Table 9-D - Phase I Project Completion Year (2023) with Project with Improvements Intersection Levels of Service

Intersection	Jurisdiction	LOS Standard	With Project							With Project With Improvements						
			Control	A.M. Peak Hour			P.M. Peak Hour			Control	A.M. Peak Hour			P.M. Peak Hour		
				Delay (sec.)	LOS		Delay (sec.)	LOS			Delay (sec.)	LOS		Delay (sec.)	LOS	
8 . Elsworth Street/Cactus Avenue	Moreno Valley	D	Signal	40.8	D		69.7	**E**	*	Signal	26.8	C		58.3	**E**	*
27 . Kitching Street/Cactus Avenue	Moreno Valley	C	Signal	42.5	**D**	*	27.5	C		Signal	40.2	D	*	27.3	C	
33 . Lasselle Street/Krameria Avenue	Moreno Valley	C	Signal	66.2	**E**	*	27.0	C		Signal	43.0	**D**	*	20.9	C	

Notes:

OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; LOS = Level of Service

Delay = Average control delay in seconds (For OWSC/TWSC intersections, reported delay is for worst-case movement).

* Exceeds LOS Standard

Table 9-E - Phase II Project Completion Year (2032) with Project with Improvements Intersection Levels of Service

Intersection	Jurisdiction	LOS Standard	With Project							With Project With Improvements						
				A.M. Peak Hour			P.M. Peak Hour				A.M. Peak Hour			P.M. Peak Hour		
			Control	Delay (sec.)	LOS		Delay (sec.)	LOS		Control	Delay (sec.)	LOS		Delay (sec.)	LOS	
6 . Day Street/Alessandro Boulevard	Moreno Valley	D	Signal	>100	**F**	*	>100	**F**	*	Signal	53.0	D		>100	**F**	*
8 . Elsworth Street/Cactus Avenue	Moreno Valley	D	Signal	40.5	D		74.6	**E**	*	Signal	40.1	D		60.8	**E**	*
27 . Kitching Street/Cactus Avenue	Moreno Valley	C	Signal	45.6	**D**	*	36.9	**D**	*	Signal	37.7	**D**	*	36.9	**D**	*
33 . Lasselle Street/Krameria Avenue	Moreno Valley	C	Signal	70.1	**E**	*	27.5	C		Signal	44.7	**D**	*	21.4	C	
45 . Nason Street/Eucalyptus Avenue	Moreno Valley	D	Signal	57.9	**E**	*	35.1	D		Signal	54.9	D		28.9	C	

Notes:

OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; LOS = Level of Service

Delay = Average control delay in seconds (For OWSC/TWSC intersections, reported delay is for worst-case movement).

* Exceeds LOS Standard

Table 9-F - Phase III Project Completion Year (2038) with Project with Improvements Intersection Levels of Service

			With Project							With Project With Improvements						
				A.M. Peak Hour			P.M. Peak Hour				A.M. Peak Hour			P.M. Peak Hour		
Intersection	Jurisdiction	LOS Standard	Control	Delay (sec.)	LOS		Delay (sec.)	LOS		Control	Delay (sec.)	LOS		Delay (sec.)	LOS	
6 . Day Street/Alessandro Boulevard	Moreno Valley	D	Signal	>100	**F**	*	>100	**F**	*	Signal	>100	**F**	*	>100	**F**	*
8 . Elsworth Street/Cactus Avenue	Moreno Valley	D	Signal	42.1	D		70.6	**E**	*	Signal	39.2	D		65.1	**E**	*
27 . Kitching Street/Cactus Avenue	Moreno Valley	C	Signal	48.1	**D**	*	37.8	**D**	*	Signal	37.9	**D**	*	36.9	**D**	*
33 . Lasselle Street/Krameria Avenue	Moreno Valley	C	Signal	78.0	**E**	*	33.7	C		Signal	47.4	**D**	*	22.7	C	
45 . Nason Street/Eucalyptus Avenue	Moreno Valley	D	Signal	77.5	**E**	*	59.6	**E**	*	Signal	73.4	**E**	*	45.6	D	
57 . Moreno Beach Drive/Eucalyptus Avenue	Moreno Valley	D	Signal	41.8	D		76.6	**E**	*	Signal	40.2	D		69.5	**E**	*

Notes:

OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; LOS = Level of Service

Delay = Average control delay in seconds (For OWSC/TWSC intersections, reported delay is for worst-case movement).

* Exceeds LOS Standard

LSA

Table 9-G - General Plan Build-out (2040) with Project with Improvements Intersection Levels of Service

			With Project							With Project With Improvements						
				A.M. Peak Hour			P.M. Peak Hour				A.M. Peak Hour			P.M. Peak Hour		
Intersection	Jurisdiction	LOS Standard	Control	Delay (sec.)	LOS		Delay (sec.)	LOS		Control	Delay (sec.)	LOS		Delay (sec.)	LOS	
6 . Day Street/Alessandro Boulevard	Moreno Valley	D	Signal	>100	**F**	*	>100	**F**	*	Signal	>100	**F**	*	>100	**F**	*
8 . Elsworth Street/Cactus Avenue	Moreno Valley	D	Signal	46.1	D		80.8	**F**	*	Signal	42.4	D		73.7	**E**	*
27 . Kitching Street/Cactus Avenue	Moreno Valley	C	Signal	49.3	**D**	*	38.1	**D**	*	Signal	38.2	**D**	*	37.1	**D**	*
33 . Lasselle Street/Krameria Avenue	Moreno Valley	C	Signal	81.1	**F**	*	36.1	**D**	*	Signal	48.8	**D**	*	23.2	C	
45 . Nason Street/Eucalyptus Avenue	Moreno Valley	D	Signal	85.7	**F**	*	73.8	**E**	*	Signal	81.0	**F**	*	54.9	D	
57 . Moreno Beach Drive/Eucalyptus Avenue	Moreno Valley	D	Signal	45.4	D		86.2	**F**	*	Signal	42.7	D		78.0	**E**	*

Notes:

OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; LOS = Level of Service

Delay = Average control delay in seconds (For OWSC/TWSC intersections, reported delay is for worst-case movement).

* Exceeds LOS Standard

Table 9-J - Phase II Project Completion Year (2032) with Project with Improvements Roadway Segment Levels of Service

Roadway Segment	With Project					With Project With Improvements[3]				
	Classification[1]	Roadway Capacity[2]	Daily Volume	LOS		Classification	Roadway Capacity[2]	Daily Volume	LOS	
Segments on Alessandro Boulevard										
27 . between I-215 Northbound Ramps and Day Street	Five Lane Divided Arterial	47,000	51,600	F	*	Six Lane Divided Arterial	56,300	51,600	E	*
28 . between Day Street and Elsworth Street	Five Lane Divided Arterial	47,000	43,900	E	*	Six Lane Divided Arterial	56,300	43,900	C	
35 . between Kitching Street and Lasselle Street	Two Lane Divided Arterial	18,800	34,100	F	*	Six Lane Divided Arterial	56,300	34,100	B	

Notes:

LOS = Level of Service

* Exceeds LOS Standard

[1] Classifications for all segments except for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway have been obtained from the City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide,* dated August 2007. Classification for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway has been obtained from the *City of Perris General Plan.*

[2] Roadway capacities for all segments except for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway have been obtained from the City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide,* dated August 2007. The capacity for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway has been obtained from the *City of Perris General Plan.*

[3] Improvements have been recommended based on the City's General Plan classification or the Transportation Uniform Mitigation Fee Program and based on the availability of right-of-way. For some segments, adequate right-of-way is not available or they have been built out to their General Plan classification. As such, these segments will continue to operate at a deficient LOS.

Table 9-K - Phase III Project Completion Year (2038) with Project with Improvements Roadway Segment Levels of Service

Roadway Segment	With Project Classification[1]	With Project Roadway Capacity[2]	With Project Daily Volume	With Project LOS		With Project With Improvements[3] Classification	With Project With Improvements[3] Roadway Capacity[2]	With Project With Improvements[3] Daily Volume	With Project With Improvements[3] LOS	
Segments on Alessandro Boulevard										
27 . between I-215 Northbound Ramps and Day Street	Five Lane Divided Arterial	47,000	61,000	F	*	Six Lane Divided Arterial	56,300	61,000	F	*
28 . between Day Street and Elsworth Street	Five Lane Divided Arterial	47,000	50,200	F	*	Six Lane Divided Arterial	56,300	50,200	D	
35 . between Kitching Street and Lasselle Street	Two Lane Divided Arterial	18,800	42,000	F	*	Six Lane Divided Arterial	56,300	42,000	C	

Notes:

LOS = Level of Service

* Exceeds LOS Standard

[1] Classifications for all segments except for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway have been obtained from the City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide,* dated August 2007. Classification for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway has been obtained from the *City of Perris General Plan.*

[2] Roadway capacities for all segments except for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway have been obtained from the City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide,* dated August 2007. The capacity for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway has been obtained from the *City of Perris General Plan.*

[3] Improvements have been recommended based on the City's General Plan classification or the Transportation Uniform Mitigation Fee Program and based on the availability of right-of-way. For some segments, adequate right-of-way is not available or they have been built out to their General Plan classification. As such, these segments will continue to operate at a deficient LOS.

Table 9-L - General Plan Build-out (2040) with Project with Improvements Roadway Segment Levels of Service

Roadway Segment	With Project					With Project With Improvements[3]				
	Classification[1]	Roadway Capacity[2]	Daily Volume	LOS		Classification	Roadway Capacity[2]	Daily Volume	LOS	
Segments on Alessandro Boulevard										
27 . between I-215 Northbound Ramps and Day Street	Five Lane Divided Arterial	47,000	64,100	F	*	Six Lane Divided Arterial	56,300	64,100	F	*
28 . between Day Street and Elsworth Street	Five Lane Divided Arterial	47,000	52,300	F	*	Six Lane Divided Arterial	56,300	52,300	E	*
35 . between Kitching Street and Lasselle Street	Two Lane Divided Arterial	18,800	44,500	F	*	Six Lane Divided Arterial	56,300	44,500	C	

Notes:

LOS = Level of Service

* Exceeds LOS Standard

[1] Classifications for all segments except for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway have been obtained from the City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide,* dated August 2007. Classification for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway has been obtained from the *City of Perris General Plan.*

[2] Roadway capacities for all segments except for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway have been obtained from the City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide,* dated August 2007. The capacity for the segment of Lasselle Street - Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway has been obtained from the *City of Perris General Plan.*

[3] Improvements have been recommended based on the City's General Plan classification or the Transportation Uniform Mitigation Fee Program and based on the availability of right-of-way. For some segments, adequate right-of-way is not available or they have been built out to their General Plan classification. As such, these segments will continue to operate at a deficient LOS.

Table 9-M - Intersection Improvement Funding Mechanism and Fair Share

Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage[2]	Significance After Mitigation (If Any)[4]	Roadway General Plan Designation[3]
3 . I-215 Southbound Ramps/Cactus Avenue	Interchange Redesign, widen bridge to 6 lanes.	TUMF	Interchange Redesign, widen bridge to 6 lanes.		N/A	Satisfactory LOS	Cactus Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
4 . I-215 Northbound Ramps/Cactus Avenue	Interchange Redesign, widen bridge to 6 lanes.	TUMF	Interchange Redesign, widen bridge to 6 lanes.		N/A	Satisfactory LOS	Cactus Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
5 . I-215 Northbound Ramps - Old 215 Frontage Road/Cactus Avenue	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing.	TUMF	Interchange Redesign, widen bridge to 6 lanes. Add 2nd NBL & NBT, 2nd SBL, dedicated SBR with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing.		N/A	Satisfactory LOS	Cactus Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes Old 215 Frontage Road: Minor Arterial (4 Lanes) South Approach: 1 Through Lane
6 . Day Street/Alessandro Boulevard	Convert N-S to protected phasing. Add SBR, WBT. Add 2nd EBL and 2nd WBL. Add overlap phasing to WBR.	TUMF/Fair Share	Add WBT.	Convert N-S to protected phasing. Add SBR. Add 2nd EBL and 2nd WBL. Add overlap phasing to WBR.	1.00%	Intersection will continue to operate at a deficient LOS after implementation of the recommended improvements. With implementation of the recommended improvements, Alessandro Boulevard will be built out as per the City's General Plan designation. WIth regards to Day Street, no further improvements are feasible due to adjacent development. Therefore, no further improvements are feasible at this intersection.	Day Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
7 . Elsworth Street/Alessandro Boulevard	None	N/A			1.42%	Intersection will continue to operate at a deficient LOS. Alessandro Boulevard and south leg of Elsworth Street are already built out to the General Plan designation. No further improvements are feasible at the north leg of this intersection due to adjacent improvements.	Elsworth Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
8 . Elsworth Street/Cactus Avenue	None	N/A			6.24%	Intersection will operate at a deficient LOS. The south leg of the intersection is under the jurisdiction of March Joint Powers Authority (March JPA). While there is right-of way available in the south leg, the deficiency at this intersection occurs due to traffic congestion along Alessandro Boulevard (east leg and west leg), which are already built-out as per the City's General Plan designation. Thus, widening of the south leg would not reduce the impact at this intersection. The north leg is also built out to the City's General Plan designation. Therefore, no further improvements are feasible at this intersection.	Elsworth Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 1 Through Lane Cactus Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
9 . Frederick Street/Alessandro Boulevard	Add EBT.	TUMF	Add EBT.		N/A	Satisfactory LOS	Frederick Street: Arterial (4 Lanes) for South Approach, Minor Arterial (4 Lanes) for North Approach North Approach: 2 Through Lanes South Approach: 2 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
11 . Graham Street/Alessandro Boulevard	Add EBT. Add a 2nd EBL. Add a 2nd WBL.	TUMF/Fair Share	Add EBT.	Add a 2nd EBL. Add a 2nd WBL.	1.65%	Satisfactory LOS	Graham Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
12 . Graham Street - Riverside Drive/Cactus Avenue	None	N/A			10.67%	Intersection will continue to operate at a deficient LOS. The intersection is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Graham Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Cactus Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
13 . Heacock Street/Alessandro Boulevard	Add 2nd EBL. Add 2nd WBL.	Fair Share		Add 2nd EBL. Add 2nd WBL.	2.57%	Intersection will continue to operate at a deficient LOS after implementation of the recommended improvements. With implementation of the recommended improvements, the intersection will be built out as per the City's General Plan designation. Therefore, no further improvements are feasible at this intersection.	Heacock Street: Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
17 . Indian Street/Cactus Avenue	None	Fair Share			26.73%	Intersection will continue to operate at a deficient LOS. The intersection is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Indian Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Cactus Avenue: Minor Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes

Table 9-M - Intersection Improvement Funding Mechanism and Fair Share

Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage[2]	Significance After Mitigation (If Any)[4]	Roadway General Plan Designation[3]
19 . Perris Boulevard/Alessandro Boulevard	Add EBT.	TUMF	Add EBT.		2.69%	Intersection will continue to operate at a deficient LOS. With addition of the recommended improvements, the intersection will be built out to the General Plan designation. Therefore, no further improvements at this intersection are feasible.	Perris Boulevard: Divided Arterial (6 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3Through Lanes
20 . Perris Boulevard/Cactus Avenue	None	N/A			6.98%	Intersection will continue to operate at a deficient LOS. The intersection is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Perris Boulevard: Divided Arterial (6 Lanes) North Approach: 3 Through Lanes South Approach: 3 Through Lanes Cactus Avenue: Minor Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
21 . Perris Boulevard/Iris Avenue	Add overlap phasing to NBR.	Fair Share		Add overlap phasing to NBR.	3.11%	Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements. The intersection is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Perris Boulevard: Divided Arterial (6 Lanes) North Approach: 3 Through Lanes South Approach: 3 Through Lanes Iris Avenue: Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
22 . Perris Boulevard/Krameria Avenue	Restripe westbound approach to WBL and WBTR.	Fair Share		Restripe westbound approach to WBL and WBTR.	1.50%	Satisfactory LOS	Perris Boulevard: Divided Arterial (6 Lanes) North Approach: 3 Through Lanes South Approach: 3 Through Lanes Krameria Avenue: Minor Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
25 . Perris Boulevard/Harley Knox Boulevard	Add one EBL. Add right-turn overlap phasing for WBR and SBR.	Fair Share		Add one EBL. Add right-turn overlap phasing for WBR and SBR.	1.30%	Satisfactory LOS	Perris Boulevard: Arterial (6 Lanes) North Approach: 3 Through Lanes South Approach: 3 Through Lanes Harley Knox Boulevard: Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
27 . Kitching Street/Cactus Avenue	Restripe SBR to SBTR. Widen the south leg of the intersection for a second receiving lane.	Fair Share			29.62%	Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements. The intersection will be built out to the General Plan designation with implementation of the proposed improvements. Therefore, no further improvements are feasible at this intersection.	Kitching Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lane Cactus Avenue: Minor Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
28 . Kitching Street/Iris Avenue	None	N/A			4.83%	Intersection will continue to operate at a deficient LOS. The intersection is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Kitching Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Iris Avenue: Arterial (4 Lanes) for East Approach, Divided Major Arterial (6 Lanes) for West Approach East Approach: 2 Through Lanes West Approach: 2 Through Lanes
29 . Lasselle Street/Alessandro Boulevard	Add one SBT, two EBT, and two WBT.	TUMF/Fair Share	Add two EBT and two WBT.	Add one SBT.	4.31%	Satisfactory LOS	Lasselle Street: Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
30 . Lasselle Street/Cactus Avenue	Add right-turn overlap phasing for WBR.	Fair Share		Add right-turn overlap phasing for WBR.	16.30%	Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements. The intersection is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Lasselle Street: Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Cactus Avenue: Minor Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
32 . Lasselle Street/Iris Avenue	None	N/A			10.44%	Intersection will continue to operate at a deficient LOS. The intersection is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Lasselle Street: Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Iris Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes

Table 9-M - Intersection Improvement Funding Mechanism and Fair Share

Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage[2]	Significance After Mitigation (If Any)[4]	Roadway General Plan Designation[3]
33 . Lasselle Street/Krameria Avenue	Restripe eastbound approach from EBL, EBT, and EBR to 2 EBL, EBT, and EBTR. Restripe westbound approach from WBL, WBT, WBR to WBL, WBT, and WBTR.	Fair Share		Restripe eastbound approach from EBL, EBT, and EBR to 2 EBL, EBT, and EBTR. Restripe westbound approach from WBL, WBT, WBR to WBL, WBT, and WBTR.	9.66%	The recommended improvements consists of the previous striping configuration prior to City's implementation of the current road diet striping plan along Krameria Avenue. The City may decide to revert back to the previous striping along Krameria Avenue. Intersection is forecasted to operate at a deficient LOS after implentation of the recommended improvements. The intersection will be built out to the General Plan designation with implementation of the proposed improvements. Therefore, no further improvements are feasible at this intersection.	Lasselle Street: Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Krameria Avenue: Minor Arterial (4 Lanes) East Approach: 2 Through Lane West Approach: 2 Through Lane
38 . Lasselle Street/Via De Anza - Rancho Verde High School	None	N/A			8.50%	No mitigations feasible due to right-of-way constraints. Intersection will continue to operate at a deficient LOS.	Lasselle Street: Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes
39 . Evans Road/Ramona Expressway	Add WBT. Add right-turn overlap phasing for WBR and SBR.	TUMF/Fair Share	Add WBT.	Add right-turn overlap phasing for WBR and SBR.	1.61%	Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements. With addition of the recommended improvements, this intersection will be built out to the City of Perris General Plan designation. Therefore, no further improvements are feasible at this intersection.	Evans Road: Arterial (6 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes Ramona Expressway: Expressway (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
43 . Nason Street/Elder Avenue - SR-60 Westbound Ramps	Optimize cycle length and splits.					Satisfactory LOS	Nason Street: Minor Arterial (4 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes
45 . Nason Street/Eucalyptus Avenue	Add EBR, NBR, and SBR. Add right-turn overlap phasing for NBR and SBR.	Fair Share		Add EBR, NBR, and SBR. Add right-turn overlap phasing for NBR and SBR.	6.13%	Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements. With addition of the recommended improvements, the intersection will be built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Nason Street: Divided Major Arterial (6 Lanes) North of Eucalyptus Avenue Arterial (4 Lanes) South of Aucalyptus Avenue North Approach: 2 Through Lanes South Approach: 2 Through Lanes Eucalyptus Avenue: Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
47 . Nason Street/Alessandro Boulevard	Add second NBL and WBT.	TUMF/Fair Share	Add WBT.	Add second NBL.	9.60%	Satisfactory LOS	Nason Street: Divided Major Arterial (6 Lanes) North Approach: 2 Through Lanes South Approach: 3 Through Lanes Alessandro Boulevard: Divided Major Arterial (6 Lanes) for East Approach, Divided Arterial (4 Lanes) for West Approach East Approach: 2 Through Lanes West Approach: 2 Through Lanes
49 . Nason Street-Hillrose Lane/Iris Avenue	Add second SBL, second SBR.	Fair Share		Add second SBL, second SBR.	26.81%	Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements. With addition of the recommended improvements, the intersection will be built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Nason Street: Arterial (6 Lanes) North Approach: 1 Through Lane South Approach: 1 Through Lane Iris Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
50 . Pearl Lane - Oliver Street/Alessandro Boulevard	Add EBL. Add WBL. Install a Signal.	Fair Share		Add EBL. Add WBL. Install a Signal.	1.87%	Satisfactory LOS	Oliver Street: Minor Arterial (4 Lanes) North Approach: 1 Through Lane South Approach: 1 Through Lane Alessandro Boulevard: Divided Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
56 . Moreno Beach Drive/SR-60 Eastbound Ramps	Add second NBT. Add SBT. Restripe SBTL to SBL. Restripe EBTL to EBLTR.	TUMF	Add second NBT, SBT. Restripe SBTL to SBL. Restripe EBTL to EBLTR.		N/A	Satisfactory LOS	Moreno Beach Drive: Divided Major Arterial (6 Lanes) North Approach: 2 Through Lanes South Approach: 2 Through Lanes
57 . Moreno Beach Drive/Eucalyptus Avenue	Add SBL, SBT.	Fair Share			5.40%	Intersection is forecasted to operate at a deficient LOS after implementation of the recommended improvements. With addition of the recommended improvements, the intersection will be built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Moreno Beach Drive: Divided Major Arterial (6 Lanes) North Approach: 3 Through Lanes South Approach: 3 Through Lanes Eucalyptus Avenue: Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes

Table 9-M - Intersection Improvement Funding Mechanism and Fair Share

Intersection	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage[2]	Significance After Mitigation (If Any)[4]	Roadway General Plan Designation[3]
58 . Moreno Beach Drive/Cottonwood Avenue	Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.	Fair Share		Add WBL, and restripe westbound approach as WBL and WBTR. Change the split phasing for the east-west approach to permitted phasing.	9.37%	Satisfactory LOS	Moreno Beach Drive: Divided Major Arterial (6 Lanes) North Approach: 3 Through Lanes South Approach: 3 Through Lanes Cottonwood Avenue: Minor Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
59 . Moreno Beach Drive/Alessandro Boulevard	Add second EBL, second WBL, second EBT, second WBT, second NBT, second SBT, and NBR.	TUMF/Fair Share	Add second EBT and second WBT.	Add second EBL, second WBL, second NBT, second SBT, and NBR.	8.03%	Satisfactory LOS	Moreno Beach Drive: Divided Major Arterial (6 Lanes) North Approach: 3 Through Lanes South Approach: 3 Through Lanes Alessandro Boulevard: Minor Arterial (4 Lanes) East Approach: 2 Through Lanes West Approach: 2 Through Lanes
62 . Driveway 1/Iris Avenue	None	Project Responsibility			100.00%	Intersection will continue to operate at a deficient LOS. Iris Avenue is already built out to the General Plan designation. Therefore, no further improvements are feasible at this intersection.	Iris Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes
63 . Driveway 2/Iris Avenue	Remove existing raised median on the eastbound approach, restripe eastbound approach to accommodate a second eastbound left-turn lane, and extend the dual left-turn pocket up to 400 feet. Extend the southbound left-turn pocket up to 200 feet.	Project Responsibility			100.00%	Satisfactory LOS	Iris Avenue: Divided Major Arterial (6 Lanes) East Approach: 3 Through Lanes West Approach: 3 Through Lanes

Notes:

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

L = Left, T = Through, R = Right

TUMF refers to the Transportation Uniform Mitigation Fee program.

[1] Recommended improvements covered through the Transportation Uniform Mitigation Fee (TUMF) program or payment of fair share are not considered adequate mitigation measures. This is because there is no guaranteed timeline for implementation of these improvements through the TUMF program or payment of fair share. Therefore, impacts at intersections where mitigations are included through TUMF should be considered significant and unavoidable.

[2] Project Fair Share Percentage is the highest fair share value of the AM and PM peak hour when both peak hours are impacted by the project, or only in the peak hour where the project has an impact.

[3] The number of lanes listed is the ultimate width (in number of lanes) of the listed roadway segment.

[4] For intersections where no mitigations are feasible or no additional mitigations are feasible to improve to a satisfactory LOS, the City will require separate mitigation strategies as described in Section 9.2.2.

Orange shaded cells indicate where changes to the table has been made.

Table 9-N - Roadway Segment Improvements Funding Mechanism and Fair Share

Roadway Segment	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage	Significance After Mitigation (If Any)[2]	Roadway General Plan Classification
Segments on Perris Boulevard							
1 . between Iris Avenue and Krameria Avenue	None	N/A			2.06%	Roadway segment will continue to operate at a deficient LOS. Perris Boulevard is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Divided Arterial (6 Lanes)
2 . between Krameria Avenue and San Michele Road	None	N/A			2.03%	Roadway segment will continue to operate at a deficient LOS. Perris Boulevard is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Divided Arterial (6 Lanes)
3 . between San Michele Road and Nandina Avenue	None	N/A			1.99%	Roadway segment will continue to operate at a deficient LOS. Perris Boulevard is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Divided Arterial (6 Lanes)
4 . between Nandina Avenue and Harley Knox Boulevard	None	N/A			2.06%	Roadway segment will continue to operate at a deficient LOS. Perris Boulevard is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Divided Arterial (6 Lanes)
Segments on Lasselle Street							
6 . between Iris Avenue and Krameria Avenue	None	N/A			12.25%	Roadway segment will continue to operate at a deficient LOS. Lasselle Street is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)
7 . between Krameria Avenue and Via Xavier Lane	None	N/A			11.88%	Roadway segment will continue to operate at a deficient LOS. Lasselle Street is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)

Table 9-N - Roadway Segment Improvements Funding Mechanism and Fair Share

Roadway Segment	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage	Significance After Mitigation (If Any)[2]	Roadway General Plan Classification
8 . between Via Xavier Lane and Lasselle Sports Park - Rojo Tierra	None	N/A			10.55%	Roadway segment will continue to operate at a deficient LOS. Lasselle Street is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)
9 . between Lasselle Sports Park - Rojo Tierra and Cremello Way - Avenida De Plata	None	N/A			9.61%	Roadway segment will continue to operate at a deficient LOS. Lasselle Street is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)
10 . between Cremello Way - Avenida De Plata and Avenida Classica - Kentucky Derby Drive	None	N/A			8.63%	Roadway segment will continue to operate at a deficient LOS. Lasselle Street is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)
11 . between Avenida Classica - Kentucky Derby Drive and Via De Anza - Rancho Verde High School	None	N/A			7.64%	Roadway segment will continue to operate at a deficient LOS. Lasselle Street is already built out to the General Plan classification. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)
Segment on Lasselle Street - Evans Road							
12 . between Via De Anza - Rancho Verde High School and Ramona Expressway	Widen from 4 to 6 lanes.	Fair Share		Widen from 4 to 6 lanes.	3.99%	Satisfactory LOS	Arterial (6 Lanes)
Segments on Nason Street							
14 . between Eucalyptus Avenue and Cottonwood Avenue	None	N/A			6.71%	Roadway segment will continue to operate at a deficient LOS. Nason Street is built out to the General Plan designation within the extent of this roadway segment. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)
15 . between Cottonwood Avenue and Alessandro Boulevard	Widen from 4 lanes to 6 lanes.	Fair Share		Widen from 4 lanes to 6 lanes.	8.97%	Satisfactory LOS	Divided Major Arterial (6 Lanes)
Segments on Moreno Beach Drive							
21 . between SR-60 Eastbound Ramps and Eucalyptus Avenue	Widen from 4 lanes to 6 lanes.	Fair Share		Widen from 4 lanes to 6 lanes.	7.40%	Satisfactory LOS	Divided Major Arterial (6 Lanes)
23 . between Cottonwood Avenue and Alessandro Boulevard	Widen from 2 lanes to 4 lanes.	Fair Share		Widen from 2 lanes to 4 lanes.	17.28%	Satisfactory LOS	Divided Major Arterial (6 Lanes)
24 . between Alessandro Boulevard and Cactus Avenue	Widen from 2 lanes to 6 lanes.	Fair Share		Widen from 2 lanes to 6 lanes.	15.18%	Satisfactory LOS	Divided Major Arterial (6 Lanes)

Table 9-N - Roadway Segment Improvements Funding Mechanism and Fair Share

Roadway Segment	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage	Significance After Mitigation (If Any)[2]	Roadway General Plan Classification
Segments on Alessandro Boulevard							
27 . between I-215 Northbound Ramps and Day Street	Widen from 5 to 6 lanes.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		1.13%	Roadway segment will continue to operate at a deficient LOS after implentation of recommended improvements. Alessandro Boulevard will be built out to its General Plan designation. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
28 . between Day Street and Elsworth Street	Widen from 5 to 6 lanes.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		1.70%	Roadway segment will continue to operate at a deficient LOS after implentation of recommended improvements. Alessandro Boulevard will be built out to its General Plan designation. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
30 . between Frederick Street and Graham Street	Widen from 5 lanes to 6 lanes.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		2.59%	Roadway segment will continue to operate at a deficient LOS. With the widening from from 5 lanes to 6 lanes, Alessandro Boulevard will be built out to the General Plan designation within the extent of this roadway segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
31 . between Graham Street and Heacock Street	Widen from 5 lanes to 6 lanes.	TUMF/Fair Share	Widen from 5 lanes to 6 lanes.		2.62%	Roadway segment will continue to operate at a deficient LOS. With the widening from from 5 lanes to 6 lanes, Alessandro Boulevard will be built out to the General Plan designation within the extent of this roadway segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
32 . between Heacock Street and Indian Street	None	N/A			2.84%	Roadway segment will continue to operate at a deficient LOS. Alessandro Boulevard is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)

Table 9-N - Roadway Segment Improvements Funding Mechanism and Fair Share

Roadway Segment	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage	Significance After Mitigation (If Any)[2]	Roadway General Plan Classification
33 . between Indian Street and Perris Boulevard	None	Fair Share			3.52%	Roadway segment will continue to operate at a deficient LOS. Alessandro Boulevard is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
34 . between Perris Boulevard and Kitching Street	Widen from 5 lanes to 6 lanes.	TUMF	Widen from 5 lanes to 6 lanes.		N/A	Satisfactory LOS	Divided Major Arterial (6 Lanes)
35 . between Kitching Street and Lasselle Street	Widen from 2 lanes to 6 lanes.	TUMF	Widen from 2 lanes to 6 lanes.		N/A	Satisfactory LOS	Divided Major Arterial (6 Lanes)
36 . between Lasselle Street and Nason Street	Widen from 2 lanes undivided to 6 lanes divided.	TUMF	Widen from 2 lanes undivided to 6 lanes divided.		N/A	Satisfactory LOS	Divided Major Arterial (6 Lanes)
37 . between Nason Street and Moreno Beach Drive	Widen from 2 lanes undivided to 4 lanes divided.	TUMF	Widen from 2 lanes undivided to 4 lanes divided.		N/A	Satisfactory LOS	Divided Arterial (4 Lanes)
Segments on Cactus Avenue							
38 . between I-215 Northbound Ramps – Old Frontage Road and Elsworth Street	Widen from 4 lanes to 6 lanes.	TUMF/Fair Share	Widen from 4 lanes to 6 lanes.		9.45%	Roadway segment will continue to operate at a deficient LOS with implentation of the improvement. Cactus Avenue will be built out to the General Plan designation. Therefore, no further physical improvemetns are feasible at this segment.	Divided Major Arterial (6 Lanes)
39 . between Elsworth Street and Frederick Street	None	N/A			18.15%	Roadway segment will continue to operate at a deficient LOS. Cactus Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
40 . between Frederick Street and Graham Street - Riverside Drive	None	N/A			21.42%	Roadway segment will continue to operate at a deficient LOS. Cactus Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
Segments on Iris Avenue							
50 . between Perris Boulevard and Kitching Street	None	N/A			10.46%	Roadway segment will continue to operate at a deficient LOS. Iris Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Arterial (4 Lanes)

Table 9-N - Roadway Segment Improvements Funding Mechanism and Fair Share

Roadway Segment	Mitigations	Funding Mechanism	Improvements Covered by TUMF[1]	Improvements Covered Under Fair Share[1]	Fair Share Percentage	Significance After Mitigation (If Any)[2]	Roadway General Plan Classification
52 . between Lasselle Street and Camino Flores	None	N/A			12.57%	Roadway segment will continue to operate at a deficient LOS. Iris Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
53 . between Camino Flores and Coachlight Court - Avenida De Circo	None	N/A			13.01%	Roadway segment will continue to operate at a deficient LOS. Iris Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
54 . between Coachlight Court - Avenida De Circo and Grande Vista Drive	None	N/A			12.06%	Roadway segment will continue to operate at a deficient LOS. Iris Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
55 . between Grande Vista Drive and Nason Street – Hillrose Lane	None	N/A			12.06%	Roadway segment will continue to operate at a deficient LOS. Iris Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)
56 . between Nason Street – Hillrose Lane and Driveway 1	None	N/A			34.99%	Roadway segment will continue to operate at a deficient LOS. Iris Avenue is designated as a six lane roadway in the City's General Plan and is already built out to the General Plan classification at this segment. Therefore, no further physical improvements are feasible at this segment.	Divided Major Arterial (6 Lanes)

Notes:

TUMF = Transportation Uniform Mitigation Fee

[1] Recommended improvements covered through the Transportation Uniform Mitigation Fee (TUMF) program or payment of fair share are not considered adequate mitigation measures. This is because there is no guaranteed timeline for implementation of these improvements through the TUMF program or payment of fair share. Therefore, impacts at intersections where mitigations are included through TUMF should be considered significant and unavoidable.

[2] For roadway segments where no mitigations are feasible or no additional mitigations are feasible to improve to a satisfactory LOS, the City will require separate mitigation strategies as described in Section 9.2.2.

Orange shaded cells indicate where changes to the table has been made.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	712	132	23	729	30	202	320	25	51	232	104
Future Volume (veh/h)	84	712	132	23	729	30	202	320	25	51	232	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	109	925	171	30	947	39	262	416	32	66	301	135
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	142	1058	195	69	1090	45	214	1399	107	100	853	374
Arrive On Green	0.08	0.35	0.35	0.04	0.31	0.31	0.12	0.41	0.41	0.06	0.35	0.35
Sat Flow, veh/h	1810	3033	560	1810	3533	145	1810	3392	260	1810	2441	1069
Grp Volume(v), veh/h	109	550	546	30	484	502	262	220	228	66	221	215
Grp Sat Flow(s),veh/h/ln	1810	1805	1788	1810	1805	1873	1810	1805	1847	1810	1805	1705
Q Serve(g_s), s	6.5	31.4	31.5	1.8	27.9	27.9	13.0	9.0	9.1	3.9	10.0	10.3
Cycle Q Clear(g_c), s	6.5	31.4	31.5	1.8	27.9	27.9	13.0	9.0	9.1	3.9	10.0	10.3
Prop In Lane	1.00		0.31	1.00		0.08	1.00		0.14	1.00		0.63
Lane Grp Cap(c), veh/h	142	630	624	69	557	578	214	744	762	100	631	596
V/C Ratio(X)	0.77	0.87	0.87	0.43	0.87	0.87	1.23	0.30	0.30	0.66	0.35	0.36
Avail Cap(c_a), veh/h	197	706	699	125	633	657	214	744	762	158	631	596
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)	0.62	0.62	0.62	0.71	0.71	0.71	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	49.7	33.6	33.6	51.7	35.9	35.9	48.5	21.6	21.7	51.0	26.5	26.6
Incr Delay (d2), s/veh	7.3	7.2	7.3	3.0	8.4	8.1	135.5	1.0	1.0	7.0	1.5	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	3.2	14.7	14.6	0.9	13.4	13.8	13.9	4.0	4.1	2.0	4.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	40.7	40.8	54.8	44.3	44.0	184.0	22.6	22.7	58.0	28.0	28.3
LnGrp LOS	E	D	D	D	D	D	F	C	C	E	C	C
Approach Vol, veh/h		1205			1016			710			502	
Approach Delay, s/veh		42.3			44.5			82.2			32.1	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	49.4	8.2	42.4	17.0	42.4	12.6	38.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.6	33.8	7.6	43.0	13.0	30.4	12.0	38.6
Max Q Clear Time (g_c+I1), s	5.9	11.1	3.8	33.5	15.0	12.3	8.5	29.9
Green Ext Time (p_c), s	0.0	2.7	0.0	4.9	0.0	2.5	0.1	4.1

Intersection Summary	
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	185	317	79	125	80	290	1080	197	75	698	94
Future Volume (veh/h)	283	185	317	79	125	80	290	1080	197	75	698	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	333	218	373	93	147	94	341	1271	232	88	821	111
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	397	382	334	118	354	213	372	1733	877	177	1189	161
Arrive On Green	0.11	0.21	0.21	0.07	0.16	0.16	0.27	0.64	0.64	0.10	0.37	0.37
Sat Flow, veh/h	3510	1805	1578	1810	2164	1301	1810	3610	1609	1810	3195	432
Grp Volume(v), veh/h	333	218	373	93	121	120	341	1271	232	88	464	468
Grp Sat Flow(s),veh/h/ln	1755	1805	1578	1810	1805	1660	1810	1805	1609	1810	1805	1822
Q Serve(g_s), s	10.2	11.9	23.3	5.6	6.6	7.2	20.1	26.3	3.4	5.1	23.9	23.9
Cycle Q Clear(g_c), s	10.2	11.9	23.3	5.6	6.6	7.2	20.1	26.3	3.4	5.1	23.9	23.9
Prop In Lane	1.00		1.00	1.00		0.78	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	397	382	334	118	295	272	372	1733	877	177	672	678
V/C Ratio(X)	0.84	0.57	1.12	0.79	0.41	0.44	0.92	0.73	0.26	0.50	0.69	0.69
Avail Cap(c_a), veh/h	447	382	334	151	304	279	444	1733	877	177	672	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70	0.60	0.60	0.60
Uniform Delay (d), s/veh	47.8	38.9	43.4	50.7	41.2	41.5	39.1	15.1	3.4	47.1	29.2	29.2
Incr Delay (d2), s/veh	12.1	2.0	84.2	19.0	0.9	1.1	16.6	2.0	0.5	1.3	3.5	3.5
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	5.1	5.5	16.8	3.1	3.0	3.0	10.1	9.1	1.3	2.3	10.8	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	40.9	127.6	69.6	42.1	42.6	55.6	17.1	3.9	48.4	32.7	32.6
LnGrp LOS	E	D	F	E	D	D	E	B	A	D	C	C
Approach Vol, veh/h		924			334			1844			1020	
Approach Delay, s/veh		82.7			50.0			22.6			34.0	
Approach LOS		F			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	56.8	11.2	27.3	26.6	45.0	16.5	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.7	52.8	9.2	23.3	27.0	34.5	14.0	18.5
Max Q Clear Time (g_c+I1), s	7.1	28.3	7.6	25.3	22.1	25.9	12.2	9.2
Green Ext Time (p_c), s	0.0	11.7	0.0	0.0	0.5	3.9	0.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	726	169	33	626	34	103	221	17	33	260	51
Future Volume (veh/h)	40	726	169	33	626	34	103	221	17	33	260	51
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		0.99	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	741	172	34	639	35	105	226	17	34	265	52
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	90	888	206	81	1043	57	133	952	71	348	1203	232
Arrive On Green	0.05	0.31	0.31	0.04	0.30	0.30	0.07	0.28	0.28	0.38	0.80	0.80
Sat Flow, veh/h	1810	2907	675	1810	3477	190	1810	3402	254	1810	3017	583
Grp Volume(v), veh/h	41	460	453	34	331	343	105	119	124	34	157	160
Grp Sat Flow(s),veh/h/ln	1810	1805	1777	1810	1805	1862	1810	1805	1850	1810	1805	1795
Q Serve(g_s), s	2.0	21.4	21.4	1.6	14.2	14.2	5.1	4.6	4.7	1.1	1.9	2.0
Cycle Q Clear(g_c), s	2.0	21.4	21.4	1.6	14.2	14.2	5.1	4.6	4.7	1.1	1.9	2.0
Prop In Lane	1.00		0.38	1.00		0.10	1.00		0.14	1.00		0.32
Lane Grp Cap(c), veh/h	90	551	543	81	541	559	133	505	518	348	720	715
V/C Ratio(X)	0.45	0.83	0.83	0.42	0.61	0.61	0.79	0.24	0.24	0.10	0.22	0.22
Avail Cap(c_a), veh/h	161	662	652	161	662	683	161	505	518	348	720	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.39	0.39	0.39	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	41.6	29.1	29.1	41.9	27.0	27.0	41.0	25.0	25.0	22.7	5.7	5.7
Incr Delay (d2), s/veh	1.4	3.2	3.3	3.5	1.1	1.1	19.0	1.1	1.1	0.1	0.7	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	9.4	9.3	0.8	6.1	6.3	3.0	2.1	2.2	0.5	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	32.4	32.4	45.3	28.1	28.1	60.0	26.1	26.1	22.8	6.4	6.4
LnGrp LOS	D	C	C	D	C	C	E	C	C	C	A	A
Approach Vol, veh/h		954			708			348			351	
Approach Delay, s/veh		32.8			29.0			36.3			8.0	
Approach LOS		C			C			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	29.2	8.0	31.5	10.6	39.9	8.5	31.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.8	25.2	8.0	33.0	8.0	25.0	8.0	33.0
Max Q Clear Time (g_c+I1), s	3.1	6.7	3.6	23.4	7.1	4.0	4.0	16.2
Green Ext Time (p_c), s	0.0	1.2	0.0	4.1	0.0	1.8	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	47	195	57	37	62	89	859	81	102	1226	70
Future Volume (veh/h)	155	47	195	57	37	62	89	859	81	102	1226	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	160	48	201	59	38	64	92	886	84	105	1264	72
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	457	278	246	109	151	133	127	1444	732	377	1869	106
Arrive On Green	0.13	0.15	0.15	0.06	0.08	0.08	0.14	0.80	0.80	0.21	0.54	0.54
Sat Flow, veh/h	3510	1805	1598	1810	1805	1587	1810	3610	1589	1810	3471	197
Grp Volume(v), veh/h	160	48	201	59	38	64	92	886	84	105	656	680
Grp Sat Flow(s),veh/h/ln	1755	1805	1598	1810	1805	1587	1810	1805	1589	1810	1805	1864
Q Serve(g_s), s	3.7	2.1	11.0	2.9	1.8	3.5	4.4	8.7	0.4	4.4	23.7	23.8
Cycle Q Clear(g_c), s	3.7	2.1	11.0	2.9	1.8	3.5	4.4	8.7	0.4	4.4	23.7	23.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	457	278	246	109	151	133	127	1444	732	377	972	1003
V/C Ratio(X)	0.35	0.17	0.82	0.54	0.25	0.48	0.73	0.61	0.11	0.28	0.68	0.68
Avail Cap(c_a), veh/h	457	373	330	153	373	328	161	1444	732	377	972	1003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.58	0.58	0.58
Uniform Delay (d), s/veh	35.7	33.1	36.8	41.1	38.6	39.4	37.9	6.3	1.6	29.9	15.1	15.1
Incr Delay (d2), s/veh	0.5	0.3	11.2	4.2	0.9	2.7	10.8	1.9	0.3	0.2	2.2	2.2
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	1.6	0.9	5.0	1.4	0.8	1.4	2.2	2.3	0.2	1.9	9.5	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	33.4	48.0	45.3	39.4	42.0	48.7	8.1	1.9	30.2	17.3	17.2
LnGrp LOS	D	C	D	D	D	D	D	A	A	C	B	B
Approach Vol, veh/h		409			161			1062			1441	
Approach Delay, s/veh		41.6			42.6			11.2			18.2	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	40.0	9.4	17.9	10.3	52.5	15.7	11.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.8	36.0	7.6	18.6	8.0	39.8	7.6	18.6
Max Q Clear Time (g_c+I1), s	6.4	10.7	4.9	13.0	6.4	25.8	5.7	5.5
Green Ext Time (p_c), s	0.1	7.2	0.0	0.7	0.0	7.7	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	1120	263	91	1809	78	127	33	50	73	75	123
Future Volume (veh/h)	144	1120	263	91	1809	78	127	33	50	73	75	123
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	147	1143	0	93	1846	80	130	34	51	74	77	126
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	178	2556		119	2387	741	665	349	296	185	194	164
Arrive On Green	0.10	0.49	0.00	0.07	0.46	0.46	0.18	0.18	0.18	0.10	0.10	0.10
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	147	1143	0	93	1846	80	130	34	51	74	77	126
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	8.2	14.7	0.0	5.2	30.7	2.9	3.1	1.5	2.7	3.9	3.9	7.8
Cycle Q Clear(g_c), s	8.2	14.7	0.0	5.2	30.7	2.9	3.1	1.5	2.7	3.9	3.9	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	2556		119	2387	741	665	349	296	185	194	164
V/C Ratio(X)	0.83	0.45		0.78	0.77	0.11	0.20	0.10	0.17	0.40	0.40	0.77
Avail Cap(c_a), veh/h	222	2713		225	2723	845	665	349	296	325	342	290
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	17.0	0.0	47.3	23.3	15.8	35.5	34.9	35.4	43.2	43.2	45.0
Incr Delay (d2), s/veh	18.3	0.1	0.0	10.5	1.3	0.1	0.7	0.6	1.3	1.4	1.3	7.3
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	4.6	5.7	0.0	2.7	12.3	1.1	1.4	0.8	1.2	1.8	1.9	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	17.1	0.0	57.8	24.5	15.8	36.2	35.4	36.6	44.6	44.5	52.3
LnGrp LOS	E	B		E	C	B	D	D	D	D	D	D
Approach Vol, veh/h		1290	A		2019			215			277	
Approach Delay, s/veh		22.4			25.7			36.2			48.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	22.9	10.8	54.7		14.5	14.1	51.3
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s	18.9	12.8	53.8		18.5	12.6	54.0
Max Q Clear Time (g_c+I1), s	5.1	7.2	16.7		9.8	10.2	32.7
Green Ext Time (p_c), s	0.6	0.1	10.4		0.7	0.1	14.7

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	602	134	25	717	32	204	350	26	46	241	105
Future Volume (veh/h)	88	602	134	25	717	32	204	350	26	46	241	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	114	782	174	32	931	42	265	455	34	60	313	136
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	142	988	220	72	1052	47	299	1440	107	97	769	327
Arrive On Green	0.08	0.34	0.34	0.04	0.30	0.30	0.17	0.42	0.42	0.05	0.31	0.31
Sat Flow, veh/h	1810	2924	651	1810	3517	159	1810	3401	253	1810	2466	1048
Grp Volume(v), veh/h	114	483	473	32	478	495	265	241	248	60	227	222
Grp Sat Flow(s),veh/h/ln	1810	1805	1770	1810	1805	1871	1810	1805	1849	1810	1805	1709
Q Serve(g_s), s	6.8	26.6	26.6	1.9	27.8	27.8	15.8	9.8	9.8	3.6	10.9	11.3
Cycle Q Clear(g_c), s	6.8	26.6	26.6	1.9	27.8	27.8	15.8	9.8	9.8	3.6	10.9	11.3
Prop In Lane	1.00		0.37	1.00		0.08	1.00		0.14	1.00		0.61
Lane Grp Cap(c), veh/h	142	610	598	72	540	560	299	765	783	97	563	533
V/C Ratio(X)	0.80	0.79	0.79	0.45	0.88	0.88	0.89	0.31	0.32	0.62	0.40	0.42
Avail Cap(c_a), veh/h	197	663	650	125	591	612	395	765	783	151	563	533
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)	0.56	0.56	0.56	0.70	0.70	0.70	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	49.9	32.9	32.9	51.6	36.7	36.7	44.9	21.1	21.1	51.0	29.8	29.9
Incr Delay (d2), s/veh	9.0	3.5	3.5	3.0	10.4	10.1	17.1	1.1	1.1	6.1	2.1	2.3
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	3.4	12.0	11.8	0.9	13.6	14.1	8.4	4.3	4.5	1.8	5.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	36.4	36.5	54.6	47.2	46.9	62.0	22.2	22.2	57.1	31.9	32.2
LnGrp LOS	E	D	D	D	D	D	E	C	C	E	C	C
Approach Vol, veh/h		1070			1005			754			509	
Approach Delay, s/veh		38.8			47.3			36.2			35.0	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	50.6	8.4	41.2	22.2	38.3	12.6	36.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.2	36.8	7.6	40.4	24.0	22.0	12.0	36.0				
Max Q Clear Time (g_c+I1), s	5.6	11.8	3.9	28.6	17.8	13.3	8.8	29.8				
Green Ext Time (p_c), s	0.0	3.0	0.0	4.9	0.4	1.8	0.1	3.2				

Intersection Summary			
HCM 6th Ctrl Delay			40.2
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	187	321	80	126	83	305	1077	199	84	759	120
Future Volume (veh/h)	313	187	321	80	126	83	305	1077	199	84	759	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	368	220	378	94	148	98	359	1267	234	99	893	141
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	428	382	334	119	332	206	388	1733	878	176	1132	179
Arrive On Green	0.12	0.21	0.21	0.07	0.16	0.16	0.29	0.64	0.64	0.10	0.36	0.36
Sat Flow, veh/h	3510	1805	1578	1810	2133	1327	1810	3610	1609	1810	3123	493
Grp Volume(v), veh/h	368	220	378	94	124	122	359	1267	234	99	516	518
Grp Sat Flow(s),veh/h/ln	1755	1805	1578	1810	1805	1655	1810	1805	1609	1810	1805	1811
Q Serve(g_s), s	11.3	12.0	23.3	5.6	6.8	7.4	21.2	26.2	3.4	5.7	28.1	28.1
Cycle Q Clear(g_c), s	11.3	12.0	23.3	5.6	6.8	7.4	21.2	26.2	3.4	5.7	28.1	28.1
Prop In Lane	1.00		1.00	1.00		0.80	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	428	382	334	119	281	257	388	1733	878	176	654	656
V/C Ratio(X)	0.86	0.58	1.13	0.79	0.44	0.47	0.92	0.73	0.27	0.56	0.79	0.79
Avail Cap(c_a), veh/h	447	382	334	151	304	278	444	1733	878	176	654	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70	0.55	0.55	0.55
Uniform Delay (d), s/veh	47.4	38.9	43.4	50.6	42.1	42.4	38.4	15.1	3.4	47.4	31.3	31.3
Incr Delay (d2), s/veh	15.0	2.1	89.5	19.3	1.1	1.4	18.1	1.9	0.5	2.3	5.4	5.3
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	5.8	5.5	17.3	3.2	3.1	3.1	10.7	9.0	1.3	2.7	13.0	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	41.0	132.8	69.9	43.2	43.7	56.5	17.0	3.9	49.7	36.7	36.7
LnGrp LOS	E	D	F	E	D	D	E	B	A	D	D	D
Approach Vol, veh/h		966			340			1860			1133	
Approach Delay, s/veh		85.1			50.8			23.0			37.8	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	56.8	11.2	27.3	27.6	43.9	17.4	21.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.7	52.8	9.2	23.3	27.0	34.5	14.0	18.5
Max Q Clear Time (g_c+I1), s	7.7	28.2	7.6	25.3	23.2	30.1	13.3	9.4
Green Ext Time (p_c), s	0.0	11.7	0.0	0.0	0.4	2.5	0.1	0.9

Intersection Summary		
HCM 6th Ctrl Delay		43.0
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	1841	111	41	1204	104	268	84	100	212	93	223
Future Volume (veh/h)	155	1841	111	41	1204	104	268	84	100	212	93	223
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	167	1980	0	44	1295	112	288	90	108	164	190	240
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	197	1765		126	1559	484	807	424	354	325	341	289
Arrive On Green	0.11	0.34	0.00	0.07	0.30	0.30	0.22	0.22	0.22	0.18	0.18	0.18
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1589	1810	1900	1610
Grp Volume(v), veh/h	167	1980	0	44	1295	112	288	90	108	164	190	240
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1589	1810	1900	1610
Q Serve(g_s), s	7.7	29.0	0.0	2.0	19.8	4.5	5.7	3.3	4.8	7.0	7.8	12.2
Cycle Q Clear(g_c), s	7.7	29.0	0.0	2.0	19.8	4.5	5.7	3.3	4.8	7.0	7.8	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	1765		126	1559	484	807	424	354	325	341	289
V/C Ratio(X)	0.85	1.12		0.35	0.83	0.23	0.36	0.21	0.30	0.50	0.56	0.83
Avail Cap(c_a), veh/h	197	1765		159	1656	514	807	424	354	393	412	350
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	28.1	0.0	37.8	27.8	22.4	27.9	27.0	27.6	31.5	31.9	33.7
Incr Delay (d2), s/veh	27.2	62.9	0.0	1.7	3.6	0.2	1.2	1.1	2.2	1.2	1.4	13.2
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	4.8	21.6	0.0	0.9	8.4	1.7	2.6	1.6	2.0	3.1	3.6	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	91.0	0.0	39.5	31.3	22.6	29.2	28.1	29.8	32.8	33.3	46.9
LnGrp LOS	E	F		D	C	C	C	C	C	C	C	D
Approach Vol, veh/h		2147	A		1451			486			594	
Approach Delay, s/veh		89.0			30.9			29.1			38.7	
Approach LOS		F			C			C			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	9.9	33.0		19.3	13.3	29.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		19.0	7.5	29.0		18.5	9.3	27.2				
Max Q Clear Time (g_c+I1), s		7.7	4.0	31.0		14.2	9.7	21.8				
Green Ext Time (p_c), s		1.5	0.0	0.0		1.0	0.0	3.8				

Intersection Summary		
HCM 6th Ctrl Delay		58.3
HCM 6th LOS		E

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	710	171	38	517	32	104	256	22	45	328	57
Future Volume (veh/h)	40	710	171	38	517	32	104	256	22	45	328	57
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		0.99	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	724	174	39	528	33	106	261	22	46	335	58
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	90	864	208	88	1027	64	136	981	82	332	1231	211
Arrive On Green	0.05	0.30	0.30	0.05	0.30	0.30	0.08	0.29	0.29	0.37	0.80	0.80
Sat Flow, veh/h	1810	2885	693	1810	3447	215	1810	3368	282	1810	3082	528
Grp Volume(v), veh/h	41	453	445	39	276	285	106	139	144	46	195	198
Grp Sat Flow(s),veh/h/ln	1810	1805	1774	1810	1805	1858	1810	1805	1845	1810	1805	1805
Q Serve(g_s), s	2.0	21.1	21.1	1.9	11.4	11.5	5.2	5.3	5.4	1.5	2.5	2.6
Cycle Q Clear(g_c), s	2.0	21.1	21.1	1.9	11.4	11.5	5.2	5.3	5.4	1.5	2.5	2.6
Prop In Lane	1.00		0.39	1.00		0.12	1.00		0.15	1.00		0.29
Lane Grp Cap(c), veh/h	90	540	531	88	538	553	136	525	537	332	721	721
V/C Ratio(X)	0.45	0.84	0.84	0.44	0.51	0.52	0.78	0.26	0.27	0.14	0.27	0.28
Avail Cap(c_a), veh/h	161	642	631	161	642	660	241	525	537	332	721	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.40	0.40	0.40	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	41.6	29.5	29.5	41.6	26.2	26.2	40.9	24.5	24.5	23.8	5.7	5.7
Incr Delay (d2), s/veh	1.4	3.5	3.6	3.5	0.8	0.7	9.3	1.2	1.2	0.2	0.9	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	0.9	9.4	9.2	0.9	4.9	5.0	2.6	2.4	2.5	0.7	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	33.0	33.1	45.2	26.9	26.9	50.2	25.7	25.8	23.9	6.6	6.6
LnGrp LOS	D	C	C	D	C	C	D	C	C	C	A	A
Approach Vol, veh/h		939			600			389			439	
Approach Delay, s/veh		33.5			28.1			32.4			8.4	
Approach LOS		C			C			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	30.2	8.4	30.9	10.8	39.9	8.5	30.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.8	26.2	8.0	32.0	12.0	22.0	8.0	32.0
Max Q Clear Time (g_c+I1), s	3.5	7.4	3.9	23.1	7.2	4.6	4.0	13.5
Green Ext Time (p_c), s	0.0	1.5	0.0	3.8	0.1	2.1	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	48	200	58	38	66	96	926	82	107	1235	89
Future Volume (veh/h)	192	48	200	58	38	66	96	926	82	107	1235	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	198	49	206	60	39	68	99	955	85	110	1273	92
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, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	468	283	250	109	151	133	129	1444	733	371	1822	131
Arrive On Green	0.13	0.16	0.16	0.06	0.08	0.08	0.14	0.80	0.80	0.21	0.53	0.53
Sat Flow, veh/h	3510	1805	1598	1810	1805	1587	1810	3610	1589	1810	3414	246
Grp Volume(v), veh/h	198	49	206	60	39	68	99	955	85	110	672	693
Grp Sat Flow(s),veh/h/ln	1755	1805	1598	1810	1805	1587	1810	1805	1589	1810	1805	1855
Q Serve(g_s), s	4.7	2.1	11.2	2.9	1.8	3.7	4.7	10.1	0.4	4.6	24.9	25.0
Cycle Q Clear(g_c), s	4.7	2.1	11.2	2.9	1.8	3.7	4.7	10.1	0.4	4.6	24.9	25.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	468	283	250	109	151	133	129	1444	733	371	964	990
V/C Ratio(X)	0.42	0.17	0.82	0.55	0.26	0.51	0.77	0.66	0.12	0.30	0.70	0.70
Avail Cap(c_a), veh/h	468	373	330	153	373	328	161	1444	733	371	964	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	0.58	0.58	0.58
Uniform Delay (d), s/veh	35.8	32.9	36.7	41.1	38.6	39.5	37.9	6.4	1.6	30.3	15.6	15.6
Incr Delay (d2), s/veh	0.6	0.3	11.9	4.2	0.9	3.0	15.1	2.3	0.3	0.3	2.5	2.4
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	2.0	0.9	5.1	1.4	0.8	1.5	2.5	2.6	0.2	2.0	10.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	33.2	48.6	45.3	39.5	42.5	53.0	8.7	1.9	30.5	18.0	18.0
LnGrp LOS	D	C	D	D	D	D	D	A	A	C	B	B
Approach Vol, veh/h		453			167			1139			1475	
Approach Delay, s/veh		41.6			42.8			12.0			19.0	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	40.0	9.4	18.1	10.4	52.0	16.0	11.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.8	36.0	7.6	18.6	8.0	39.8	7.6	18.6
Max Q Clear Time (g_c+I1), s	6.6	12.1	4.9	13.2	6.7	27.0	6.7	5.7
Green Ext Time (p_c), s	0.1	7.8	0.0	0.7	0.0	7.4	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	512	785	17	7	1604	296	19	238	17	207	48	570
Future Volume (veh/h)	512	785	17	7	1604	296	19	238	17	207	48	570
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	512	785	17	7	1604	296	19	238	17	207	48	570
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	601	2560	55	43	1718	667	50	534	452	151	640	542
Arrive On Green	0.17	0.49	0.49	0.01	0.33	0.33	0.03	0.28	0.28	0.08	0.34	0.34
Sat Flow, veh/h	3510	5223	113	3510	5187	1610	1810	1900	1608	1810	1900	1609
Grp Volume(v), veh/h	512	519	283	7	1604	296	19	238	17	207	48	570
Grp Sat Flow(s),veh/h/ln	1755	1729	1878	1755	1729	1610	1810	1900	1608	1810	1900	1609
Q Serve(g_s), s	17.0	10.8	10.8	0.2	35.9	8.5	1.2	12.4	0.9	10.0	2.1	25.9
Cycle Q Clear(g_c), s	17.0	10.8	10.8	0.2	35.9	8.5	1.2	12.4	0.9	10.0	2.1	25.9
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	601	1695	920	43	1718	667	50	534	452	151	640	542
V/C Ratio(X)	0.85	0.31	0.31	0.16	0.93	0.44	0.38	0.45	0.04	1.37	0.07	1.05
Avail Cap(c_a), veh/h	907	1830	994	219	1729	671	106	534	452	151	640	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	48.3	18.4	18.4	58.7	38.9	10.3	57.4	35.4	31.3	55.0	27.1	16.4
Incr Delay (d2), s/veh	5.1	0.1	0.2	1.8	9.9	0.5	4.8	2.7	0.2	203.9	0.2	52.8
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	7.8	4.3	4.7	0.1	16.6	2.8	0.6	6.1	0.4	13.1	1.0	17.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	18.5	18.6	60.5	48.7	10.8	62.2	38.1	31.5	258.9	27.3	69.1
LnGrp LOS	D	B	B	E	D	B	E	D	C	F	C	F
Approach Vol, veh/h		1314			1907			274			825	
Approach Delay, s/veh		32.1			42.9			39.4			114.3	
Approach LOS		C			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.7	5.5	62.8	7.3	44.4	24.5	43.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	23.0	7.5	63.5	7.0	26.0	31.0	40.0
Max Q Clear Time (g_c+I1), s	12.0	14.4	2.2	12.8	3.2	27.9	19.0	37.9
Green Ext Time (p_c), s	0.0	0.9	0.0	6.3	0.0	0.0	1.5	1.8

Intersection Summary		
HCM 6th Ctrl Delay		53.0
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	1186	303	93	2095	79	276	64	90	74	76	142
Future Volume (veh/h)	164	1186	303	93	2095	79	276	64	90	74	76	142
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	164	1186	0	93	2095	79	276	64	90	74	76	142
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	1584		425	2255	700	795	418	354	193	202	171
Arrive On Green	0.11	0.31	0.00	0.24	0.43	0.43	0.22	0.22	0.22	0.18	0.18	0.18
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	164	1186	0	93	2095	79	276	64	90	74	76	142
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	10.7	24.7	0.0	5.0	46.0	3.5	7.7	3.3	5.5	4.3	4.2	10.2
Cycle Q Clear(g_c), s	10.7	24.7	0.0	5.0	46.0	3.5	7.7	3.3	5.5	4.3	4.2	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	1584		425	2255	700	795	418	354	193	202	171
V/C Ratio(X)	0.86	0.75		0.22	0.93	0.11	0.35	0.15	0.25	0.38	0.38	0.83
Avail Cap(c_a), veh/h	211	2326		425	2274	706	795	418	354	279	293	248
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	0.59	0.59	0.59	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	52.8	37.5	0.0	37.0	32.2	20.2	39.5	37.8	38.7	45.9	45.8	48.3
Incr Delay (d2), s/veh	26.0	0.8	0.0	0.2	4.7	0.0	1.2	0.8	1.7	1.2	1.1	13.5
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	6.2	10.5	0.0	2.2	19.7	1.3	3.6	1.6	2.4	2.0	2.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	38.3	0.0	37.2	36.9	20.2	40.7	38.6	40.4	47.1	46.9	61.8
LnGrp LOS	E	D		D	D	C	D	D	D	D	D	E
Approach Vol, veh/h		1350	A		2267			430			292	
Approach Delay, s/veh		43.2			36.3			40.3			54.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.4	32.2	40.6		16.8	16.7	56.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.9	12.8	53.8		18.5	14.0	52.6				
Max Q Clear Time (g_c+I1), s		9.7	7.0	26.7		12.2	12.7	48.0				
Green Ext Time (p_c), s		1.1	0.1	9.9		0.6	0.1	4.2				

Intersection Summary			
HCM 6th Ctrl Delay			40.1
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	672	136	28	801	43	208	403	28	56	256	107
Future Volume (veh/h)	96	672	136	28	801	43	208	403	28	56	256	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	96	672	136	28	801	43	208	403	28	56	256	107
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	121	912	184	64	956	51	453	1629	113	89	688	280
Arrive On Green	0.07	0.31	0.31	0.04	0.27	0.27	0.25	0.48	0.48	0.10	0.55	0.55
Sat Flow, veh/h	1810	2981	603	1810	3483	187	1810	3421	237	1810	2502	1017
Grp Volume(v), veh/h	96	407	401	28	415	429	208	212	219	56	183	180
Grp Sat Flow(s),veh/h/ln	1810	1805	1779	1810	1805	1865	1810	1805	1852	1810	1805	1714
Q Serve(g_s), s	6.3	24.2	24.3	1.8	26.0	26.0	11.7	8.4	8.4	3.6	6.8	7.2
Cycle Q Clear(g_c), s	6.3	24.2	24.3	1.8	26.0	26.0	11.7	8.4	8.4	3.6	6.8	7.2
Prop In Lane	1.00		0.34	1.00		0.10	1.00		0.13	1.00		0.59
Lane Grp Cap(c), veh/h	121	552	544	64	495	512	453	859	882	89	496	471
V/C Ratio(X)	0.79	0.74	0.74	0.44	0.84	0.84	0.46	0.25	0.25	0.63	0.37	0.38
Avail Cap(c_a), veh/h	211	752	741	121	662	684	453	859	882	166	496	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.62	0.62	0.62	0.80	0.80	0.80	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	55.2	37.3	37.3	56.7	41.0	41.0	38.1	18.7	18.7	53.0	21.1	21.2
Incr Delay (d2), s/veh	7.1	1.6	1.6	3.7	5.8	5.6	0.7	0.7	0.7	6.9	2.1	2.3
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	3.1	10.9	10.7	0.9	12.3	12.7	5.3	3.7	3.8	1.7	2.9	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.3	38.9	38.9	60.4	46.8	46.6	38.8	19.3	19.4	59.9	23.2	23.5
LnGrp LOS	E	D	D	E	D	D	D	B	B	E	C	C
Approach Vol, veh/h		904			872			639			419	
Approach Delay, s/veh		41.4			47.2			25.7			28.2	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	61.1	8.2	40.7	34.1	37.0	12.0	36.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	35.0	8.0	50.0	13.0	33.0	14.0	44.0
Max Q Clear Time (g_c+I1), s	5.6	10.4	3.8	26.3	13.7	9.2	8.3	28.0
Green Ext Time (p_c), s	0.0	2.6	0.0	5.5	0.0	2.2	0.1	4.9

Intersection Summary	
HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	366	191	327	82	129	88	331	1255	203	101	942	166
Future Volume (veh/h)	366	191	327	82	129	88	331	1255	203	101	942	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	366	191	327	82	129	88	331	1255	203	101	942	166
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	606	394	345	107	221	141	362	1831	911	127	1157	204
Arrive On Green	0.17	0.22	0.22	0.06	0.10	0.10	0.07	0.17	0.17	0.07	0.38	0.38
Sat Flow, veh/h	3510	1805	1579	1810	2112	1342	1810	3610	1609	1810	3067	540
Grp Volume(v), veh/h	366	191	327	82	109	108	331	1255	203	101	554	554
Grp Sat Flow(s),veh/h/ln	1755	1805	1579	1810	1805	1649	1810	1805	1609	1810	1805	1802
Q Serve(g_s), s	10.6	10.2	22.5	4.9	6.3	6.9	20.0	36.0	10.6	6.0	30.3	30.4
Cycle Q Clear(g_c), s	10.6	10.2	22.5	4.9	6.3	6.9	20.0	36.0	10.6	6.0	30.3	30.4
Prop In Lane	1.00		1.00	1.00		0.81	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	606	394	345	107	189	173	362	1831	911	127	681	680
V/C Ratio(X)	0.60	0.48	0.95	0.77	0.58	0.63	0.91	0.69	0.22	0.80	0.81	0.81
Avail Cap(c_a), veh/h	1037	394	345	444	304	277	362	1831	911	171	681	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79	0.39	0.39	0.39
Uniform Delay (d), s/veh	42.0	37.6	42.4	51.0	46.9	47.2	50.4	37.5	21.4	50.4	30.8	30.8
Incr Delay (d2), s/veh	1.0	0.9	35.3	10.8	2.8	3.7	22.9	1.7	0.4	7.1	4.3	4.3
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	4.7	4.6	12.0	2.5	3.0	3.0	12.0	17.8	4.6	3.0	13.7	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	38.5	77.7	61.8	49.7	50.9	73.3	39.2	21.8	57.5	35.1	35.1
LnGrp LOS	D	D	E	E	D	D	E	D	C	E	D	D
Approach Vol, veh/h		884			299			1789			1209	
Approach Delay, s/veh		54.9			53.4			43.6			37.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	59.8	10.5	28.0	26.0	45.5	23.0	15.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.4	32.6	27.0	24.0	22.0	21.0	32.5	18.5
Max Q Clear Time (g_c+I1), s	8.0	38.0	6.9	24.5	22.0	32.4	12.6	8.9
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	0.0	1.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	722	1608	11	9	1220	343	11	129	8	541	91	705
Future Volume (veh/h)	722	1608	11	9	1220	343	11	129	8	541	91	705
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		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	722	1608	11	9	1220	343	11	129	8	541	91	705
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	801	2005	14	325	1254	737	279	332	280	401	461	389
Arrive On Green	0.23	0.38	0.38	0.09	0.24	0.24	0.15	0.17	0.17	0.22	0.24	0.24
Sat Flow, veh/h	3510	5315	36	3510	5187	1573	1810	1900	1602	1810	1900	1604
Grp Volume(v), veh/h	722	1046	573	9	1220	343	11	129	8	541	91	705
Grp Sat Flow(s),veh/h/ln	1755	1729	1893	1755	1729	1573	1810	1900	1602	1810	1900	1604
Q Serve(g_s), s	24.0	32.4	32.4	0.3	28.0	0.0	0.6	7.2	0.5	26.6	4.6	17.8
Cycle Q Clear(g_c), s	24.0	32.4	32.4	0.3	28.0	0.0	0.6	7.2	0.5	26.6	4.6	17.8
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	801	1305	714	325	1254	737	279	333	280	401	461	389
V/C Ratio(X)	0.90	0.80	0.80	0.03	0.97	0.47	0.04	0.39	0.03	1.35	0.20	1.81
Avail Cap(c_a), veh/h	907	1513	828	325	1254	737	279	333	280	401	461	389
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	45.0	33.4	33.4	49.5	45.1	21.9	43.2	43.8	41.0	46.7	36.1	16.9
Incr Delay (d2), s/veh	11.2	2.8	5.0	0.0	19.3	0.5	0.3	3.4	0.2	172.2	1.0	374.9
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	11.6	13.9	15.7	0.1	14.1	6.6	0.3	3.7	0.2	31.1	2.3	47.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	36.2	38.3	49.6	64.4	22.4	43.5	47.2	41.2	218.9	37.1	391.9
LnGrp LOS	E	D	D	D	E	C	D	D	D	F	D	F
Approach Vol, veh/h		2341			1572			148			1337	
Approach Delay, s/veh		42.9			55.1			46.6			297.7	
Approach LOS		D			E			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.6	25.0	15.1	49.3	22.5	33.1	31.4	33.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	23.0	21.0	7.5	52.5	18.5	25.5	31.0	29.0				
Max Q Clear Time (g_c+I1), s	28.6	9.2	2.3	34.4	2.6	19.8	26.0	30.0				
Green Ext Time (p_c), s	0.0	0.5	0.0	10.9	0.0	1.9	1.4	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			109.7									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	2185	265	82	1373	116	375	120	104	232	217	327
Future Volume (veh/h)	247	2185	265	82	1373	116	375	120	104	232	217	327
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	247	2185	0	82	1373	116	375	120	104	224	227	327
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	325	2036		103	1400	435	699	367	307	405	425	361
Arrive On Green	0.18	0.39	0.00	0.11	0.54	0.54	0.19	0.19	0.19	0.07	0.07	0.07
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1589	1810	1900	1610
Grp Volume(v), veh/h	247	2185	0	82	1373	116	375	120	104	224	227	327
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1589	1810	1900	1610
Q Serve(g_s), s	15.6	47.1	0.0	5.3	31.0	4.6	11.2	6.5	6.8	14.3	13.8	24.2
Cycle Q Clear(g_c), s	15.6	47.1	0.0	5.3	31.0	4.6	11.2	6.5	6.8	14.3	13.8	24.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	2036		103	1400	435	699	367	307	405	425	361
V/C Ratio(X)	0.76	1.07		0.80	0.98	0.27	0.54	0.33	0.34	0.55	0.53	0.91
Avail Cap(c_a), veh/h	344	2036		122	1400	435	699	367	307	422	443	376
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	0.69	0.69	0.69	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	46.8	36.4	0.0	52.5	27.3	21.2	43.6	41.7	41.8	49.8	49.5	54.3
Incr Delay (d2), s/veh	9.1	42.9	0.0	18.9	15.6	0.2	2.9	2.4	3.0	0.8	0.6	15.5
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	7.8	27.5	0.0	2.8	11.3	1.7	5.3	3.3	2.9	7.1	7.1	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	79.4	0.0	71.4	42.8	21.4	46.5	44.0	44.8	50.6	50.1	69.9
LnGrp LOS	E	F		E	D	C	D	D	D	D	D	E
Approach Vol, veh/h		2432	A		1571			599			778	
Approach Delay, s/veh		77.0			42.7			45.7			58.6	
Approach LOS		E			D			D			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.2	10.8	51.1		30.9	25.5	36.4				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		20.8	8.1	47.1		28.0	22.8	32.4				
Max Q Clear Time (g_c+I1), s		13.2	7.3	49.1		26.2	17.6	33.0				
Green Ext Time (p_c), s		1.6	0.0	0.0		0.7	0.3	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		60.8
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	812	174	48	620	47	106	320	32	77	451	67
Future Volume (veh/h)	41	812	174	48	620	47	106	320	32	77	451	67
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		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	812	174	48	620	47	106	320	32	77	451	67
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	243	922	198	84	761	58	220	1504	149	98	1220	180
Arrive On Green	0.13	0.31	0.31	0.05	0.22	0.22	0.12	0.45	0.45	0.11	0.77	0.77
Sat Flow, veh/h	1810	2956	633	1810	3397	257	1810	3312	329	1810	3155	466
Grp Volume(v), veh/h	41	496	490	48	329	338	106	173	179	77	257	261
Grp Sat Flow(s),veh/h/ln	1810	1805	1785	1810	1805	1849	1810	1805	1836	1810	1805	1816
Q Serve(g_s), s	2.4	31.3	31.3	3.1	20.8	20.8	6.6	7.0	7.1	5.0	5.4	5.5
Cycle Q Clear(g_c), s	2.4	31.3	31.3	3.1	20.8	20.8	6.6	7.0	7.1	5.0	5.4	5.5
Prop In Lane	1.00		0.35	1.00		0.14	1.00		0.18	1.00		0.26
Lane Grp Cap(c), veh/h	243	563	556	84	404	414	220	820	834	98	698	702
V/C Ratio(X)	0.17	0.88	0.88	0.57	0.81	0.82	0.48	0.21	0.21	0.78	0.37	0.37
Avail Cap(c_a), veh/h	243	632	625	121	638	653	220	820	834	219	698	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.29	0.29	0.29	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	46.0	39.2	39.2	56.0	44.2	44.2	49.2	19.8	19.8	52.8	9.0	9.0
Incr Delay (d2), s/veh	0.1	4.2	4.3	5.9	4.5	4.4	1.6	0.6	0.6	12.1	1.4	1.4
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	1.1	14.4	14.2	1.6	9.7	10.0	3.1	3.1	3.2	2.5	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	43.4	43.4	62.0	48.6	48.7	50.8	20.4	20.4	64.9	10.4	10.4
LnGrp LOS	D	D	D	E	D	D	D	C	C	E	B	B
Approach Vol, veh/h		1027			715			458			595	
Approach Delay, s/veh		43.5			49.5			27.4			17.4	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	58.5	9.6	41.4	18.6	50.4	20.1	30.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.5	39.5	8.0	42.0	7.6	46.4	7.6	42.4
Max Q Clear Time (g_c+I1), s	7.0	9.1	5.1	33.3	8.6	7.5	4.4	22.8
Green Ext Time (p_c), s	0.1	2.2	0.0	4.1	0.0	3.5	0.0	4.1

Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	48	210	59	39	72	109	1135	84	115	1457	123
Future Volume (veh/h)	259	48	210	59	39	72	109	1135	84	115	1457	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	259	48	210	59	39	72	109	1135	84	115	1457	123
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	468	275	243	96	130	114	136	1762	861	291	1934	162
Arrive On Green	0.13	0.15	0.15	0.05	0.07	0.07	0.15	0.98	0.98	0.16	0.57	0.57
Sat Flow, veh/h	3510	1805	1597	1810	1805	1586	1810	3610	1589	1810	3370	283
Grp Volume(v), veh/h	259	48	210	59	39	72	109	1135	84	115	776	804
Grp Sat Flow(s),veh/h/ln	1755	1805	1597	1810	1805	1586	1810	1805	1589	1810	1805	1848
Q Serve(g_s), s	7.6	2.5	14.1	3.5	2.3	4.9	6.4	2.2	0.1	6.3	35.4	36.0
Cycle Q Clear(g_c), s	7.6	2.5	14.1	3.5	2.3	4.9	6.4	2.2	0.1	6.3	35.4	36.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	468	275	243	96	130	114	136	1762	861	291	1036	1061
V/C Ratio(X)	0.55	0.17	0.86	0.61	0.30	0.63	0.80	0.64	0.10	0.39	0.75	0.76
Avail Cap(c_a), veh/h	468	331	293	171	325	285	345	1762	861	291	1036	1061
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.12	0.12	0.12
Uniform Delay (d), s/veh	44.6	40.6	45.5	51.0	48.4	49.6	45.9	0.7	0.2	41.3	17.5	17.7
Incr Delay (d2), s/veh	1.4	0.3	19.7	6.2	1.3	5.6	9.6	1.7	0.2	0.1	0.6	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	3.4	1.2	6.9	1.8	1.1	2.1	3.1	0.8	0.1	2.8	14.0	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	40.9	65.2	57.2	49.7	55.3	55.5	2.4	0.4	41.4	18.1	18.3
LnGrp LOS	D	D	E	E	D	E	E	A	A	D	B	B
Approach Vol, veh/h		517			170			1328			1695	
Approach Delay, s/veh		53.3			54.7			6.6			19.8	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.7	57.7	9.8	20.7	12.3	67.1	18.7	11.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.7	53.7	10.4	20.2	21.0	42.4	10.8	19.8
Max Q Clear Time (g_c+I1), s	8.3	4.2	5.5	16.1	8.4	38.0	9.6	6.9
Green Ext Time (p_c), s	0.0	11.8	0.0	0.5	0.2	3.5	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	685	866	17	7	1775	376	22	312	17	276	59	786
Future Volume (veh/h)	685	866	17	7	1775	376	22	312	17	276	59	786
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	685	866	17	7	1775	376	22	312	17	276	59	786
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	768	2827	55	43	1729	671	55	439	372	151	540	457
Arrive On Green	0.22	0.54	0.54	0.01	0.33	0.33	0.03	0.23	0.23	0.08	0.28	0.28
Sat Flow, veh/h	3510	5235	103	3510	5187	1610	1810	1900	1608	1810	1900	1608
Grp Volume(v), veh/h	685	572	311	7	1775	376	22	312	17	276	59	786
Grp Sat Flow(s),veh/h/ln	1755	1729	1880	1755	1729	1610	1810	1900	1608	1810	1900	1608
Q Serve(g_s), s	22.7	10.9	11.0	0.2	40.0	9.7	1.4	18.1	1.0	10.0	2.8	20.5
Cycle Q Clear(g_c), s	22.7	10.9	11.0	0.2	40.0	9.7	1.4	18.1	1.0	10.0	2.8	20.5
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	768	1867	1015	43	1729	671	55	439	372	151	540	457
V/C Ratio(X)	0.89	0.31	0.31	0.16	1.03	0.56	0.40	0.71	0.05	1.83	0.11	1.72
Avail Cap(c_a), veh/h	907	1867	1015	219	1729	671	106	439	372	151	540	457
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	45.5	15.2	15.2	58.7	40.0	10.5	57.1	42.4	35.8	55.0	31.7	15.5
Incr Delay (d2), s/veh	9.9	0.1	0.2	1.8	28.7	1.1	4.7	9.4	0.2	398.3	0.4	332.8
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	10.9	4.3	4.7	0.1	21.3	3.1	0.7	9.6	0.4	21.2	1.3	49.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	15.3	15.4	60.5	68.7	11.5	61.8	51.8	36.1	453.3	32.1	348.4
LnGrp LOS	E	B	B	E	F	B	E	D	D	F	C	F
Approach Vol, veh/h		1568			2158			351			1121	
Approach Delay, s/veh		32.8			58.7			51.7			357.6	
Approach LOS		C			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	31.7	5.5	68.8	7.6	38.1	30.3	44.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	23.0	7.5	63.5	7.0	26.0	31.0	40.0
Max Q Clear Time (g_c+I1), s	12.0	20.1	2.2	13.0	3.4	22.5	24.7	42.0
Green Ext Time (p_c), s	0.0	0.5	0.0	7.1	0.0	1.4	1.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	114.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	1246	330	94	2291	81	375	85	117	75	77	155
Future Volume (veh/h)	178	1246	330	94	2291	81	375	85	117	75	77	155
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	178	1246	0	94	2291	81	375	85	117	75	77	155
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	190	1652		428	2333	724	716	376	318	206	217	184
Arrive On Green	0.11	0.32	0.00	0.31	0.60	0.60	0.20	0.20	0.20	0.19	0.19	0.19
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	178	1246	0	94	2291	81	375	85	117	75	77	155
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	11.7	25.9	0.0	4.6	51.6	2.6	11.1	4.5	7.5	4.3	4.2	11.1
Cycle Q Clear(g_c), s	11.7	25.9	0.0	4.6	51.6	2.6	11.1	4.5	7.5	4.3	4.2	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	1652		428	2333	724	716	376	318	206	217	184
V/C Ratio(X)	0.94	0.75		0.22	0.98	0.11	0.52	0.23	0.37	0.36	0.36	0.84
Avail Cap(c_a), veh/h	190	2326		428	2334	725	716	376	318	279	293	248
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	0.49	0.49	0.49	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	53.3	36.7	0.0	33.0	23.6	13.8	43.1	40.4	41.6	44.8	44.7	47.5
Incr Delay (d2), s/veh	47.4	0.9	0.0	0.1	9.3	0.0	2.7	1.4	3.2	1.0	0.9	16.3
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	7.8	11.0	0.0	2.0	19.7	1.0	5.3	2.3	3.3	2.0	2.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.7	37.6	0.0	33.1	32.9	13.8	45.8	41.8	44.9	45.8	45.7	63.9
LnGrp LOS	F	D		C	C	B	D	D	D	D	D	E
Approach Vol, veh/h		1424	A		2466			577			307	
Approach Delay, s/veh		45.5			32.3			45.0			54.9	
Approach LOS		D			C			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.7	32.4	42.2		17.7	16.6	58.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.9	12.8	53.8		18.5	12.6	54.0				
Max Q Clear Time (g_c+I1), s		13.1	6.6	27.9		13.1	13.7	53.6				
Green Ext Time (p_c), s		1.2	0.1	10.4		0.5	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			39.2									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	735	138	30	862	50	211	438	30	64	267	108
Future Volume (veh/h)	101	735	138	30	862	50	211	438	30	64	267	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	101	735	138	30	862	50	211	438	30	64	267	108
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	127	985	185	67	1014	59	415	1550	106	93	695	274
Arrive On Green	0.07	0.33	0.33	0.04	0.29	0.29	0.23	0.45	0.45	0.10	0.55	0.55
Sat Flow, veh/h	1810	3024	568	1810	3467	201	1810	3424	234	1810	2527	996
Grp Volume(v), veh/h	101	439	434	30	449	463	211	230	238	64	189	186
Grp Sat Flow(s),veh/h/ln	1810	1805	1786	1810	1805	1863	1810	1805	1853	1810	1805	1718
Q Serve(g_s), s	6.6	26.0	26.0	1.9	28.1	28.1	12.2	9.6	9.7	4.1	7.1	7.5
Cycle Q Clear(g_c), s	6.6	26.0	26.0	1.9	28.1	28.1	12.2	9.6	9.7	4.1	7.1	7.5
Prop In Lane	1.00		0.32	1.00		0.11	1.00		0.13	1.00		0.58
Lane Grp Cap(c), veh/h	127	588	582	67	528	545	415	817	839	93	496	472
V/C Ratio(X)	0.80	0.75	0.75	0.45	0.85	0.85	0.51	0.28	0.28	0.69	0.38	0.39
Avail Cap(c_a), veh/h	211	752	744	121	662	683	415	817	839	166	496	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.56	0.56	0.56	0.79	0.79	0.79	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	55.0	36.0	36.0	56.6	40.0	40.0	40.4	20.6	20.6	52.9	21.2	21.3
Incr Delay (d2), s/veh	6.4	1.7	1.7	3.7	6.8	6.7	1.0	0.9	0.8	8.5	2.2	2.4
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	3.2	11.6	11.5	1.0	13.4	13.8	5.6	4.2	4.4	2.0	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	37.8	37.8	60.3	46.8	46.6	41.4	21.5	21.5	61.4	23.3	23.7
LnGrp LOS	E	D	D	E	D	D	D	C	C	E	C	C
Approach Vol, veh/h		974			942			679			439	
Approach Delay, s/veh		40.2			47.1			27.7			29.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	58.3	8.4	43.1	31.5	37.0	12.4	39.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	35.0	8.0	50.0	13.0	33.0	14.0	44.0
Max Q Clear Time (g_c+I1), s	6.1	11.7	3.9	28.0	14.2	9.5	8.6	30.1
Green Ext Time (p_c), s	0.0	2.8	0.0	5.9	0.0	2.3	0.1	5.0

Intersection Summary		
HCM 6th Ctrl Delay		37.9
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	401	193	331	83	130	91	348	1384	206	112	1067	197
Future Volume (veh/h)	401	193	331	83	130	91	348	1384	206	112	1067	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	401	193	331	83	130	91	348	1384	206	112	1067	197
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	604	394	345	108	221	144	362	1804	900	139	1146	211
Arrive On Green	0.17	0.22	0.22	0.06	0.11	0.11	0.07	0.16	0.16	0.08	0.38	0.38
Sat Flow, veh/h	3510	1805	1579	1810	2089	1362	1810	3610	1609	1810	3043	560
Grp Volume(v), veh/h	401	193	331	83	111	110	348	1384	206	112	632	632
Grp Sat Flow(s),veh/h/ln	1755	1805	1579	1810	1805	1646	1810	1805	1609	1810	1805	1799
Q Serve(g_s), s	11.7	10.3	22.8	5.0	6.4	7.0	21.1	40.3	10.8	6.7	36.9	37.2
Cycle Q Clear(g_c), s	11.7	10.3	22.8	5.0	6.4	7.0	21.1	40.3	10.8	6.7	36.9	37.2
Prop In Lane	1.00		1.00	1.00		0.83	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	604	394	345	108	191	174	362	1804	900	139	680	677
V/C Ratio(X)	0.66	0.49	0.96	0.77	0.58	0.63	0.96	0.77	0.23	0.81	0.93	0.93
Avail Cap(c_a), veh/h	1037	394	345	444	304	277	362	1804	900	171	680	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74	0.22	0.22	0.22
Uniform Delay (d), s/veh	42.6	37.6	42.5	51.0	46.9	47.1	50.9	39.8	21.8	50.0	32.9	33.0
Incr Delay (d2), s/veh	1.3	0.9	38.0	10.7	2.8	3.7	31.0	2.4	0.4	5.1	6.4	6.7
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	5.2	4.6	12.4	2.6	3.0	3.1	13.4	20.1	4.7	3.2	16.9	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	38.6	80.6	61.7	49.6	50.9	81.9	42.2	22.2	55.1	39.3	39.7
LnGrp LOS	D	D	F	E	D	D	F	D	C	E	D	D
Approach Vol, veh/h		925			304			1938			1376	
Approach Delay, s/veh		55.9			53.4			47.2			40.7	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	59.0	10.6	28.0	26.0	45.4	22.9	15.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.4	32.6	27.0	24.0	22.0	21.0	32.5	18.5
Max Q Clear Time (g_c+I1), s	8.7	42.3	7.0	24.8	23.1	39.2	13.7	9.0
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	0.0	1.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	562	109	91	21	122	214	97	540	21	279	588	508
Future Volume (veh/h)	562	109	91	21	122	214	97	540	21	279	588	508
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		0.99
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	562	109	91	21	122	214	97	540	21	279	588	508
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	647	596	456	55	275	245	288	1498	668	362	1863	571
Arrive On Green	0.18	0.31	0.31	0.03	0.15	0.15	0.16	0.42	0.42	0.10	0.36	0.36
Sat Flow, veh/h	3510	1946	1491	1810	1805	1610	1810	3610	1610	3510	5187	1590
Grp Volume(v), veh/h	562	100	100	21	122	214	97	540	21	279	588	508
Grp Sat Flow(s),veh/h/ln	1755	1805	1632	1810	1805	1610	1810	1805	1610	1755	1729	1590
Q Serve(g_s), s	17.1	4.5	5.0	1.3	6.8	14.3	5.2	11.3	0.9	8.5	9.0	33.1
Cycle Q Clear(g_c), s	17.1	4.5	5.0	1.3	6.8	14.3	5.2	11.3	0.9	8.5	9.0	33.1
Prop In Lane	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	647	553	500	55	275	245	288	1498	668	362	1863	571
V/C Ratio(X)	0.87	0.18	0.20	0.39	0.44	0.87	0.34	0.36	0.03	0.77	0.32	0.89
Avail Cap(c_a), veh/h	798	591	534	123	304	271	288	1498	668	830	1863	571
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	0.75	0.75	0.75
Uniform Delay (d), s/veh	43.6	28.0	28.2	52.3	42.4	45.6	41.1	22.1	19.1	48.1	25.5	33.2
Incr Delay (d2), s/veh	8.6	0.2	0.2	4.4	1.1	24.0	0.7	0.7	0.1	2.6	0.3	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	2.0	2.0	0.6	3.1	7.3	2.4	4.9	0.3	3.8	3.7	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	28.2	28.4	56.7	43.5	69.6	41.8	22.8	19.2	50.7	25.8	47.9
LnGrp LOS	D	C	C	E	D	E	D	C	B	D	C	D
Approach Vol, veh/h		762			357			658			1375	
Approach Delay, s/veh		45.9			59.9			25.5			39.0	
Approach LOS		D			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	49.7	7.3	37.7	21.5	43.5	24.3	20.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	24.5	7.5	36.0	11.0	39.5	25.0	18.5
Max Q Clear Time (g_c+I1), s	10.5	13.3	3.3	7.0	7.2	35.1	19.1	16.3
Green Ext Time (p_c), s	0.8	2.8	0.0	1.2	0.1	2.4	1.2	0.4

Intersection Summary			
HCM 6th Ctrl Delay			40.2
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	958	1773	11	9	1368	421	13	160	8	697	114	962
Future Volume (veh/h)	958	1773	11	9	1368	421	13	160	8	697	114	962
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		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	958	1773	11	9	1368	421	13	160	8	697	114	962
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	907	2133	13	348	1254	689	279	332	280	347	404	341
Arrive On Green	0.26	0.40	0.40	0.10	0.24	0.24	0.15	0.17	0.17	0.19	0.21	0.21
Sat Flow, veh/h	3510	5319	33	3510	5187	1573	1810	1900	1602	1810	1900	1603
Grp Volume(v), veh/h	958	1153	631	9	1368	421	13	160	8	697	114	962
Grp Sat Flow(s),veh/h/ln	1755	1729	1894	1755	1729	1573	1810	1900	1602	1810	1900	1603
Q Serve(g_s), s	31.0	35.9	35.9	0.3	29.0	1.1	0.7	9.1	0.5	23.0	6.0	15.0
Cycle Q Clear(g_c), s	31.0	35.9	35.9	0.3	29.0	1.1	0.7	9.1	0.5	23.0	6.0	15.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	907	1387	760	348	1254	689	279	333	280	347	404	341
V/C Ratio(X)	1.06	0.83	0.83	0.03	1.09	0.61	0.05	0.48	0.03	2.01	0.28	2.82
Avail Cap(c_a), veh/h	907	1513	829	348	1254	689	279	333	280	347	404	341
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	44.5	32.3	32.3	48.8	45.5	26.1	43.2	44.6	41.0	48.5	39.6	16.3
Incr Delay (d2), s/veh	45.9	3.8	6.7	0.0	54.1	1.6	0.3	4.9	0.2	464.5	1.7	828.7
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	19.1	15.5	17.6	0.1	18.6	9.4	0.4	4.8	0.2	55.1	3.0	83.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.4	36.1	39.0	48.9	99.6	27.7	43.6	49.5	41.2	513.0	41.3	845.0
LnGrp LOS	F	D	D	D	F	C	D	D	D	F	D	F
Approach Vol, veh/h		2742			1798			181			1773	
Approach Delay, s/veh		55.8			82.5			48.7			662.8	
Approach LOS		E			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	25.0	15.9	52.1	22.5	29.5	35.0	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	23.0	21.0	7.5	52.5	18.5	25.5	31.0	29.0
Max Q Clear Time (g_c+I1), s	25.0	11.1	2.3	37.9	2.7	17.0	33.0	31.0
Green Ext Time (p_c), s	0.0	0.5	0.0	10.2	0.0	3.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	228.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	2422	368	109	1503	123	446	144	107	246	299	397
Future Volume (veh/h)	308	2422	368	109	1503	123	446	144	107	246	299	397
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	308	2422	0	109	1503	123	446	144	107	246	299	397
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	360	2291		122	1609	500	627	329	275	333	350	297
Arrive On Green	0.20	0.44	0.00	0.14	0.62	0.62	0.17	0.17	0.17	0.06	0.06	0.06
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1589	1810	1900	1610
Grp Volume(v), veh/h	308	2422	0	109	1503	123	446	144	107	246	299	397
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1589	1810	1900	1610
Q Serve(g_s), s	19.7	53.0	0.0	7.1	31.4	4.1	13.9	8.1	7.2	16.0	18.7	22.1
Cycle Q Clear(g_c), s	19.7	53.0	0.0	7.1	31.4	4.1	13.9	8.1	7.2	16.0	18.7	22.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	2291		122	1609	500	627	329	275	333	350	297
V/C Ratio(X)	0.86	1.06		0.89	0.93	0.25	0.71	0.44	0.39	0.74	0.85	1.34
Avail Cap(c_a), veh/h	360	2291		122	1656	514	627	329	275	333	350	297
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	0.62	0.62	0.62	1.00	1.00	1.00	0.35	0.35	0.35
Uniform Delay (d), s/veh	46.4	33.5	0.0	51.5	21.7	16.5	46.8	44.4	44.0	53.5	54.8	56.4
Incr Delay (d2), s/veh	18.0	36.1	0.0	36.1	6.8	0.2	6.7	4.2	4.1	3.1	7.3	160.4
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	10.6	29.1	0.0	4.2	9.2	1.4	6.9	4.2	3.1	8.1	10.3	22.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	69.6	0.0	87.6	28.5	16.6	53.5	48.5	48.1	56.6	62.1	216.8
LnGrp LOS	E	F		F	C	B	D	D	D	E	E	F
Approach Vol, veh/h		2730	A		1735			697			942	
Approach Delay, s/veh		69.0			31.4			51.6			125.8	
Approach LOS		E			C			D			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.8	12.1	57.0		26.1	27.9	41.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		20.8	8.1	53.0		22.1	22.8	38.3				
Max Q Clear Time (g_c+I1), s		15.9	9.1	55.0		24.1	21.7	33.4				
Green Ext Time (p_c), s		1.4	0.0	0.0		0.0	0.1	3.8				
Intersection Summary												
HCM 6th Ctrl Delay			65.1									
HCM 6th LOS			E									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	888	177	55	709	57	107	363	39	98	533	74
Future Volume (veh/h)	42	888	177	55	709	57	107	363	39	98	533	74
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		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	42	888	177	55	709	57	107	363	39	98	533	74
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	225	983	196	89	854	69	187	1388	148	122	1231	170
Arrive On Green	0.12	0.33	0.33	0.05	0.25	0.25	0.10	0.42	0.42	0.13	0.77	0.77
Sat Flow, veh/h	1810	2999	598	1810	3380	272	1810	3286	351	1810	3185	441
Grp Volume(v), veh/h	42	534	531	55	378	388	107	198	204	98	301	306
Grp Sat Flow(s),veh/h/ln	1810	1805	1791	1810	1805	1846	1810	1805	1832	1810	1805	1820
Q Serve(g_s), s	2.5	33.9	34.0	3.6	23.8	23.8	6.8	8.6	8.7	6.3	6.8	6.9
Cycle Q Clear(g_c), s	2.5	33.9	34.0	3.6	23.8	23.8	6.8	8.6	8.7	6.3	6.8	6.9
Prop In Lane	1.00		0.33	1.00		0.15	1.00		0.19	1.00		0.24
Lane Grp Cap(c), veh/h	225	592	587	89	456	466	187	763	774	122	698	704
V/C Ratio(X)	0.19	0.90	0.90	0.62	0.83	0.83	0.57	0.26	0.26	0.80	0.43	0.43
Avail Cap(c_a), veh/h	225	632	627	121	638	652	187	763	774	219	698	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.19	0.19	0.19	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	47.1	38.5	38.5	56.0	42.4	42.4	51.3	22.5	22.5	51.1	9.1	9.1
Incr Delay (d2), s/veh	0.1	3.8	3.8	6.9	6.4	6.4	4.2	0.8	0.8	10.8	1.8	1.8
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	1.1	15.4	15.3	1.8	11.4	11.6	3.3	3.8	3.9	3.1	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	42.3	42.3	62.8	48.9	48.8	55.5	23.3	23.3	62.0	10.9	10.9
LnGrp LOS	D	D	D	E	D	D	E	C	C	E	B	B
Approach Vol, veh/h		1107			821			509			705	
Approach Delay, s/veh		42.5			49.8			30.1			18.0	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	54.7	9.9	43.3	16.4	50.4	18.9	34.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.5	39.5	8.0	42.0	7.6	46.4	7.6	42.4
Max Q Clear Time (g_c+I1), s	8.3	10.7	5.6	36.0	8.8	8.9	4.5	25.8
Green Ext Time (p_c), s	0.1	2.5	0.0	3.4	0.0	4.2	0.0	4.5

Intersection Summary		
HCM 6th Ctrl Delay		36.9
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	49	217	60	40	77	117	1279	85	121	1617	145
Future Volume (veh/h)	304	49	217	60	40	77	117	1279	85	121	1617	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	304	49	217	60	40	77	117	1279	85	121	1617	145
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	472	282	249	97	135	119	145	1762	862	284	1894	168
Arrive On Green	0.13	0.16	0.16	0.05	0.07	0.07	0.16	0.98	0.98	0.16	0.57	0.57
Sat Flow, veh/h	3510	1805	1598	1810	1805	1586	1810	3610	1589	1810	3353	298
Grp Volume(v), veh/h	304	49	217	60	40	77	117	1279	85	121	863	899
Grp Sat Flow(s),veh/h/ln	1755	1805	1598	1810	1805	1586	1810	1805	1589	1810	1805	1846
Q Serve(g_s), s	9.0	2.6	14.6	3.6	2.3	5.2	6.9	3.2	0.1	6.6	43.8	45.5
Cycle Q Clear(g_c), s	9.0	2.6	14.6	3.6	2.3	5.2	6.9	3.2	0.1	6.6	43.8	45.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	472	282	249	97	135	119	145	1762	862	284	1020	1043
V/C Ratio(X)	0.64	0.17	0.87	0.62	0.30	0.65	0.81	0.73	0.10	0.43	0.85	0.86
Avail Cap(c_a), veh/h	472	331	293	171	325	285	345	1762	862	284	1020	1043
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90	0.09	0.09	0.09
Uniform Delay (d), s/veh	45.1	40.3	45.3	51.0	48.1	49.5	45.4	0.7	0.2	41.9	19.9	20.3
Incr Delay (d2), s/veh	3.0	0.3	21.1	6.3	1.2	5.8	9.1	2.4	0.2	0.1	0.9	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	4.1	1.2	7.2	1.8	1.1	2.2	3.2	1.0	0.1	3.0	17.5	18.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.1	40.6	66.5	57.3	49.3	55.3	54.5	3.1	0.4	42.0	20.8	21.3
LnGrp LOS	D	D	E	E	D	E	D	A	A	D	C	C
Approach Vol, veh/h		570			177			1481			1883	
Approach Delay, s/veh		54.4			54.6			7.0			22.4	
Approach LOS		D			D			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	57.7	9.9	21.2	12.8	66.2	18.8	12.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.7	53.7	10.4	20.2	21.0	42.4	10.8	19.8
Max Q Clear Time (g_c+I1), s	8.6	5.2	5.6	16.6	8.9	47.5	11.0	7.2
Green Ext Time (p_c), s	0.0	14.2	0.0	0.5	0.2	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	743	198	233	84	147	344	195	595	99	266	669	562
Future Volume (veh/h)	743	198	233	84	147	344	195	595	99	266	669	562
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	743	198	233	84	147	344	195	595	99	266	669	562
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	809	653	582	108	345	307	307	1208	539	346	1367	424
Arrive On Green	0.23	0.36	0.36	0.06	0.19	0.19	0.17	0.33	0.33	0.10	0.26	0.26
Sat Flow, veh/h	3510	1805	1607	1810	1805	1610	1810	3610	1610	3510	5187	1608
Grp Volume(v), veh/h	743	198	233	84	147	344	195	595	99	266	669	562
Grp Sat Flow(s),veh/h/ln	1755	1805	1607	1810	1805	1610	1810	1805	1610	1755	1729	1608
Q Serve(g_s), s	22.7	8.7	11.9	5.0	7.9	21.0	11.0	14.4	4.8	8.1	12.0	29.0
Cycle Q Clear(g_c), s	22.7	8.7	11.9	5.0	7.9	21.0	11.0	14.4	4.8	8.1	12.0	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	809	653	582	108	345	307	307	1208	539	346	1367	424
V/C Ratio(X)	0.92	0.30	0.40	0.78	0.43	1.12	0.64	0.49	0.18	0.77	0.49	1.33
Avail Cap(c_a), veh/h	846	653	582	194	345	307	307	1208	539	734	1367	424
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	0.69	0.69	0.69
Uniform Delay (d), s/veh	41.3	25.2	26.2	51.0	39.2	44.5	42.5	29.2	25.9	48.3	34.2	40.5
Incr Delay (d2), s/veh	14.6	0.3	0.4	11.4	0.8	87.3	4.3	1.4	0.8	2.5	0.9	157.5
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	11.4	3.7	4.6	2.6	3.6	15.7	5.3	6.4	1.9	3.7	5.1	29.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	25.4	26.6	62.4	40.0	131.8	46.8	30.6	26.7	50.9	35.1	198.0
LnGrp LOS	E	C	C	E	D	F	D	C	C	D	D	F
Approach Vol, veh/h		1174			575			889			1497	
Approach Delay, s/veh		44.9			98.2			33.7			99.1	
Approach LOS		D			F			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	40.8	10.6	43.8	22.7	33.0	29.3	25.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	23.0	23.5	11.8	35.7	17.5	29.0	26.5	21.0
Max Q Clear Time (g_c+I1), s	10.1	16.4	7.0	13.9	13.0	31.0	24.7	23.0
Green Ext Time (p_c), s	0.7	2.5	0.1	2.7	0.2	0.0	0.6	0.0

Intersection Summary		
HCM 6th Ctrl Delay		69.5
HCM 6th LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	743	889	17	7	1830	403	23	337	17	299	63	858
Future Volume (veh/h)	743	889	17	7	1830	403	23	337	17	299	63	858
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	743	889	17	7	1830	403	23	337	17	299	63	858
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	819	2904	55	43	1729	671	57	412	349	151	511	432
Arrive On Green	0.23	0.55	0.55	0.01	0.33	0.33	0.03	0.22	0.22	0.08	0.27	0.27
Sat Flow, veh/h	3510	5238	100	3510	5187	1610	1810	1900	1608	1810	1900	1608
Grp Volume(v), veh/h	743	587	319	7	1830	403	23	337	17	299	63	858
Grp Sat Flow(s),veh/h/ln	1755	1729	1881	1755	1729	1610	1810	1900	1608	1810	1900	1608
Q Serve(g_s), s	24.7	10.9	10.9	0.2	40.0	10.7	1.5	20.3	1.0	10.0	3.0	19.0
Cycle Q Clear(g_c), s	24.7	10.9	10.9	0.2	40.0	10.7	1.5	20.3	1.0	10.0	3.0	19.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	819	1917	1043	43	1729	671	57	412	349	151	511	432
V/C Ratio(X)	0.91	0.31	0.31	0.16	1.06	0.60	0.41	0.82	0.05	1.98	0.12	1.98
Avail Cap(c_a), veh/h	907	1917	1043	219	1729	671	106	412	349	151	511	432
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	44.7	14.3	14.3	58.7	40.0	11.4	57.0	44.7	37.2	55.0	33.2	15.3
Incr Delay (d2), s/veh	12.0	0.1	0.2	1.8	39.0	1.5	4.6	16.4	0.3	465.2	0.5	451.1
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	12.1	4.3	4.7	0.1	23.0	3.5	0.8	11.4	0.4	24.0	1.5	61.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	14.4	14.5	60.5	79.0	12.9	61.7	61.1	37.5	520.2	33.7	466.4
LnGrp LOS	E	B	B	E	F	B	E	E	D	F	C	F
Approach Vol, veh/h		1649			2240			377			1220	
Approach Delay, s/veh		33.5			67.0			60.1			457.2	
Approach LOS		C			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	30.0	5.5	70.5	7.7	36.3	32.0	44.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	23.0	7.5	63.5	7.0	26.0	31.0	40.0
Max Q Clear Time (g_c+I1), s	12.0	22.3	2.2	12.9	3.5	21.0	26.7	42.0
Green Ext Time (p_c), s	0.0	0.2	0.0	7.3	0.0	2.0	1.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	143.3
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1248	339	95	2350	81	408	92	126	76	78	159
Future Volume (veh/h)	183	1248	339	95	2350	81	408	92	126	76	78	159
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	183	1248	0	95	2350	81	408	92	126	76	78	159
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	190	1654		427	2334	725	707	371	314	211	221	187
Arrive On Green	0.11	0.32	0.00	0.31	0.60	0.60	0.20	0.20	0.20	0.19	0.19	0.19
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	183	1248	0	95	2350	81	408	92	126	76	78	159
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	12.1	25.9	0.0	4.6	54.0	2.6	12.3	4.9	8.2	4.4	4.3	11.4
Cycle Q Clear(g_c), s	12.1	25.9	0.0	4.6	54.0	2.6	12.3	4.9	8.2	4.4	4.3	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	1654		427	2334	725	707	371	314	211	221	187
V/C Ratio(X)	0.96	0.75		0.22	1.01	0.11	0.58	0.25	0.40	0.36	0.35	0.85
Avail Cap(c_a), veh/h	190	2326		427	2334	725	707	371	314	279	293	248
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	0.00	0.47	0.47	0.47	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	53.5	36.6	0.0	33.0	24.1	13.8	43.8	40.8	42.1	44.5	44.4	47.3
Incr Delay (d2), s/veh	54.5	0.9	0.0	0.1	14.4	0.0	3.4	1.6	3.8	0.9	0.9	17.0
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	8.4	11.0	0.0	2.0	21.6	1.0	5.8	2.5	3.6	2.0	2.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.9	37.6	0.0	33.2	38.5	13.8	47.2	42.4	45.9	45.4	45.3	64.3
LnGrp LOS	F	D		C	F	B	D	D	D	D	D	E
Approach Vol, veh/h		1431	A		2526			626			313	
Approach Delay, s/veh		46.6			37.5			46.2			55.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.4	32.3	42.3		18.0	16.6	58.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.9	12.8	53.8		18.5	12.6	54.0				
Max Q Clear Time (g_c+I1), s		14.3	6.6	27.9		13.4	14.1	56.0				
Green Ext Time (p_c), s		1.1	0.1	10.4		0.5	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		42.4
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	737	139	31	875	52	212	450	30	65	270	108
Future Volume (veh/h)	103	737	139	31	875	52	212	450	30	65	270	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	103	737	139	31	875	52	212	450	30	65	270	108
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	129	993	187	68	1022	61	408	1539	102	93	697	272
Arrive On Green	0.07	0.33	0.33	0.04	0.30	0.30	0.23	0.45	0.45	0.10	0.55	0.55
Sat Flow, veh/h	1810	3021	570	1810	3461	206	1810	3431	228	1810	2536	989
Grp Volume(v), veh/h	103	440	436	31	456	471	212	236	244	65	190	188
Grp Sat Flow(s),veh/h/ln	1810	1805	1786	1810	1805	1862	1810	1805	1854	1810	1805	1719
Q Serve(g_s), s	6.7	26.0	26.0	2.0	28.6	28.6	12.3	10.0	10.0	4.2	7.2	7.5
Cycle Q Clear(g_c), s	6.7	26.0	26.0	2.0	28.6	28.6	12.3	10.0	10.0	4.2	7.2	7.5
Prop In Lane	1.00		0.32	1.00		0.11	1.00		0.12	1.00		0.57
Lane Grp Cap(c), veh/h	129	593	587	68	533	550	408	810	832	93	496	473
V/C Ratio(X)	0.80	0.74	0.74	0.46	0.86	0.86	0.52	0.29	0.29	0.70	0.38	0.40
Avail Cap(c_a), veh/h	226	752	744	121	647	667	408	810	832	166	496	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.56	0.56	0.56	0.79	0.79	0.79	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	54.9	35.7	35.8	56.5	39.9	39.9	40.8	21.0	21.0	52.9	21.2	21.3
Incr Delay (d2), s/veh	6.3	1.7	1.7	3.7	7.7	7.5	1.2	0.9	0.9	8.8	2.2	2.4
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	3.3	11.6	11.5	1.0	13.7	14.1	5.6	4.4	4.6	2.1	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	37.4	37.5	60.3	47.6	47.4	42.0	21.9	21.9	61.6	23.4	23.7
LnGrp LOS	E	D	D	E	D	D	D	C	C	E	C	C
Approach Vol, veh/h		979			958			692			443	
Approach Delay, s/veh		39.9			47.9			28.0			29.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	57.8	8.5	43.5	31.0	37.0	12.5	39.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	35.0	8.0	50.0	13.0	33.0	15.0	43.0
Max Q Clear Time (g_c+I1), s	6.2	12.0	4.0	28.0	14.3	9.5	8.7	30.6
Green Ext Time (p_c), s	0.0	2.9	0.0	5.9	0.0	2.3	0.1	4.8

Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	194	333	83	131	92	354	1414	207	116	1104	207
Future Volume (veh/h)	413	194	333	83	131	92	354	1414	207	116	1104	207
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	413	194	333	83	131	92	354	1414	207	116	1104	207
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	603	394	345	108	222	145	362	1795	897	143	1143	213
Arrive On Green	0.17	0.22	0.22	0.06	0.11	0.11	0.07	0.16	0.16	0.08	0.38	0.38
Sat Flow, veh/h	3510	1805	1579	1810	2086	1364	1810	3610	1609	1810	3035	567
Grp Volume(v), veh/h	413	194	333	83	112	111	354	1414	207	116	655	656
Grp Sat Flow(s),veh/h/ln	1755	1805	1579	1810	1805	1645	1810	1805	1609	1810	1805	1797
Q Serve(g_s), s	12.1	10.4	23.0	5.0	6.5	7.1	21.5	41.4	10.9	6.9	39.0	39.4
Cycle Q Clear(g_c), s	12.1	10.4	23.0	5.0	6.5	7.1	21.5	41.4	10.9	6.9	39.0	39.4
Prop In Lane	1.00		1.00	1.00		0.83	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	603	394	345	108	192	175	362	1795	897	143	680	677
V/C Ratio(X)	0.69	0.49	0.97	0.77	0.58	0.63	0.98	0.79	0.23	0.81	0.96	0.97
Avail Cap(c_a), veh/h	1037	394	345	444	304	277	362	1795	897	171	680	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73	0.18	0.18	0.18
Uniform Delay (d), s/veh	42.8	37.7	42.6	51.0	46.8	47.1	51.1	40.4	21.9	49.8	33.5	33.7
Incr Delay (d2), s/veh	1.4	1.0	39.5	10.7	2.8	3.8	34.7	2.6	0.4	4.5	8.3	9.1
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	5.4	4.7	12.6	2.6	3.1	3.1	13.9	20.6	4.8	3.3	18.2	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	38.6	82.1	61.7	49.6	50.9	85.8	43.0	22.4	54.3	41.9	42.8
LnGrp LOS	D	D	F	E	D	D	F	D	C	D	D	D
Approach Vol, veh/h		940			306			1975			1427	
Approach Delay, s/veh		56.4			53.4			48.5			43.3	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	58.7	10.6	28.0	26.0	45.4	22.9	15.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.4	32.6	27.0	24.0	22.0	21.0	32.5	18.5
Max Q Clear Time (g_c+I1), s	8.9	43.4	7.0	25.0	23.5	41.4	14.1	9.1
Green Ext Time (p_c), s	0.0	0.0	0.2	0.0	0.0	0.0	1.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	48.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	597	116	94	22	133	230	102	544	21	295	598	546
Future Volume (veh/h)	597	116	94	22	133	230	102	544	21	295	598	546
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		0.99
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	597	116	94	22	133	230	102	544	21	295	598	546
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	679	635	474	56	290	258	256	1418	632	379	1863	571
Arrive On Green	0.19	0.32	0.32	0.03	0.16	0.16	0.14	0.39	0.39	0.11	0.36	0.36
Sat Flow, veh/h	3510	1970	1471	1810	1805	1610	1810	3610	1610	3510	5187	1590
Grp Volume(v), veh/h	597	105	105	22	133	230	102	544	21	295	598	546
Grp Sat Flow(s),veh/h/ln	1755	1805	1635	1810	1805	1610	1810	1805	1610	1755	1729	1590
Q Serve(g_s), s	18.2	4.6	5.1	1.3	7.3	15.4	5.6	11.9	0.9	9.0	9.2	36.9
Cycle Q Clear(g_c), s	18.2	4.6	5.1	1.3	7.3	15.4	5.6	11.9	0.9	9.0	9.2	36.9
Prop In Lane	1.00		0.90	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	679	582	528	56	290	258	256	1418	632	379	1863	571
V/C Ratio(X)	0.88	0.18	0.20	0.39	0.46	0.89	0.40	0.38	0.03	0.78	0.32	0.96
Avail Cap(c_a), veh/h	798	591	535	123	304	271	256	1418	632	830	1863	571
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	0.71	0.71	0.71
Uniform Delay (d), s/veh	43.1	26.8	27.0	52.3	41.9	45.2	42.9	23.9	20.5	47.8	25.5	34.4
Incr Delay (d2), s/veh	9.9	0.1	0.2	4.3	1.1	27.7	1.0	0.8	0.1	2.5	0.3	22.7
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	8.8	2.0	2.0	0.7	3.4	8.1	2.6	5.2	0.3	4.1	3.8	17.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	27.0	27.1	56.6	43.0	72.9	43.9	24.7	20.6	50.3	25.9	57.1
LnGrp LOS	D	C	C	E	D	E	D	C	C	D	C	E
Approach Vol, veh/h		807			385			667			1439	
Approach Delay, s/veh		46.3			61.7			27.5			42.7	
Approach LOS		D			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	47.2	7.4	39.5	19.6	43.5	25.3	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	24.5	7.5	36.0	11.0	39.5	25.0	18.5
Max Q Clear Time (g_c+I1), s	11.0	13.9	3.3	7.1	7.6	38.9	20.2	17.4
Green Ext Time (p_c), s	0.9	2.7	0.0	1.3	0.1	0.4	1.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	42.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1037	1827	11	9	1414	447	13	170	8	749	122	1047
Future Volume (veh/h)	1037	1827	11	9	1414	447	13	170	8	749	122	1047
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		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1037	1827	11	9	1414	447	13	170	8	749	122	1047
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	907	2169	13	324	1254	689	279	332	280	347	404	341
Arrive On Green	0.26	0.41	0.41	0.09	0.24	0.24	0.15	0.17	0.17	0.19	0.21	0.21
Sat Flow, veh/h	3510	5320	32	3510	5187	1573	1810	1900	1602	1810	1900	1603
Grp Volume(v), veh/h	1037	1187	651	9	1414	447	13	170	8	749	122	1047
Grp Sat Flow(s),veh/h/ln	1755	1729	1894	1755	1729	1573	1810	1900	1602	1810	1900	1603
Q Serve(g_s), s	31.0	37.2	37.2	0.3	29.0	3.2	0.7	9.7	0.5	23.0	6.5	15.0
Cycle Q Clear(g_c), s	31.0	37.2	37.2	0.3	29.0	3.2	0.7	9.7	0.5	23.0	6.5	15.0
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	907	1409	772	324	1254	689	279	333	280	347	404	341
V/C Ratio(X)	1.14	0.84	0.84	0.03	1.13	0.65	0.05	0.51	0.03	2.16	0.30	3.07
Avail Cap(c_a), veh/h	907	1513	829	324	1254	689	279	333	280	347	404	341
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	44.5	32.1	32.1	49.6	45.5	26.7	43.2	44.9	41.0	48.5	39.8	16.3
Incr Delay (d2), s/veh	77.7	4.3	7.5	0.0	68.3	2.1	0.3	5.5	0.2	531.3	1.9	940.6
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	23.1	16.1	18.3	0.1	20.3	10.3	0.4	5.1	0.2	61.5	3.3	94.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.2	36.3	39.6	49.6	113.8	28.8	43.6	50.4	41.2	579.8	41.7	956.9
LnGrp LOS	F	D	D	D	F	C	D	D	D	F	D	F
Approach Vol, veh/h		2875			1870			191			1918	
Approach Delay, s/veh		68.0			93.2			49.5			751.4	
Approach LOS		E			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	25.0	15.1	52.9	22.5	29.5	35.0	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	23.0	21.0	7.5	52.5	18.5	25.5	31.0	29.0
Max Q Clear Time (g_c+I1), s	25.0	11.7	2.3	39.2	2.7	17.0	33.0	31.0
Green Ext Time (p_c), s	0.0	0.6	0.0	9.7	0.0	4.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	265.6
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	2493	402	118	1527	126	470	152	108	250	327	420
Future Volume (veh/h)	328	2493	402	118	1527	126	470	152	108	250	327	420
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		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	328	2493	0	118	1527	126	470	152	108	250	327	420
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	356	2291		122	1621	503	627	329	275	333	350	297
Arrive On Green	0.20	0.44	0.00	0.14	0.62	0.62	0.17	0.17	0.17	0.06	0.06	0.06
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	3619	1900	1589	1810	1900	1610
Grp Volume(v), veh/h	328	2493	0	118	1527	126	470	152	108	250	327	420
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1810	1900	1589	1810	1900	1610
Q Serve(g_s), s	21.3	53.0	0.0	7.8	32.2	4.2	14.8	8.6	7.2	16.3	20.6	22.1
Cycle Q Clear(g_c), s	21.3	53.0	0.0	7.8	32.2	4.2	14.8	8.6	7.2	16.3	20.6	22.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	2291		122	1621	503	627	329	275	333	350	297
V/C Ratio(X)	0.92	1.09		0.97	0.94	0.25	0.75	0.46	0.39	0.75	0.93	1.42
Avail Cap(c_a), veh/h	356	2291		122	1656	514	627	329	275	333	350	297
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	0.60	0.60	0.60	1.00	1.00	1.00	0.26	0.26	0.26
Uniform Delay (d), s/veh	47.3	33.5	0.0	51.8	21.5	16.3	47.1	44.6	44.0	53.6	55.6	56.4
Incr Delay (d2), s/veh	28.7	47.8	0.0	53.2	7.4	0.2	8.0	4.6	4.2	2.5	12.1	192.6
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	12.4	31.6	0.0	5.1	9.4	1.5	7.4	4.5	3.2	8.2	11.7	25.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.0	81.3	0.0	104.9	28.9	16.4	55.1	49.2	48.1	56.1	67.8	248.9
LnGrp LOS	E	F		F	C	B	E	D	D	E	E	F
Approach Vol, veh/h		2821	A		1771			730			997	
Approach Delay, s/veh		80.6			33.1			52.9			141.2	
Approach LOS		F			C			D			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.8	12.1	57.0		26.1	27.6	41.5				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		20.8	8.1	53.0		22.1	22.8	38.3				
Max Q Clear Time (g_c+I1), s		16.8	9.8	55.0		24.1	23.3	34.2				
Green Ext Time (p_c), s		1.2	0.0	0.0		0.0	0.0	3.3				

Intersection Summary		
HCM 6th Ctrl Delay		73.7
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	904	177	57	717	59	107	377	41	105	560	76
Future Volume (veh/h)	42	904	177	57	717	59	107	377	41	105	560	76
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		0.98	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	42	904	177	57	717	59	107	377	41	105	560	76
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	228	995	195	90	857	71	180	1361	147	129	1235	167
Arrive On Green	0.13	0.33	0.33	0.05	0.25	0.25	0.10	0.41	0.41	0.14	0.77	0.77
Sat Flow, veh/h	1810	3009	589	1810	3373	277	1810	3281	355	1810	3194	432
Grp Volume(v), veh/h	42	542	539	57	384	392	107	206	212	105	316	320
Grp Sat Flow(s),veh/h/ln	1810	1805	1793	1810	1805	1845	1810	1805	1831	1810	1805	1822
Q Serve(g_s), s	2.5	34.5	34.5	3.7	24.1	24.2	6.8	9.1	9.2	6.8	7.3	7.4
Cycle Q Clear(g_c), s	2.5	34.5	34.5	3.7	24.1	24.2	6.8	9.1	9.2	6.8	7.3	7.4
Prop In Lane	1.00		0.33	1.00		0.15	1.00		0.19	1.00		0.24
Lane Grp Cap(c), veh/h	228	597	593	90	459	469	180	749	759	129	698	704
V/C Ratio(X)	0.18	0.91	0.91	0.63	0.84	0.84	0.59	0.28	0.28	0.81	0.45	0.45
Avail Cap(c_a), veh/h	228	632	627	121	617	630	180	749	759	219	698	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.18	0.18	0.18	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	46.9	38.4	38.4	56.0	42.4	42.4	51.7	23.2	23.2	50.6	9.2	9.2
Incr Delay (d2), s/veh	0.1	3.8	3.9	7.2	7.4	7.3	5.1	0.9	0.9	10.6	1.9	1.9
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	15.7	15.6	1.9	11.6	11.9	3.3	4.1	4.2	3.3	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	42.2	42.3	63.2	49.8	49.7	56.8	24.1	24.1	61.2	11.1	11.1
LnGrp LOS	D	D	D	E	D	D	E	C	C	E	B	B
Approach Vol, veh/h		1123			833			525			741	
Approach Delay, s/veh		42.4			50.7			30.8			18.2	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	53.8	10.0	43.7	16.0	50.4	19.1	34.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.5	39.5	8.0	42.0	7.6	46.4	9.0	41.0
Max Q Clear Time (g_c+I1), s	8.8	11.2	5.7	36.5	8.8	9.4	4.5	26.2
Green Ext Time (p_c), s	0.1	2.6	0.0	3.2	0.0	4.4	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	49	219	60	40	78	120	1321	85	123	1656	153
Future Volume (veh/h)	319	49	219	60	40	78	120	1321	85	123	1656	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	319	49	219	60	40	78	120	1321	85	123	1656	153
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	474	283	251	97	136	120	148	1762	862	282	1880	172
Arrive On Green	0.13	0.16	0.16	0.05	0.08	0.08	0.16	0.98	0.98	0.16	0.56	0.56
Sat Flow, veh/h	3510	1805	1598	1810	1805	1586	1810	3610	1589	1810	3344	305
Grp Volume(v), veh/h	319	49	219	60	40	78	120	1321	85	123	885	924
Grp Sat Flow(s),veh/h/ln	1755	1805	1598	1810	1805	1586	1810	1805	1589	1810	1805	1844
Q Serve(g_s), s	9.5	2.6	14.7	3.6	2.3	5.3	7.0	3.5	0.1	6.8	46.3	48.4
Cycle Q Clear(g_c), s	9.5	2.6	14.7	3.6	2.3	5.3	7.0	3.5	0.1	6.8	46.3	48.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	474	283	251	97	136	120	148	1762	862	282	1015	1037
V/C Ratio(X)	0.67	0.17	0.87	0.62	0.29	0.65	0.81	0.75	0.10	0.44	0.87	0.89
Avail Cap(c_a), veh/h	474	331	293	171	325	286	345	1762	862	282	1015	1037
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.09	0.09	0.09
Uniform Delay (d), s/veh	45.3	40.2	45.3	51.0	48.1	49.4	45.2	0.7	0.2	42.0	20.7	21.1
Incr Delay (d2), s/veh	3.7	0.3	21.5	6.3	1.2	5.8	9.0	2.7	0.2	0.1	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	4.4	1.2	7.3	1.8	1.1	2.3	3.3	1.0	0.1	3.0	18.5	19.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	40.5	66.8	57.3	49.2	55.3	54.2	3.4	0.4	42.1	21.8	22.4
LnGrp LOS	D	D	E	E	D	E	D	A	A	D	C	C
Approach Vol, veh/h		587			178			1526			1932	
Approach Delay, s/veh		54.9			54.6			7.2			23.4	
Approach LOS		D			D			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	57.7	9.9	21.3	13.0	65.8	18.8	12.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.7	53.7	10.4	20.2	21.0	42.4	10.8	19.8
Max Q Clear Time (g_c+I1), s	8.8	5.5	5.6	16.7	9.0	50.4	11.5	7.3
Green Ext Time (p_c), s	0.0	15.0	0.0	0.5	0.2	0.0	0.0	0.4

Intersection Summary			
HCM 6th Ctrl Delay			23.2
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	789	215	244	89	159	368	205	608	107	287	679	596
Future Volume (veh/h)	789	215	244	89	159	368	205	608	107	287	679	596
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	789	215	244	89	159	368	205	608	107	287	679	596
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	841	664	591	114	345	307	290	1152	514	368	1367	424
Arrive On Green	0.24	0.37	0.37	0.06	0.19	0.19	0.16	0.32	0.32	0.10	0.26	0.26
Sat Flow, veh/h	3510	1805	1608	1810	1805	1610	1810	3610	1610	3510	5187	1608
Grp Volume(v), veh/h	789	215	244	89	159	368	205	608	107	287	679	596
Grp Sat Flow(s),veh/h/ln	1755	1805	1608	1810	1805	1610	1810	1805	1610	1755	1729	1608
Q Serve(g_s), s	24.3	9.4	12.4	5.3	8.6	21.0	11.8	15.2	5.3	8.8	12.2	29.0
Cycle Q Clear(g_c), s	24.3	9.4	12.4	5.3	8.6	21.0	11.8	15.2	5.3	8.8	12.2	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	841	664	591	114	345	307	290	1152	514	368	1367	424
V/C Ratio(X)	0.94	0.32	0.41	0.78	0.46	1.20	0.71	0.53	0.21	0.78	0.50	1.41
Avail Cap(c_a), veh/h	846	664	591	194	345	307	290	1152	514	734	1367	424
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	0.65	0.65	0.65
Uniform Delay (d), s/veh	41.0	25.0	25.9	50.8	39.5	44.5	43.7	30.7	27.3	48.0	34.3	40.5
Incr Delay (d2), s/veh	17.7	0.3	0.5	11.1	1.0	115.9	7.6	1.7	0.9	2.4	0.8	191.6
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	12.4	4.1	4.8	2.8	3.9	18.2	5.9	6.8	2.2	3.9	5.2	33.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	25.2	26.4	61.9	40.4	160.4	51.3	32.4	28.2	50.3	35.2	232.1
LnGrp LOS	E	C	C	E	D	F	D	C	C	D	D	F
Approach Vol, veh/h		1248			616			920			1562	
Approach Delay, s/veh		46.7			115.2			36.1			113.1	
Approach LOS		D			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	39.1	10.9	44.4	21.6	33.0	30.4	25.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	23.0	23.5	11.8	35.7	17.5	29.0	26.5	21.0
Max Q Clear Time (g_c+I1), s	10.8	17.2	7.3	14.4	13.8	31.0	26.3	23.0
Green Ext Time (p_c), s	0.8	2.3	0.1	2.9	0.2	0.0	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	78.0
HCM 6th LOS	E

ATTACHMENT E2

Traffic Impact Analysis (TIA) Errata Pages

TRAFFIC IMPACT ANALYSIS

KAISER PERMANENTE MORENO VALLEY MEDICAL CENTER MASTER PLAN PROJECT

CITY OF MORENO VALLEY

RIVERSIDE COUNTY, CALIFORNIA

LSA

October 2019

TRAFFIC IMPACT ANALYSIS

KAISER PERMANENTE MORENO VALLEY MEDICAL CENTER MASTER PLAN PROJECT

CITY OF MORENO VALLEY

RIVERSIDE COUNTY, CALIFORNIA

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Project No. KSP1702

October 2019

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1.0 INTRODUCTION

The Traffic Impact Analysis (TIA) has been prepared for the proposed Kaiser Permanente Moreno Valley Medical Center Master Plan Project (project) to be located east of Interstate 215 (I-215) and south of State Route 60 (SR-60) at 27300 Iris Avenue in the City of Moreno Valley (City). Figure 1-1 illustrates the regional and project location. (Figures and tables are located at the end of each chapter.)

This report is intended to satisfy the requirements established by the City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide* dated August 2007, the Riverside County Transportation Department *Traffic Impact Analysis Preparation Guide*, dated April 2008, as well as the requirements for the disclosure of potential impacts and mitigation measures pursuant to the California Environmental Quality Act (CEQA). The scope of work for this TIA, including trip generation, trip distribution, study area, and analysis methodologies, has been approved by City staff via the Scoping Agreement process. A copy of the Scoping Agreement is included as Appendix A.

This study examines traffic operations in the vicinity of the proposed project under the following 10 scenarios:

- Existing Conditions;
- Existing with Project Conditions;
- Phase I Project Completion Year (2023) without Project Conditions;
- Phase I Project Completion Year (2023) with Project Conditions;
- Phase II Project Completion Year (2032) without Project Conditions;
- Phase II Project Completion Year (2032) with Project Conditions;
- Phase III Project Completion Year (2038) without Project Conditions;
- Phase III Project Completion Year (2038) with Project Conditions (Project Build-out);
- General Plan Build-out (2040) without Project Conditions; and
- General Plan Build-out (2040) with Project Conditions (Project Build-out).

Traffic conditions were examined for the weekday daily, a.m., and p.m. peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 and 9:00 a.m. The p.m. peak hour is the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m. Roadway segments were analyzed using daily volume counts and comparisons were made to the daily service volume standards provided by the Cities of Moreno Valley and Perris.

1.1 PROJECT DESCRIPTION

The current project site includes a 130,000-square foot (sf) 100-bed hospital, along with two medical office buildings and education trailers totaling approximately 85,000 sf. The project will be replacing and adding onto existing uses and has been proposed to be built in three phases. Phase I consists of the demolition of the Iris Medical Office Building (MOB) 1 and Education Trailers medical office buildings (10,500 sf) and the construction of a 95,000 sf Diagnostics and Treatment (D&T) Expansion (hospital) and 22,000 sf Energy Center. Phase II consists of the construction of a 65,000 sf medical office building (MOB 3), 380,000 sf expansion of the D&T center, patient towers North and East, and 8,000 sf Energy Center. Phase III consists of the demolition of 130,000 sf of the existing hospital and construction of a 95,000 sf medical office building (MOB 4) and a 375,000 sf expansion of the D&T center along with patient towers South and West. Table 1-A summarizes each of the proposed phases.

Phase I of the project is planned for completion in 2023 (typical 5 years from existing per discussion with City of Moreno Valley staff). Phase II of the project is planned for completion in Year 2032. Phase III of the project is planned for completion in Year 2038. Figures 1-2, 1-3, and 1-4 illustrate the conceptual completion site plans for Phases I, II, and III of the proposed project, respectively.

As shown in the site plans, access to the project would be provided via the three existing driveways along Iris Avenue. The existing signalized driveway (Driveway 2) will continue to operate as a full-access driveway. The driveway farthest west (Driveway 1) would remain operating as right-in/right-out (RIRO) only. Phase I proposes the modification of the driveway farthest east (Driveway 3) to operate as a RIRO only driveway. Based on comments from the City, the project applicant can also coordinate with the adjacent property owner(s) to obtain reciprocal access agreement for an additional project access to Oliver Street. For purposes of this analysis, no access has been considered to Oliver Street from the project.

1.2 STUDY AREA

Based on the City's TIA guidelines, the TIA is required to analyze all intersections of Collector or higher classification streets where the project will contribute 50 or more peak hour trips or intersections identified by City staff for analysis. All study intersections were analyzed during the a.m. and p.m. peak hours.

1.2.1 Study Intersections

Per the Scoping Agreement (Appendix A), intersections considered for this study and their jurisdictions are as follows:

1. Interstate 215 (I-215) Southbound Ramps/Alessandro Boulevard (Caltrans);
2. I-215 Northbound Ramps/Alessandro Boulevard (Caltrans);
3. I-215 Southbound Ramps/Cactus Avenue (Caltrans);
4. I-215 Northbound Ramps/Cactus Avenue (Caltrans);
5. I-215 Northbound Ramps-Old 215 Frontage Road/Cactus Avenue (Caltrans);
6. Day Street/Alessandro Boulevard (Moreno Valley);
7. Elsworth Street/Alessandro Boulevard (Moreno Valley);

8. Elsworth Street/Cactus Avenue (Moreno Valley);
9. Frederick Street/Alessandro Boulevard (Moreno Valley);
10. Frederick Street/Cactus Avenue (Moreno Valley);
11. Graham Street/Alessandro Boulevard (Moreno Valley);
12. Graham Street-Riverside Drive/Cactus Avenue (Moreno Valley);
13. Heacock Street/Alessandro Boulevard (Moreno Valley);
14. Heacock Street/Cactus Avenue (Moreno Valley);
15. Heacock Street/Iris Avenue (Moreno Valley);
16. Indian Street/Alessandro Boulevard (Moreno Valley);
17. Indian Street/Cactus Avenue (Moreno Valley);
18. Indian Street/Iris Avenue(Moreno Valley);
19. Perris Boulevard/Alessandro Boulevard (Moreno Valley);
20. Perris Boulevard/Cactus Avenue (Moreno Valley);
21. Perris Boulevard/Iris Avenue (Moreno Valley);
22. Perris Boulevard/Krameria Avenue (Moreno Valley);
23. Perris Boulevard/San Michele Road (Moreno Valley);
24. Perris Boulevard/Nandina Avenue (Moreno Valley);
25. Perris Boulevard/Harley Knox Boulevard (Perris);
26. Kitching Street/Alessandro Boulevard (Moreno Valley);
27. Kitching Street/Cactus Avenue (Moreno Valley);
28. Kitching Street/Iris Avenue (Moreno Valley);
29. Lasselle Street/Alessandro Boulevard (Moreno Valley);
30. Lasselle Street/Cactus Avenue (Moreno Valley);
31. Lasselle Street/John F Kennedy Drive (Moreno Valley);
32. Lasselle Street/Iris Avenue (Moreno Valley);
33. Lasselle Street/Krameria Avenue (Moreno Valley);
34. Lasselle Street/Via Xavier Lane (Moreno Valley);
35. Lasselle Street/Lasselle Sports Park-Rojo Tierra (Moreno Valley);
36. Lasselle Street/Cremello Way-Avenida De Plata (Moreno Valley);
37. Lasselle Street/Avenida Classica-Kentucky Derby Drive (Moreno Valley);
38. Lasselle Street/Via De Anza-Rancho Verde High School (Moreno Valley);

39. Evans Road/Ramona Expressway (Perris);
40. Camino Flores/Iris Avenue (Moreno Valley);
41. Coachlight Court-Avenida De Circo/Iris Avenue (Moreno Valley);
42. Grande Vista Drive/Iris Avenue (Moreno Valley);
43. Nason Street/Elder Avenue-State Route 60 (SR-60) Westbound Ramps (Caltrans);
44. Nason Street/SR-60 Eastbound Ramps (Caltrans);
45. Nason Street/Eucalyptus Avenue (Moreno Valley);
46. Nason Street/Cottonwood Avenue (Moreno Valley);
47. Nason Street/Alessandro Boulevard (Moreno Valley);
48. Nason Street/Cactus Avenue (Moreno Valley);
49. Nason Street-Hillrose Lane/Iris Avenue (Moreno Valley);
50. Pearl Lane-Oliver Street/Alessandro Boulevard (Moreno Valley);
51. Oliver Street/Cactus Avenue (Moreno Valley);
52. Oliver Street/John F Kennedy Drive (Moreno Valley);
53. Oliver Street/Iris Avenue (Moreno Valley);
54. Via Del Lago/Iris Avenue-Moreno Beach Drive (Moreno Valley);
55. Moreno Beach Drive/SR-60 Westbound Ramps (Caltrans);
56. Moreno Beach Drive/SR-60 Eastbound Ramps (Caltrans);
57. Moreno Beach Drive/Eucalyptus Avenue (Moreno Valley);
58. Moreno Beach Drive/Cottonwood Avenue (Moreno Valley);
59. Moreno Beach Drive/Alessandro Boulevard (Moreno Valley);
60. Moreno Beach Drive/Cactus Avenue (Moreno Valley);
61. Moreno Beach Drive/John F Kennedy Drive (Moreno Valley);
62. Driveway 1/Iris Avenue (Moreno Valley);
63. Driveway 2/Iris Avenue (Moreno Valley); and
64. Driveway 3/Iris Avenue (Moreno Valley).

Figure 1-5 illustrates the locations of all analysis intersections.

1.2.2 Roadway Segments

Per the Scoping Agreement and based on discussion with City staff, the following roadway segments are included in the analysis:

Perris Boulevard

1. Between Iris Avenue and Krameria Avenue (Moreno Valley);
2. Between Krameria Avenue and San Michele Road (Moreno Valley);
3. Between San Michele Road and Nandina Avenue (Moreno Valley); and
4. Between Nandina Avenue and Harley Knox Boulevard (Moreno Valley/Perris).

Lasselle Street

5. Between John F Kennedy Drive and Iris Avenue (Moreno Valley);
6. Between Iris Avenue and Krameria Avenue (Moreno Valley);
7. Between Krameria Avenue and Via Xavier Lane (Moreno Valley);
8. Between Via Xavier Lane and Lasselle Sports Park-Rojo Tierra (Moreno Valley);
9. Between Lasselle Sports Park-Rojo Tierra and Cremello Way-Avenida De Plata (Moreno Valley);
10. Between Cremello Way-Avenida De Plata and Avenida Classica-Kentucky Derby Drive (Moreno Valley); and
11. Between Avenida Classica-Kentucky Derby Drive and Via De Anza-Rancho Verde High School (Moreno Valley).

Lasselle Street-Evans Road

12. Between Via De Anza-Rancho Verde High School and Ramona Expressway (Moreno Valley/ Perris).

Nason Street

13. Between SR-60 Eastbound Ramps and Eucalyptus Avenue (Moreno Valley);
14. Between Eucalyptus Avenue and Cottonwood Avenue (Moreno Valley);
15. Between Cottonwood Avenue and Alessandro Boulevard (Moreno Valley);
16. Between Alessandro Boulevard and Cactus Avenue (Moreno Valley); and
17. Between Cactus Avenue and Iris Avenue (Moreno Valley).

Oliver Street

18. Between Alessandro Boulevard and Cactus Avenue (Moreno Valley);
19. Between Cactus Avenue and John F Kennedy Drive (Moreno Valley); and
20. Between John F Kennedy Drive and Iris Avenue (Moreno Valley).

Moreno Beach Drive

21. Between SR-60 Eastbound Ramps and Eucalyptus Avenue (Moreno Valley);
22. Between Eucalyptus Avenue and Cottonwood Avenue (Moreno Valley);
23. Between Cottonwood Avenue and Alessandro Boulevard (Moreno Valley);

24. Between Alessandro Boulevard and Cactus Avenue (Moreno Valley);
25. Between Cactus Avenue and John F Kennedy Drive (Moreno Valley); and
26. Between John F Kennedy Drive and Via Del Lago (Moreno Valley).

Alessandro Boulevard

27. Between I-215 Northbound Ramps-Day Street (Moreno Valley);
28. Between Day Street and Elsworth Street (Moreno Valley);
29. Between Elsworth Street and Frederick Street (Moreno Valley);
30. Between Frederick Street and Graham Street (Moreno Valley);
31. Between Graham Street and Heacock Street (Moreno Valley);
32. Between Heacock Street and Indian Street (Moreno Valley);
33. Between Indian Street and Perris Boulevard (Moreno Valley);
34. Between Perris Boulevard and Kitching Street (Moreno Valley);
35. Between Kitching Street and Lasselle Street (Moreno Valley);
36. Between Lasselle Street and Nason Street (Moreno Valley); and
37. Between Nason Street and Moreno Beach Drive (Moreno Valley).

Cactus Avenue

38. Between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street (Moreno Valley);
39. Between Elsworth Street and Frederick Street (Moreno Valley);
40. Between Frederick Street and Graham Street-Riverside Drive (Moreno Valley);
41. Between Graham Street-Riverside Drive and Heacock Street (Moreno Valley);
42. Between Heacock Street and Indian Street (Moreno Valley);
43. Between Indian Street and Perris Boulevard (Moreno Valley);
44. Between Perris Boulevard and Kitching Street (Moreno Valley);
45. Between Kitching Street and Lasselle Street (Moreno Valley); and
46. Between Lasselle Street and Nason Street (Moreno Valley).

John F Kennedy Drive

47. Between Oliver Street and Moreno Beach Drive (Moreno Valley).

Iris Avenue

48. Between Heacock Street and Indian Street (Moreno Valley);
49. Between Indian Street and Perris Boulevard (Moreno Valley);
50. Between Perris Boulevard and Kitching Street (Moreno Valley);

51. Between Kitching Street and Lasselle Street (Moreno Valley);
52. Between Lasselle Street and Camino Flores (Moreno Valley);
53. Between Camino Flores and Coachlight Court-Avenida De Circo (Moreno Valley);
54. Between Coachlight Court-Avenida De Circo and Grande Vista Drive (Moreno Valley);
55. Between Grande Vista Drive and Nason Street-Hillrose Lane (Moreno Valley);
56. Between Nason Street-Hillrose Lane and Driveway 1 (Moreno Valley);
57. Between Driveway 1 and Driveway 2 (Moreno Valley);
58. Between Driveway 2 and Driveway 3 (Moreno Valley);
59. Between Driveway 3 and Oliver Street (Moreno Valley); and
60. Between Oliver Street and Via Del Lago (Moreno Valley).

1.3 LIST OF CHAPTER 1.0 FIGURES AND TABLES

Figure 1-1: Regional and Project Location

Figure 1-2: Phase I Completion Site Plan

Figure 1-3: Phase II Completion Site Plan

Figure 1-4: Phase III Completion Site Plan

Figure 1-5: Study Area Intersections

Table 1-A: Proposed Project Phases

Phase	Medical Office Building	Hospital (D&T Expansion, Patient Towers and ED)	Ancillary Uses
Existing	10,500 sf (IRIS MOB 1 and Education Trailers) 74,500 sf (MOB 2)	130,000 sf (Hospital)	—
Phase I	10,500 sf (Demolition of IRIS MOB 1 and Education Trailers)	95,000 sf (D&T Expansion)	22,000 sf (CUP-Energy Center)
Phase II	65,000 sf (MOB 3)	380,000 sf (D&T Expansion, Patient Towers North & East)	8,000 sf (CUP-Energy Center)
Phase III	95,000 sf (MOB 4)	375,000 sf (D&T Expansion, Patient Towers South & West, ED) 130,000 SF (Demolition of Existing Hospital)	—
Net New	**149,500 sf**	**720,000 sf**	**30,000 sf**
Net Total	**899,500 sf**		

D&T: Diagnostics and Treatment
ED: Emergency Department
MOB: Medical Office Building
sf: square feet

2.0 ANALYSIS METHODOLOGY

2.1 LEVEL OF SERVICE DEFINITIONS

Level of service (LOS) can be characterized for the whole intersection, each intersection approach, and by each lane group. Control delay alone is used to characterize LOS for the entire intersection. Control delay quantifies the increase in travel time due to the traffic signal control, and is a surrogate measure of driver discomfort and fuel consumption.

A complete description of the meaning of LOS can be found in the Transportation Research Board Special Report 209, *Highway Capacity Manual* (HCM). The HCM establishes LOS A through F for intersections. A description of LOS for signalized and unsignalized intersections is summarized in Table 2-A. A description of LOS for roadway segments is summarized in Table 2-B.

Table 2-C shows the LOS criteria for unsignalized and signalized intersections. Tables 2-D and 2-E summarize the LOS criteria used to evaluate roadway segments based on the daily capacity for each functional classification as per the City's TIA guidelines and the *City of Perris General Plan Circulation Element* (amended August 2008), respectively. The daily traffic volumes represent the total vehicles (both directions) traveling on a roadway segment within 24 hours.

For all study area intersections, the *Highway Capacity Manual 6th Edition* (HCM 6) analysis methodologies were used to determine intersection LOS. Intersection LOS was calculated using Synchro 10 software, which uses the HCM 6 methodologies.

2.2 LEVEL OF SERVICE PROCEDURES AND THRESHOLDS

Study intersections and roadway segments analyzed in this report are under the jurisdiction of the Cities of Moreno Valley and Perris. Intersections located at freeway on-ramps and off-ramps are under the jurisdiction of Caltrans. The City of Moreno Valley uses both LOS C and LOS D as its minimum LOS criteria for intersections and roadway segments. As stated in both the City of *Moreno Valley General Plan* (dated July 11, 2006) and the City's TIA guidelines, LOS D is applicable to intersections and roadway segments adjacent to employment-generating land uses while LOS C is applicable to all other areas. Figure 2-1 illustrates the LOS standards for intersections and roadway segments within the City. The City of Perris uses LOS D as its minimum level of service criterion for intersections and roadway segments. Caltrans considers an acceptable LOS to be between LOS C and D at all intersections under its jurisdiction (delay of 45 seconds at signalized intersections and delay of 30 seconds at unsignalized intersections).

2.3 PROJECT SIGNIFICANCE THRESHOLD

At study intersections and roadway segments under the jurisdiction of the City of Moreno Valley, the determination of a significant circulation impact is based on the impact criteria contained in the City's TIA guidelines, which state that, for projects in conformance with the General Plan, a significant impact occurs at a study intersection or roadway segment when the LOS falls below the target LOS of C or D with the addition of project traffic or when a project contributes to an unsatisfactory condition (LOS D, E, or F).

At study intersection and roadway segments under the jurisdiction of the City of Perris, the determination of a significant circulation impact is based on the impact criteria contained in the Riverside County TIA guidelines, which state that a significant impact occurs at a study intersection or roadway segment when the project traffic deteriorates the LOS to below the target LOS of D or when the cumulative traffic exceeds the target LOS.

Caltrans does not have significant impact criteria for study intersections. Therefore, a significant impact occurs when the project causes an unsatisfactory condition (deteriorate from LOS A through D to E or F) for intersections or when the project contributes to an existing deficiency.

2.4 LIST OF CHAPTER 2.0 FIGURES AND TABLES

Figure 2-1: City of Moreno Valley LOS Standards

Table 2-A: Intersection Level of Service Definitions

LOS	Description
A	Traffic operations with a control delay of 10 seconds per vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If LOS A is the result of favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	Traffic operations with control delay between 10 seconds per vehicle and 20 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	Traffic operations with control delay between 20 and 35 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of the insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	Traffic operations with control delay between 35 and 55 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	Traffic operations with control delay between 55 and 80 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	Traffic operations with control delay exceeding 80 seconds per vehicle or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: *Highway Capacity Manual* (6th Edition)

Table 2-B: Roadway Segment Level of Service Definitions

LOS	Description
A	Describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control Delay at the boundary intersection is minimal. The travel speed exceeds 80% of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.
B	Describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted, and control delay at the boundary is not significant. The travel speed is between 67% and 80% of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.
C	Describes stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersection may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.
D	Indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.
E	Characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.
F	Characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is between 30% or less of the base free-flow speed, and the volume-to-capacity ratio is greater than 1.0.

Source: *Highway Capacity Manual* (6th Edition)

Table 2-C: Level of Service Criteria for Unsignalized and Signalized Intersections

Level of Service	Unsignalized Intersection Average Delay per Vehicle (sec.)	Signalized Intersection Average Delay per Vehicle (sec.)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Source: *Highway Capacity Manual* (6th Edition)

Table 2-D: Roadway Segment Capacity and Levels of Service (Moreno Valley)

Type of Roadway	Level of Service				
	A	B	C	D	E
Six-Lane Divided Arterial	33,900	39,400	45,000	50,600	56,300
Four-Lane Divided Arterial	22,500	26,300	30,000	33,800	37,500
Four-Lane Undivided Arterial	15,000	17,500	20,000	22,500	25,000
Two-Lane Industrial Collector	7,500	8,800	10,000	11,300	12,500
Two-Lane Undivided Residential	N/A	N/A	N/A	N/A	2,000

Source: City of Moreno Valley Transportation Engineering Division *Traffic Impact Analysis Preparation Guide*, August 2007

Table 2-E: Roadway Segment Capacity and Levels of Service (Perris)[1]

Functional Classification	Number of Lanes	Maximum Two-Way Average Daily Traffic (ADT)[2]				
		LOS A	LOS B	LOS C	LOS D	LOS E
Collector	2	7,800	9,100	10,400	11,700	13,000
Collector	4	15,540	18,130	20,700	23,300	25,900
Arterial	2	10,800	12,600	14,400	16,200	18,000
Arterial	4	21,540	25,130	28,700	32,300	35,900
Arterial	6	32,340	37,730	43,100	48,500	53,900
Expressway	4	24,540	28,630	32,700	36,800	40,900
Expressway	6	36,780	42,910	49,000	55,200	61,300
Expressway	8	49,020	57,190	65,400	73,500	81,700
Freeway	4	45,900	53,550	61,200	68,900	76,500
Freeway	6	70,500	82,250	94,000	105,800	117,500
Freeway	8	96,300	112,350	128,400	144,500	160,500
Freeway	10	120,360	140,420	160,500	180,500	200,600

Source: *City of Perris General Plan Circulation Element* (amended August 2008).
1 All Capacity Exhibits are based on optimum conditions and are intended as guidelines for planning purposes only.
2 Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables.
LOS = Level of Service

3.0 CIRCULATION NETWORK SETTING

3.1 EXISTING CIRCULATION NETWORK

This section provides a description of the circulation network within the study area. Figure 3-1 illustrates existing geometrics and traffic control for study intersections. Within the City of Moreno Valley, all major roadways are classified based on the City's Circulation Plan. Figure 3-2 illustrates roadway classifications per the City's Circulation Plan. Within the City of Perris, all major roadways are classified based on the City's General Plan Circulation Element. Figure 3-3 illustrates roadway classifications per the City of Perris General Plan Circulation Element.

Table 3-A summarizes the classifications of major roadways within the TIA study area limits. Following is a brief description of these roadways:

- **Alessandro Boulevard:** Alessandro Boulevard is an east-west arterial within the City of Moreno Valley. From the westerly limit of the study area to Kitching Street, Alessandro Boulevard is a partly divided arterial varying from five to six lanes. From Kitching Street to the easterly limit of study area, Alessandro Boulevard is an undivided arterial with two lanes. In the City of Moreno Valley Circulation Plan, Alessandro Boulevard is designated partly as "Divided Major Arterial" and partly as "Divided Arterial – 4 Lane."
- **Cactus Avenue:** Cactus Avenue is an east-west divided arterial within the City of Moreno Valley. The number of lanes varies from four to six. In the City of Moreno Valley Circulation Plan, Cactus Avenue is designated partly as "Divided Major Arterial – Reduced Cross Section" and partly as "Minor Arterial."
- **Iris Avenue:** Within the City of Moreno Valley, Iris Avenue is an east-west divided arterial with the number of lanes varying from three to six. In the City of Moreno Valley Circulation Plan, Iris Avenue is designated partly as "Divided Major Arterial" and partly as "Arterial."
- **Perris Boulevard:** Perris Boulevard is a north-south six-lane divided arterial within the study area in both the City Moreno Valley and the City of Perris. Perris Boulevard is designated as "Divided Arterial – 6 Lane" within Moreno Valley (as per the City's Circulation Plan) and as "Primary Arterial" within Perris (as per the City Perris General Plan Circulation Element).
- **Lasselle Street/Evans Road:** Lasselle Street is a north-south divided arterial with the number of lanes varying from four to five. Within the study area, the designation of Nason Street on the City of Moreno Valley Circulation Plan is "Arterial," "Divided Major Arterial," and Divided Major Arterial- Reduced Cross Section." South of the intersection with Camino Del Rey, it continues as Evans Road into the City of Perris. In Perris, Evans Road is designated as "Primary Arterial" (per the City Perris General Plan Circulation Element).
- **Nason Street:** Within the City of Moreno Valley, Nason Street is a north-south is a divided arterial. Travel lanes within the study vary between four and five lanes. Nason Street is designated partly as "Divided Major Arterial – Reduced Cross Section," partly as "Divided Arterial – 4 Lane," and partly as "Arterial" in the City's Circulation Plan.

- **Oliver Street:** Oliver Street runs north-south and is a partly divided and partly undivided arterial with the number of lanes varying from two to four. There are no existing bike lanes and sidewalks exist on both sides of the segments except for the stretch between John F Kennedy Drive and Filaree Avenue, where sidewalks are present only on one side of the road.
- **Moreno Beach Drive:** Moreno Beach Drive runs north-south in the City. Within the study area, it is designated as "Divided Major Arterial" in the City's Circulation Plan. Under existing conditions, it is a partly divided and partly undivided arterial with the number of lanes varying from two to six.

3.2 BIKES, TRAILS, AND TRANSIT

Figure 3-4 illustrates the master plan of trails within the City and surrounding region. These trails include bikeways and multiuse trails readily available and planned for both pedestrian and cyclist usage.

The existing bicycle facilities include Class I, Class II, and Class III routes and are described as follows:

- Class I bike facilities provide completely separate right-of-way (ROW) and are designated for the exclusive use of bicycles and pedestrians with minimal vehicle and pedestrian cross-flow.
- Class II bike facilities provide restricted ROW and are designated for the use of bicycles with a striped lane on a street or highway.
- Class III bike facilities provide for a ROW designated by signs or pavement markings (sharrows) for shared use with pedestrian or motor vehicles.

Table 3-A summarizes the classifications of bicycle lanes within the TIA study area limits. Figure 3-5 illustrates the Moreno Valley bicycle lane network plan.

Public transportation with the study area includes bus and rail service. Service providers include Riverside Transportation Authority (RTA), Sunlight Transit, and Metrolink. Table 3-B documents the operators and transit service they each provide within the study area.

3.3 PROJECT DESIGN FEATURES

As stated in the Project Description section of this report, access to the project would be provided via the three existing driveways along Iris Avenue. While Driveway 2 will continue to operate as a full-access driveway and Driveway 1 as a RIRO only driveway, Driveway 3 will start operating as a RIRO only driveway with the implementation of Phase I of the project. Also, the on-site median along Driveway 2 will be modified to extend both the left-turn and right-turn lanes to the existing roundabout and thereby extend the stacking for both the egress lanes up to 200 feet when forecasted queue lengths exceed the existing available storage.

3.4 LIST OF CHAPTER 3.0 FIGURES AND TABLES

- Figure 3-1A: Existing Study Intersection Geometrics and Traffic Control (Int. 1-32)
- Figure 3-1B: Existing Study Intersection Geometrics and Traffic Control (Int. 33-64)

- Figure 3-2: City of Moreno Valley General Plan Street Classifications
- Figure 3-3: City of Perris General Plan Street Classifications
- Figure 3-4: City of Moreno Valley Master Plan of Trails
- Figure 3-5: City of Moreno Valley Bicycle Lane Network Plan
- Table 3-A: Roadway Segment Classification
- Table 3-B: Moreno Valley Transit Services

Figure 3-1A: Existing Study Intersection Geometrics and Traffic Control (Int. 1-32)

Figure 3-1B: Existing Study Intersection Geometrics and Traffic Control (Int. 33-64)

Figure 3-2: City of Moreno Valley General Plan Street Classifications

Figure 3-3: City of Perris General Plan Street Classifications

Figure 3-4: City of Moreno Valley Master Plan of Trails

Figure 3-5: City of Moreno Valley Bicycle Lane Network Plan

Table 3-A: Roadway Segment Classification

Table 3-B: Moreno Valley Transit Services

4.0 TRAFFIC VOLUMES FOR WITHOUT PROJECT SCENARIOS

4.1 EXISTING TRAFFIC VOLUMES

Existing traffic volumes are based on counts collected by National Data and Surveying Services (NDS) and Counts Unlimited in November 2017 and January 2018. Daily tube counts were collected for roadway segments while a.m. and p.m. peak hour turning movement counts were collected at study intersections. All U-turns were considered as left turns for analysis purposes. Detailed count sheets are included in Appendix B.

Vehicle classification counts were conducted at selected intersections. At these locations, counts were converted to Passenger Car Equivalent (PCE) volumes. The concept of PCEs accounts for the larger impact of trucks on traffic operations. It does so by assigning each type of truck a PCE factor that represents the number of passenger vehicles that could travel through an intersection in the same time that a particular type of truck could. PCE volumes at study intersections were computed using a factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with four or more axles. The percentage of trucks at the remaining study intersections without classification counts was determined based on truck percentages derived from adjacent intersections with classification counts. At these locations, truck PCE volumes were computed using a PCE factor of 2.0 for all trucks, consistent with the HCM 6 methodologies.

Figures 4-1A and 4-1B illustrate existing peak hour traffic volumes at study intersections. Table 4-A summarizes the existing roadway segment daily traffic volumes.

4.2 GENERAL PLAN BUILD-OUT (2040) WITHOUT PROJECT PEAK HOUR TRAFFIC VOLUMES

General Plan build-out conditions traffic volumes were developed using forecast volumes obtained from Moreno Valley Traffic Model (MVTM) and by applying the National Cooperative Highway Research Program (NCHRP) post-processing methodologies. Information concerning cumulative projects in the City was obtained from the City of Moreno Valley Economic Development website. Cumulative projects were also considered for the adjacent jurisdictions of County of Riverside, City of Riverside, City of Perris, and the March Joint Powers Authority. As such, the future year scenario in MVTM includes all projects anticipated to be built over the next 25 years. The model socioeconomic data for the future scenario were reviewed to check whether the cumulative projects that are anticipated to affect the study area are included in the model. If a project was missing or not appropriately included in the model, the model's socioeconomic data were accordingly updated to include those projects. Figure 4-2 illustrates the cumulative project locations. Table 4-B lists the cumulative projects included in the analysis.

Figures 4-3A and 4-3B illustrate peak hour traffic volumes at study intersections for General Plan build-out without project conditions. Table 4-C summarizes the General Plan build-out roadway segment daily traffic volumes.

4.3 PHASE I PROJECT COMPLETION YEAR (2023) WITHOUT PROJECT TRAFFIC VOLUMES

Based on discussion with City staff during the scoping agreement process, it was determined that the traffic volumes for each phase will be developed by interpolating between the existing and General Plan build-out without project traffic volumes. Traffic volumes for Phase I project completion year without project conditions were obtained by interpolating the forecast volume growth from MVTM and adding it to the existing traffic volumes.

Figures 4-4A and 4-4B illustrate peak hour traffic volumes at study intersections for Phase I project completion year without project conditions. Table 4-D summarizes the Phase II project completion year roadway segment daily traffic volumes.

4.4 PHASE II PROJECT COMPLETION YEAR (2032) WITHOUT PROJECT TRAFFIC VOLUMES

Traffic volumes for Phase II project completion year without project conditions were obtained by interpolating the forecast volume growth from MVTM and adding it to the existing traffic volumes.

Figure 4-5A and 4-5B illustrate peak hour traffic volumes at study intersections for Phase II project completion year without project conditions. Table 4-E summarizes the Phase II project completion year roadway segment daily traffic volumes.

4.5 PHASE III PROJECT COMPLETION YEAR (2038) WITHOUT PROJECT TRAFFIC VOLUMES

Traffic volumes for Phase III project completion year without project conditions were obtained by interpolating the forecast volume growth from MVTM and adding it to the existing traffic volumes.

Figures 4-6A and 4-6B illustrate peak hour traffic volumes at study intersections for Phase III project completion year without project conditions. Table 4-F summarizes the Phase III project completion year roadway segment daily traffic volumes.

Detailed volume development worksheets are included in Appendix C.

4.6 LIST OF CHAPTER 4.0 FIGURES AND TABLES

- Figure 4-4B: Phase I Project Completion Year (2023) without Project Peak Hour Traffic Volumes (Int. 33-64)
- Figure 4-5A: Phase II Project Completion Year (2032) without Project Peak Hour Traffic Volumes (Int. 1-32)
- Figure 4-5B: Phase II Project Completion Year (2032) without Project Peak Hour Traffic Volumes (Int. 33-64)
- Figure 4-6A: Phase III Project Completion Year (2038) without Project Peak Hour Traffic Volumes (Int. 1-32)
- Figure 4-6B: Phase III Project Completion Year (2038) without Project Peak Hour Traffic Volumes (Int. 33-64)
- Table 4-A: Existing Roadway Segment Daily Traffic Volumes
- Table 4-B: Cumulative Projects
- Table 4-C: General Plan Build-out (2040) Roadway Segment Daily Traffic Volumes
- Table 4-D: Phase I Project Completion Year (2023) Roadway Segment Daily Traffic Volumes
- Table 4-E: Phase II Project Completion Year (2032) Roadway Segment Daily Traffic Volumes
- Table 4-F: Phase III Project Completion Year (2038) Roadway Segment Daily Traffic Volumes

Figure 4-1A: Existing Peak Hour Traffic Volumes (Int. 1-32)

Figure 4-1B: Existing Peak Hour Traffic Volumes (Int. 33-64)

Figure 4-2: Cumulative Project Locations

Figure 4-3A: General Plan Build-out (2040) Peak Hour Traffic Volumes (Int. 1-32)

Figure 4-3B: General Plan Build-out (2040) Peak Hour Traffic Volumes (Int. 33-64)

Figure 4-4A: Phase I Project Completion Year (2023) without Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 4-4B: Phase I Project Completion Year (2023) without Project Peak Hour Traffic Volumes (Int. 33-64)

Figure 4-5A: Phase II Project Completion Year (2032) without Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 4-5B: Phase II Project Completion Year (2032) without Project Peak Hour Traffic Volumes (Int. 33-64)

Figure 4-6A: Phase III Project Completion Year (2038) without Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 4-6B: Phase III Project Completion Year (2038) without Project Peak Hour Traffic Volumes (Int. 33-64)

Table 4-A: Existing Roadway Segment Daily Traffic Volumes
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Table 4-A: Existing Roadway Segment Daily Traffic Volumes
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Table 4-B: Cumulative Projects
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Table 4-B: Cumulative Projects
(Page 2 of 3)

Table 4-B: Cumulative Projects
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Table 4-C: General Plan Build-out (2040) Roadway Segment Daily Traffic Volumes
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Table 4-C: General Plan Build-out (2040) Roadway Segment Daily Traffic Volumes
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Table 4-D: Phase I Project Completion Year (2023) Roadway Segment Daily Traffic Volumes (Page 1 of 2)

Table 4-D: Phase I Project Completion Year (2023) Roadway Segment Daily Traffic Volumes (Page 2 of 2)

Table 4-E: Phase II Project Completion Year (2032) Roadway Segment Daily Traffic Volumes (Page 1 of 2)

Table 4-E: Phase II Project Completion Year (2032) Roadway Segment Daily Traffic Volumes (Page 2 of 2)

Table 4-F: Phase III Project Completion Year (2038) Roadway Segment Daily Traffic Volumes (Page 1 of 2)

Table 4-F: Phase III Project Completion Year (2038) Roadway Segment Daily Traffic Volumes (Page 2 of 2)

5.0 PROJECT TRAFFIC

5.1 PROJECT TRIP GENERATION

The trip generation for the proposed project was developed using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition, for Land Uses 610 – “Hospital” and 720 – “Medical-Dental Office Building.” Trip credits have been taken for the existing medical office building and hospital to be demolished in Phases I and III, respectively. The credits have been obtained using ITE trip generation rates for the demolished uses. Table 5-A summarizes the project trip generation. As illustrated in Table 5-A, in Phase I, the proposed project will generate 653 net daily trips, with 55 net trips occurring during the a.m. peak hour and 56 net trips occurring during the p.m. peak hour. After the completion of Phase II, the project will generate 6,989 net daily trips, with 574 net trips occurring during the a.m. peak hour and 650 net trips occurring during the p.m. peak hour. Under full build-out condition, the project will generate 12,921 net daily trips, with 1,056 net trips occurring during the a.m. peak hour and 1,216 net trips occurring during the p.m. peak hour.

5.2 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The project trip distribution was developed using the select zone model run obtained from the MVTM. The select zone model plot for the proposed project is attached as part of the scoping agreement in Appendix A. Figures 5-1A and 5-1B illustrate the project trip distribution. Figure 5-2 illustrates the regional project distribution. The project trip assignment in various phases is the product of the total project trip generation in the respective phase and the project trip distribution percentages. Figures 5-3A and 5-3B, 5-4A and 5-4B, 5-5A and 5-5B, and 5-6A and 5-6B illustrate the existing, project completion years Phases I, II, III, and General Plan build-out project trip assignments, respectively.

5.3 LIST OF CHAPTER 5.0 FIGURES AND TABLES

Figure 5-1A: Project Trip Distribution (Int. 1-32)

Figure 5-1B: Project Trip Distribution (Int. 33-64)

Figure 5-2: Regional Project Distribution

Figure 5-3A: Existing Project Trip Assignment (Int. 1-32)

Figure 5-3B: Existing Project Trip Assignment (Int. 33-64)

Figure 5-4A: Phase I Project Trip Assignment (Int. 1-32)

Figure 5-4B: Phase I Project Trip Assignment (Int. 33-64)

Figure 5-5A: Phase II Project Trip Assignment (Int. 1-32)

Figure 5-5B: Phase II Project Trip Assignment (Int. 33-64)

Figure 5-6A: Phase III and General Plan Build-out (2040) Project Trip Assignment (Int. 1-32)

Figure 5-6B: Phase III and General Plan Build-out (2040) Project Trip Assignment (Int. 33-64)

Table 5-A: Project Trip Generation
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Table 5-A: Project Trip Generation
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6.0 TRAFFIC VOLUMES FOR WITH PROJECT SCENARIOS

Existing, project completion year (Phases I, II, and III), and General Plan build-out with project traffic volumes were developed by adding project traffic to the corresponding without project scenarios. Figures 6-1A and 6-1B, 6-2A and 6-2B, 6-3A and 6-3B, 6-4A and 6-4B, and 6-5A and 6-5B illustrate "with project" peak hour traffic volumes at study intersections under existing, Phases I, II, and III project completion years, and General Plan build-out conditions, respectively. Previously referenced Tables 4-A, 4-B, 4-C, 4-D, and 4-E summarize the "with project" roadway segment daily traffic volumes under existing, Phases I, II, and III project completion years, and General Plan build-out conditions, respectively.

Detailed volume development worksheets are included in Appendix C.

6.1 LIST OF CHAPTER 6.0 FIGURES

Figure 6-1A: Existing with Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 6-1B: Existing with Project Peak Hour Traffic Volumes (Int. 33-64)

Figure 6-2A: Phase I Project Completion Year (2023) with Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 6-2B: Phase I Project Completion Year (2023) with Project Peak Hour Traffic Volumes (Int. 33-64)

Figure 6-3A: Phase II Project Completion Year (2032) with Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 6-3B: Phase II Project Completion Year (2032) with Project Peak Hour Traffic Volumes (Int. 33-64)

Figure 6-4A: Phase III Project Completion Year (2038) with Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 6-4B: Phase III Project Completion Year (2038) with Project Peak Hour Traffic Volumes (Int. 33-64)

Figure 6-5A: General Plan Build-out (2040) with Project Peak Hour Traffic Volumes (Int. 1-32)

Figure 6-5B: General Plan Build-out (2040) with Project Peak Hour Traffic Volumes (Int. 33-64)

7.0 INTERSECTION AND ROADWAY SEGMENT LEVELS OF SERVICE

7.1 EXISTING LEVELS OF SERVICE

7.1.1 Study Intersections

Previously referenced Figure 3-1 illustrates existing study geometrics and traffic control. An intersection LOS analysis was conducted for existing conditions using the methodologies previously discussed. Table 7-A summarizes the results of the analysis and shows that the following intersections are currently operating at an unsatisfactory LOS:

- Indian Street/Cactus Avenue (a.m. peak hour only);
- Kitching Street/Cactus Avenue (a.m. peak hour only);
- Lasselle Street/Cactus Avenue (a.m. peak hour only);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. peak hour only);
- Nason Street-Hillrose Lane/Iris Avenue (p.m. peak hour only); and
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. peak hour only).

All other intersections currently operate at a satisfactory LOS.

Figure 7-1 illustrates intersection levels of service under existing conditions.

7.1.2 Roadway Segments

A roadway segment LOS analysis was conducted for existing conditions using the methodologies previously discussed. Table 7-B summarizes the results of this analysis and shows that the following roadway segments are currently operating at an unsatisfactory LOS:

- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue; and
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street.

All other roadway segments operate at a satisfactory LOS.

Roadway segment levels of service under existing conditions are illustrated in Figure 7-2.

7.2 EXISTING WITH PROJECT LEVELS OF SERVICE

Analysis of the existing with project scenario is provided for CEQA compliance to identify direct project impacts if the project were to be built and in operation today. This scenario eliminates the effects of ambient growth and other cumulative projects and deals specifically with project impacts.

7.2.1 Study Intersections

An intersection LOS analysis was conducted for existing with project conditions using the methodologies previously discussed. Table 7-A summarizes the results of the analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under existing with project conditions:

- Indian Street/Cactus Avenue (a.m. peak hour only);
- Kitching Street/Cactus Avenue (a.m. peak hour only);
- Lasselle Street/Cactus Avenue (a.m. peak hour only);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. peak hour only);
- Nason Street-Hillrose Lane/Iris Avenue (a.m. and p.m. peak hours); and
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. peak hour only).

All these intersections operate at an unsatisfactory LOS even under existing conditions; therefore, the project contributes to the existing deficiency at these intersections. As such, the project has a significant impact at these intersections. All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-1 illustrates intersection levels of service under existing with project conditions.

7.2.2 Roadway Segments

A roadway segment LOS analysis was conducted for existing with project conditions using the methodologies previously discussed. Table 7-B summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under existing with project conditions:

- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;
- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street; and
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street.

The two segments on Alessandro Boulevard do not operate at an unsatisfactory LOS under existing conditions; therefore, the project has a significant direct impact at these two segments. However, the two segments on Moreno Beach Drive and the one on Cactus Avenue operate at an unsatisfactory LOS even under existing conditions. Thus, the project contributes to the existing deficiency at these segments. As such, the project has a significant impact at these segments. All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under existing with project conditions are illustrated in Figure 7-3.

7.3 PHASE I PROJECT COMPLETION YEAR (2023) WITHOUT PROJECT LEVELS OF SERVICE

7.3.1 Study Intersections

An intersection LOS analysis was conducted for Phase I project completion year without project conditions using the methodologies previously discussed. Table 7-C summarizes the results of the analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under Phase I project completion year without project conditions:

- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Indian Street/Cactus Avenue (a.m. peak hour only);
- Kitching Street/Cactus Avenue (a.m. peak hour only);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. peak hour only);
- Nason Street-Hillrose Lane/Iris Avenue (p.m. peak hour only);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour only); and
- Moreno Beach Drive/Alessandro Boulevard (p.m. peak hour only).

All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-4 illustrates intersection levels of service under Phase I project completion year without project conditions.

7.3.2 Roadway Segments

A roadway segment LOS analysis was conducted for Phase I project completion year without project conditions using the methodologies previously discussed. Table 7-D summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under Phase I project completion year without project conditions:

- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;

- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive; and
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street.

All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under Phase I project completion year without project conditions are illustrated in Figure 7-5.

7.4 PHASE I PROJECT COMPLETION YEAR (2023) WITH PROJECT LEVELS OF SERVICE

7.4.1 Study Intersections

An intersection LOS analysis was conducted for Phase I project completion year with project conditions using the methodologies previously discussed. Table 7-C summarizes the results of the analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under Phase I project completion year with project conditions:

- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Indian Street/Cactus Avenue (a.m. peak hour only);
- Kitching Street/Cactus Avenue (a.m. peak hour only);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. peak hour only);
- Nason Street-Hillrose Lane/Iris Avenue (p.m. peak hour only);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour only); and
- Moreno Beach Drive/Alessandro Boulevard (p.m. peak hour only).

All these intersections are forecast to operate at an unsatisfactory LOS even under Phase I project completion year without project conditions. Thus, the project contributes to the forecast deficiency at these intersections. As such, the project has a cumulative impact at these intersections. All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-4 illustrates intersection levels of service under Phase I project completion year with project conditions.

7.4.2 Roadway Segments

A roadway segment LOS analysis was conducted for Phase I project completion year with project conditions using the methodologies previously discussed. Table 7-D summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under Phase I project completion year with project conditions:

- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;
- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive; and
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street.

These six segments are forecast to operate at an unsatisfactory LOS even under Phase I project completion year without project conditions. Thus, the project contributes to the forecast deficiency at these segments. As such, the project has a cumulative impact at all these segments. All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under Phase I project completion year with project conditions are illustrated in Figure 7-6.

7.5 PHASE II PROJECT COMPLETION YEAR (2032) WITHOUT PROJECT LEVELS OF SERVICE

7.5.1 Study Intersections

An intersection LOS analysis was conducted for Phase II project completion year without project conditions using the methodologies previously discussed. Table 7-E summarizes the results of the analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under Phase II project completion year without project conditions:

- I-215 Northbound Ramps-Old Frontage Road/Cactus Avenue (a.m. and p.m. peak hours);
- Day Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Elsworth Street/Alessandro Boulevard (p.m. peak hour only);
- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Graham Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street-Riverside Drive/Cactus Avenue (a.m. peak hour only);
- Indian Street/Cactus Avenue (a.m. peak hour only);
- Perris Boulevard/Alessandro Boulevard (p.m. peak hour only);
- Perris Boulevard/Harley Knox Boulevard (a.m. peak hour only);

- Kitching Street/Cactus Avenue (a.m. and p.m. peak hours);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Iris Avenue (p.m. peak hour only);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. peak hour only);
- Nason Street/Eucalyptus Avenue (a.m. peak hour only);
- Nason Street-Hillrose Lane/Iris Avenue (p.m. peak hour only);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); and
- Moreno Beach Drive/Alessandro Boulevard (a.m. and p.m. peak hours).

All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-7 illustrates intersection levels of service under Phase II project completion year without project conditions.

7.5.2 Roadway Segments

A roadway segment LOS analysis was conducted for Phase II project completion year without project conditions using the methodologies previously discussed. Table 7-F summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under Phase II project completion year without project conditions:

- Lasselle Street, between Iris Avenue and Krameria Avenue;
- Lasselle Street between Krameria Avenue and Via Xavier Lane;
- Lasselle Street between Via Xavier Lane and Lasselle Sports Park-Rojo Tierra;
- Lasselle Street between Lasselle Sports Park-Rojo Tierra and Cremello Way-Avenida De Plata;
- Lasselle Street between Cremello Way-Avenida De Plata and Avenida Classica-Kentucky Derby Drive;
- Lasselle Street-Evans Road between Via De Anza-Rancho Verde High School and Ramona Expressway;
- Nason Street between Eucalyptus Avenue and Cottonwood Avenue;
- Nason Street between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;

- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;
- Alessandro Boulevard between I-215 Northbound Ramps and Day Street;
- Alessandro Boulevard between Day Street and Elsworth Street;
- Alessandro Boulevard between Frederick Street and Graham Street;
- Alessandro Boulevard between Graham Street and Heacock Street;
- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive; and
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street.

All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under Phase II project completion year without project conditions are illustrated in Figure 7-8.

7.6 PHASE II PROJECT COMPLETION YEAR (2032) WITH PROJECT LEVELS OF SERVICE

7.6.1 Study Intersections

An intersection LOS analysis was conducted for Phase II project completion year with project conditions using the methodologies previously discussed. Table 7-E summarizes the results of the analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under Phase II project completion year with project conditions:

- I-215 Northbound Ramps-Old Frontage Road/Cactus Avenue (a.m. and p.m. peak hours);
- Day Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Elsworth Street/Alessandro Boulevard (p.m. peak hour only);
- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Graham Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street-Riverside Drive/Cactus Avenue (a.m. peak hour only);
- Indian Street/Cactus Avenue (a.m. peak hour only);
- Perris Boulevard/Alessandro Boulevard (p.m. peak hour only);
- Perris Boulevard/Harley Knox Boulevard (a.m. peak hour only);
- Kitching Street/Cactus Avenue (a.m. and p.m. peak hours);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);

- Lasselle Street/Iris Avenue (p.m. peak hour only);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. peak hour only);
- Nason Street/Eucalyptus Avenue (a.m. peak hour only);
- Nason Street-Hillrose Lane/Iris Avenue (p.m. peak hour only);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); and
- Moreno Beach Drive/Alessandro Boulevard (a.m. and p.m. peak hours).

All these intersections are forecast to operate at an unsatisfactory LOS even under Phase II project completion year without project conditions. Thus, the project contributes to the forecast deficiency at these intersections. As such, the project has a cumulative impact at these intersections. All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-7 illustrates intersection levels of service under Phase II project completion year with project conditions.

7.6.2 Roadway Segments

A roadway segment LOS analysis was conducted for Phase II project completion year with project conditions using the methodologies previously discussed. Table 7-F summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under Phase II project completion year with project conditions:

- Lasselle Street between Iris Avenue and Krameria Avenue;
- Lasselle Street, between Krameria Avenue and Via Xavier Lane;
- Lasselle Street between Via Xavier Lane and Lasselle Sports Park-Rojo Tierra;
- Lasselle Street between Lasselle Sports Park-Rojo Tierra and Cremello Way-Avenida De Plata;
- Lasselle Street between Cremello Way-Avenida De Plata and Avenida Classica-Kentucky Derby Drive;
- Lasselle Street-Evans Road between Via De Anza-Rancho Verde High School and Ramona Expressway;
- Nason Street between Eucalyptus Avenue and Cottonwood Avenue;
- Nason Street between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue;
- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;

- Alessandro Boulevard between I-215 Northbound Ramps and Day Street;
- Alessandro Boulevard between Day Street and Elsworth Street;
- Alessandro Boulevard between Frederick Street and Graham Street;
- Alessandro Boulevard between Graham Street and Heacock Street;
- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive; and
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street.

All these segments, except for the segment of Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue, are forecast to operate at an unsatisfactory LOS even under Phase II project completion year without project conditions. Thus, the project contributes to the forecast deficiency at these segments. As such, the project has a cumulative impact at all these segments. All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under Phase II project completion year with project conditions are illustrated in Figure 7-9.

7.7 PHASE III PROJECT COMPLETION YEAR (2038) WITHOUT PROJECT LEVELS OF SERVICE

7.7.1 Study Intersections

An intersection LOS analysis was conducted for Phase III project completion year without project conditions using the methodologies previously discussed. Table 7-G summarizes the results of the analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under Phase III project completion year without project conditions:

- I-215 Northbound Ramps-Old Frontage Road/Cactus Avenue (a.m. and p.m. peak hours);
- Day Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Elsworth Street/Alessandro Boulevard (p.m. peak hour only);
- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Frederick Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street-Riverside Drive/Cactus Avenue (a.m. peak hour only);
- Indian Street/Cactus Avenue (a.m. and p.m. peak hours);
- Perris Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours);
- Perris Boulevard/Cactus Avenue (p.m. peak hour only);
- Perris Boulevard/Iris Avenue (p.m. peak hour only);

- Perris Boulevard/Harley Knox Boulevard (a.m. and p.m. peak hours);
- Kitching Street/Cactus Avenue (a.m. and p.m. peak hours);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. and p.m. peak hours);
- Nason Street/Eucalyptus Avenue (a.m. peak hour only);
- Nason Street/Alessandro Boulevard (p.m. peak hour only);
- Nason Street-Hillrose Lane/Iris Avenue (p.m. peak hour only);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/Eucalyptus Avenue (p.m. peak hour only);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour only); and
- Moreno Beach Drive/Alessandro Boulevard (a.m. and p.m. peak hours).

All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-10 illustrates intersection levels of service under Phase III project completion year without project conditions.

7.7.2 Roadway Segments

A roadway segment LOS analysis was conducted for Phase III project completion year without project conditions using the methodologies previously discussed. Table 7-H summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under Phase III project completion year without project conditions:

- Perris Boulevard between Krameria Avenue and San Michele Road;
- Perris Boulevard between San Michele Road and Nandina Avenue;
- Perris Boulevard between Nandina Avenue and Harley Knox Boulevard;
- Lasselle Street between Iris Avenue and Krameria Avenue;
- Lasselle Street between Krameria Avenue and Via Xavier Lane;
- Lasselle Street between Via Xavier Lane and Lasselle Sports Park-Rojo Tierra;

- Lasselle Street between Lasselle Sports Park-Rojo Tierra and Cremello Way-Avenida De Plata;
- Lasselle Street between Cremello Way-Avenida De Plata and Avenida Classica-Kentucky Derby Drive;
- Lasselle Street between Avenida Classica-Kentucky Derby Drive and Via De Anza-Rancho Verde High School;
- Lasselle Street-Evans Road between Via De Anza-Rancho Verde High School and Ramona Expressway;
- Nason Street between Eucalyptus Avenue and Cottonwood Avenue;
- Nason Street between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue;
- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;
- Alessandro Boulevard between I-215 Northbound Ramps and Day Street;
- Alessandro Boulevard between Day Street and Elsworth Street;
- Alessandro Boulevard between Frederick Street and Graham Street;
- Alessandro Boulevard between Graham Street and Heacock Street;
- Alessandro Boulevard between Heacock Street and Indian Street;
- Alessandro Boulevard between Perris Boulevard and Kitching Street;
- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive;
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street;
- Cactus Avenue between Frederick Street and Graham Street-Riverside Drive;
- Iris Avenue between Perris Boulevard and Kitching Street;
- Iris Avenue between Camino Flores and Coachlight Court-Avenida De Circo;
- Iris Avenue between Coachlight Court-Avenida De Circo and Grande Vista Drive; and
- Iris Avenue between Grande Vista Drive and Nason Street-Hillrose Lane.

All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under Phase III project completion year without project conditions are illustrated in Figure 7-11.

7.8 PHASE III PROJECT COMPLETION YEAR (2038) WITH PROJECT LEVELS OF SERVICE

7.8.1 Study Intersections

An intersection LOS analysis was conducted for Phase III project completion year with project conditions using the methodologies previously discussed. Table 7-G summarizes the results of the analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under Phase III project completion year with project conditions:

- I-215 Northbound Ramps-Old Frontage Road/Cactus Avenue (a.m. and p.m. peak hours);
- Day Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Elsworth Street/Alessandro Boulevard (p.m. peak hour only);
- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Frederick Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street-Riverside Drive/Cactus Avenue (a.m. and p.m. peak hours);
- Heacock Street/Alessandro Boulevard (p.m. peak hour only);
- Indian Street/Cactus Avenue (a.m. and p.m. peak hours);
- Perris Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours);
- Perris Boulevard/Cactus Avenue (p.m. peak hour only);
- Perris Boulevard/Iris Avenue (p.m. peak hour only);
- Perris Boulevard/Harley Knox Boulevard (a.m. and p.m. peak hours);
- Kitching Street/Cactus Avenue (a.m. and p.m. peak hours);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. and p.m. peak hours);
- Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hours);
- Nason Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Nason Street-Hillrose Lane/Iris Avenue (a.m. and p.m. peak hours);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);

- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/Eucalyptus Avenue (p.m. peak hour only);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour only);
- Moreno Beach Drive/Alessandro Boulevard (a.m. and p.m. peak hours); and
- Driveway 1/Iris Avenue (p.m. peak hour only).

All these intersections except for the intersections of Heacock Street/Alessandro Boulevard and Driveway 1/Iris Avenue are forecast to operate at an unsatisfactory LOS even under Phase III project completion year without project conditions. Thus, the project contributes to the forecast deficiency at these intersections. As such, the project has a cumulative impact at these intersections. All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-10 illustrates intersection levels of service under Phase III project completion year with project conditions.

7.8.2 Roadway Segments

A roadway segment LOS analysis was conducted for Phase III project completion year with project conditions using the methodologies previously discussed. Table 7-H summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under Phase III project completion year with project conditions:

- Perris Boulevard between Krameria Avenue and San Michele Road;
- Perris Boulevard between San Michele Road and Nandina Avenue;
- Perris Boulevard between Nandina Avenue and Harley Knox Boulevard;
- Lasselle Street between Iris Avenue and Krameria Avenue;
- Lasselle Street between Krameria Avenue and Via Xavier Lane;
- Lasselle Street between Via Xavier Lane and Lasselle Sports Park-Rojo Tierra;
- Lasselle Street between Lasselle Sports Park-Rojo Tierra and Cremello Way-Avenida De Plata;
- Lasselle Street between Cremello Way-Avenida De Plata and Avenida Classica-Kentucky Derby Drive;
- Lasselle Street between Avenida Classica-Kentucky Derby Drive and Via De Anza-Rancho Verde High School;
- Lasselle Street-Evans Road between Via De Anza-Rancho Verde High School and Ramona Expressway;
- Nason Street between Eucalyptus Avenue and Cottonwood Avenue;
- Nason Street between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue;

- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;
- Alessandro Boulevard between I-215 Northbound Ramps and Day Street;
- Alessandro Boulevard between Day Street and Elsworth Street;
- Alessandro Boulevard between Frederick Street and Graham Street;
- Alessandro Boulevard between Graham Street and Heacock Street;
- Alessandro Boulevard between Heacock Street and Indian Street;
- Alessandro Boulevard between Perris Boulevard and Kitching Street;
- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive;
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street;
- Cactus Avenue between Elsworth Avenue and Frederick Street;
- Cactus Avenue between Frederick Street and Graham Street-Riverside Drive;
- Iris Avenue between Perris Boulevard and Kitching Street;
- Iris Avenue between Lasselle Street and Camino Flores;
- Iris Avenue between Camino Flores and Coachlight Court-Avenida De Circo;
- Iris Avenue between Coachlight Court-Avenida De Circo and Grande Vista Drive; and
- Iris Avenue between Grande Vista Drive and Nason Street-Hillrose Lane.

All these segments, except for the segment of Cactus Avenue between Elsworth Street and Frederick Street and the segment of Iris Avenue between Lasselle Street and Camino Flores, are forecast to operate at an unsatisfactory LOS even under Phase III project completion year without project conditions. Thus, the project contributes to the forecast deficiency at these segments. As such, the project has a cumulative impact at all these segments. All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under Phase III project completion year with project conditions are illustrated in Figure 7-12.

7.9 GENERAL PLAN BUILD-OUT (2040) WITHOUT PROJECT LEVELS OF SERVICE

7.9.1 Study Intersections

An intersection LOS analysis was conducted for General Plan build-out without project conditions using the methodologies previously discussed. Table 7-I summarizes the results of this analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under General Plan build-out without project conditions:

- I-215 Northbound Ramps-Old 215 Frontage Road/Cactus Avenue (a.m. and p.m. peak hours);
- Day Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Elsworth Street/Alessandro Boulevard (p.m. peak hour only);
- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Frederick Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street-Riverside Drive/Cactus Avenue (a.m. and p.m. peak hours);
- Heacock Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Indian Street/Cactus Avenue (a.m. and p.m. peak hours);
- Perris Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours);
- Perris Boulevard/Cactus Avenue (p.m. peak hour only);
- Perris Boulevard/Iris Avenue (p.m. peak hour only);
- Perris Boulevard/Krameria Avenue (p.m. peak hour only);
- Perris Boulevard/Harley Knox Boulevard (a.m. and p.m. peak hours);
- Kitching Street/Cactus Avenue (a.m. and p.m. peak hours);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. and p.m. peak hours);
- Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hours);
- Nason Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Nason Street-Hillrose Lane/Iris Avenue (a.m. and p.m. peak hours);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/Eucalyptus Avenue (p.m. peak hour only);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour only); and
- Moreno Beach Drive/Alessandro Boulevard (a.m. and p.m. peak hours).

All other study intersections are forecast to operate at a satisfactory LOS.

Figure 7-13 illustrates intersection levels of service under General Plan build-out without project conditions.

7.9.2 Roadway Segments

A roadway segment LOS analysis was conducted for General Plan build-out without project conditions using the methodologies previously discussed. Table 7-J summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under General Plan build-out without project conditions:

- Perris Boulevard between Iris Avenue and Krameria Avenue;
- Perris Boulevard between Krameria Avenue and San Michele Road;
- Perris Boulevard between San Michele Road and Nandina Avenue;
- Perris Boulevard between Nandina Avenue and Harley Knox Boulevard;
- Lasselle Street between Iris Avenue and Krameria Avenue;
- Lasselle Street between Krameria Avenue and Via Xavier Lane;
- Lasselle Street between Via Xavier Lane and Lasselle Sports Park-Rojo Tierra;
- Lasselle Street between Lasselle Sports Park-Rojo Tierra and Cremello Way-Avenida De Plata;
- Lasselle Street between Cremello Way-Avenida De Plata and Avenida Classica-Kentucky Derby Drive;
- Lasselle Street between Avenida Classica-Kentucky Derby Drive and Via De Anza-Rancho Verde High School;
- Lasselle Street-Evans Road, between Via De Anza-Rancho Verde High School and Ramona Expressway;
- Nason Street between Eucalyptus Avenue and Cottonwood Avenue;
- Nason Street between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue;
- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;
- Alessandro Boulevard between I-215 Northbound Ramps and Day Street;
- Alessandro Boulevard between Day Street and Elsworth Street;
- Alessandro Boulevard between Frederick Street and Graham Street;
- Alessandro Boulevard between Graham Street and Heacock Street;
- Alessandro Boulevard between Heacock Street and Indian Street;
- Alessandro Boulevard between Indian Street and Perris Boulevard;
- Alessandro Boulevard between Perris Boulevard and Kitching Street;

- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive;
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street;
- Cactus Avenue between Elsworth Avenue and Frederick Street;
- Cactus Avenue between Frederick Street and Graham Street-Riverside Drive;
- Iris Avenue between Perris Boulevard and Kitching Street;
- Iris Avenue between Lasselle Street and Camino Flores;
- Iris Avenue between Camino Flores and Coachlight Court-Avenida De Circo;
- Iris Avenue between Coachlight Court-Avenida De Circo and Grande Vista Drive; and
- Iris Avenue between Grande Vista Drive and Nason Street-Hillrose Lane.

All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under General Plan build-out without project conditions are illustrated in Figure 7-14.

7.10 GENERAL PLAN BUILD-OUT (2040) WITH PROJECT LEVELS OF SERVICE

7.10.1 Study Intersections

An intersection LOS analysis was conducted for General Plan build-out with project conditions using the methodologies previously discussed. Table 7-I summarizes the results of this analysis and shows that the following intersections are forecast to operate at an unsatisfactory LOS under General Plan build-out with project conditions:

- I-215 Northbound Ramps-Old 215 Frontage Road/Cactus Avenue (a.m. and p.m. peak hours);
- Day Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Elsworth Street/Alessandro Boulevard (p.m. peak hour only);
- Elsworth Street/Cactus Avenue (p.m. peak hour only);
- Frederick Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street/Alessandro Boulevard (p.m. peak hour only);
- Graham Street-Riverside Drive/Cactus Avenue (a.m. and p.m. peak hours);
- Heacock Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Indian Street/Cactus Avenue (a.m. and p.m. peak hours);
- Perris Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours);
- Perris Boulevard/Cactus Avenue (p.m. peak hour only);

- Perris Boulevard/Iris Avenue (p.m. peak hour only);
- Perris Boulevard/Krameria Avenue (p.m. peak hour only);
- Perris Boulevard/Harley Knox Boulevard (a.m. and p.m. peak hours);
- Kitching Street/Cactus Avenue (a.m. and p.m. peak hours);
- Kitching Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Lasselle Street/Cactus Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Iris Avenue (a.m. and p.m. peak hours);
- Lasselle Street/Krameria Avenue (a.m. peak hour only);
- Lasselle Street/Via De Anza-Rancho Verde High School (a.m. and p.m. peak hours);
- Evans Road/Ramona Expressway (a.m. and p.m. peak hours);
- Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hours);
- Nason Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Nason Street-Hillrose Lane/Iris Avenue (a.m. and p.m. peak hours);
- Pearl Lane-Oliver Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/Eucalyptus Avenue (p.m. peak hour only);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour only);
- Moreno Beach Drive/Alessandro Boulevard (a.m. and p.m. peak hours); and
- Driveway 1/Iris Avenue (p.m. peak hour only).

All the intersections except for the intersection of Driveway 1/Iris Avenue are forecast to operate at an unsatisfactory LOS even under General Plan build-out without project conditions. Thus, the project contributes to the forecast deficiency at these intersections. As such, the project has a cumulative impact at these intersections. All other intersections are forecast to operate at a satisfactory LOS.

Figure 7-13 illustrates intersection levels of service under General Plan build-out with project conditions.

Detailed intersection level of service worksheets are provided in Appendix D.

7.10.2 Roadway Segments

A roadway segment LOS analysis was conducted for General Plan build-out with project conditions using the methodologies previously discussed. Table 7-J summarizes the results of this analysis and shows that the following roadway segments are forecast to operate at an unsatisfactory LOS under General Plan build-out with project conditions:

- Perris Boulevard between Iris Avenue and Krameria Avenue;
- Perris Boulevard between Krameria Avenue and San Michele Road;
- Perris Boulevard between San Michele Road and Nandina Avenue;
- Perris Boulevard between Nandina Avenue and Harley Knox Boulevard;
- Lasselle Street between Iris Avenue and Krameria Avenue;
- Lasselle Street between Krameria Avenue and Via Xavier Lane;
- Lasselle Street between Via Xavier Lane and Lasselle Sports Park-Rojo Tierra;
- Lasselle Street between Lasselle Sports Park-Rojo Tierra and Cremello Way-Avenida De Plata;
- Lasselle Street between Cremello Way-Avenida De Plata and Avenida Classica-Kentucky Derby Drive;
- Lasselle Street between Avenida Classica-Kentucky Derby Drive and Via De Anza-Rancho Verde High School;
- Lasselle Street-Evans Road between Via De Anza-Rancho Verde High School and Ramona Expressway;
- Nason Street between Eucalyptus Avenue and Cottonwood Avenue;
- Nason Street between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue;
- Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard;
- Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue;
- Alessandro Boulevard between I-215 Northbound Ramps and Day Street;
- Alessandro Boulevard between Day Street and Elsworth Street;
- Alessandro Boulevard between Frederick Street and Graham Street;
- Alessandro Boulevard between Graham Street and Heacock Street;
- Alessandro Boulevard between Heacock Street and Indian Street;
- Alessandro Boulevard between Indian Street and Perris Boulevard;
- Alessandro Boulevard between Perris Boulevard and Kitching Street;
- Alessandro Boulevard between Kitching Street and Lasselle Street;
- Alessandro Boulevard between Lasselle Street and Nason Street;
- Alessandro Boulevard between Nason Street and Moreno Beach Drive;
- Cactus Avenue between I-215 Northbound Ramps-Old Frontage Road and Elsworth Street;
- Cactus Avenue between Elsworth Avenue and Frederick Street;
- Cactus Avenue between Frederick Street and Graham Street-Riverside Drive;

- Iris Avenue between Perris Boulevard and Kitching Street;
- Iris Avenue between Lasselle Street and Camino Flores;
- Iris Avenue between Camino Flores and Coachlight Court-Avenida De Circo;
- Iris Avenue between Coachlight Court-Avenida De Circo and Grande Vista Drive;
- Iris Avenue between Grande Vista Drive and Nason Street-Hillrose Lane; and
- Iris Avenue between Nason Street-Hillrose Lane and Driveway 1.

All these segments, except for the segment of Iris Avenue between Hillrose Lane and Driveway 1, are forecast to operate at an unsatisfactory LOS even under General Plan build-out without project conditions. Thus, the project contributes to the forecast deficiency at these segments. As such, the project has a cumulative impact at all these segments. All other roadway segments are forecast to operate at a satisfactory LOS.

Roadway segment levels of service under General Plan build-out with project conditions are illustrated in Figure 7-15.

Detailed Level of Service Worksheets are included in Appendix E.

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- Table 7-A: Existing Intersection Levels of Service
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- Table 7-C: Phase I Project Completion Year (2023) Intersection Levels of Service
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- Table 7-G: Phase III Project Completion Year (2038) Intersection Levels of Service
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Table 7-J: General Plan Build-out (2040) Roadway Segment Levels of Service
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8.0 QUEUING ANALYSIS

Tables 8-A through 8-E list the available turn-pocket storage lengths and summarize the 95th percentile back-of-queue lengths at the study intersections under existing, Phase I project completion year, Phase II project completion year, Phase III project completion year, and General Plan build-out conditions. The queues for the signalized intersections have been reported from Synchro, while for unsignalized intersections, the SimTraffic queues have been reported since Synchro does not appropriately report queues at unsignalized intersections. As shown in Tables 8-A through 8-E, queues for some of the movements are projected to exceed the existing available turn-pocket storage lengths under existing, Phases I, II, and III project completion years, and General Plan build-out without and with project conditions. With the exception of intersections adjacent to the project and project driveway intersections, the queuing results at the remaining study intersections have been included for informational purposes only.

Detailed queuing worksheets are included in Appendix E.

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9.0 CIRCULATION IMPROVEMENTS AND FUNDING SOURCES

9.1 RECOMMENDED IMPROVEMENTS

At intersections and roadway segments where the level of service is forecast to be unsatisfactory or where the project would have a significant impact, the City requires that improvements be identified to improve the LOS to meet the City's LOS standard. In consultation with City engineering staff, intersections and roadway segments with potential impacts were reviewed to identify any available physical improvements consistent with the City's General Plan to reduce or avoid the impact. Where such physical improvements were identified, the intersection and roadway segments were also reviewed to determine whether physical improvements would require significant encroachments on existing adjacent development or other improvements. Based on the results of this review and analysis, improvements have been recommended for impacted study intersections and roadway segments where consistent with the General Plan and existing adjacent development.

9.1.1 Recommended Improvements – Full Project Responsibility

Table 9-A illustrates the recommended improvements at the project driveways that the project will be required to implement as each phase of the project is constructed. As described in Table 9-A, Project Driveway 1 is forecasted to operate at a deficient LOS when Phase III is completed and no mitigations have been identified since Iris Avenue is already build-out to General Plan designation of six-lanes. For Project Driveway 2, specific improvements required with the completion of each phase is described in Table 9-A. Improvements recommended at Project Driveway 2 will result in this driveway operating at LOS D or better under all analysis scenarios.

9.1.2 Recommended Improvements – Fair Share or TUMF Contribution

Table 9-B illustrates the recommended improvements for study intersections under all scenarios. Figures 9-1A and 9-1B, 9-2A and 9-2B, 9-3A and 9-3B, 9-4A and 9-4B, and 9-5A and 9-5B illustrate the existing, Phases I, II, and III project completion years, and General Plan build-out with project with improvements study intersection geometrics and traffic control. Tables 9-C through 9-G illustrate the post-improvement intersection levels of service for the different scenarios. As r in these tables, and in Table 9-M, impacts at some of the intersections in some scenarios cannot be fully mitigated because, following review of the intersection, it was determined that the intersection is or will be built out to its General Plan designation, or that significant encroachment onto existing adjacent development would occur if built out to General Plan designation, and no additional physical improvements are available. As such, these intersections will continue to operate at a deficient LOS.

Tables 9-H through 9-L illustrate the proposed roadway segment improvements and the corresponding levels of service for the different scenarios. As shown in these tables, and in Table 9-N, multiple roadway segments are or will be built out to their General Plan designations, or significant encroachment onto existing adjacent development would occur if the segment is built out to General Plan designation, and no additional physical improvements are available. Thus, these segments will continue to operate at a deficient LOS.

It should be noted that recommended improvements covered through TUMF are not considered adequate mitigation measures. This is because there is no guaranteed timeline for implementation of these improvements through the TUMF program. Therefore, impacts at intersections or roadway segments where mitigations are included through the TUMF program should be considered significant and unavoidable.

9.2 FUNDING SOURCES AND MECHANISMS

Where there is a funding mechanism (fee program) for the recommended improvements, payment into the fee program would be considered sufficient project obligation to alleviate project impacts. At study locations where the addition of project traffic creates a direct significant impact (existing with project conditions) and there is no funding mechanism in place, the project will be responsible for the implementation of the improvement. At locations where the project adds to or creates a forecast deficiency and there is no funding mechanism in place (project completion and cumulative conditions), the project is responsible for its fair-share payment.

9.2.1 TUMF Program

The underlying purpose of the TUMF program is "the need to establish a comprehensive funding source to mitigate the cumulative regional transportation impacts of new development on regional arterial highways." As new development occurs in western Riverside County, the cumulative transportation impacts of this new development are reflected in increased demand for transportation infrastructure leading to decreased levels of service, increased delay and increased congestion on regional transportation facilities, and an overall decline in regional mobility. Therefore, the need to invest in additional transportation infrastructure to meet the increased travel demand and to sustain pre-development traffic conditions to "keep traffic flowing" represents the fundamental premise of the TUMF program.

9.2.2 Project Fair Share

In the absence of a fee program, where mitigation has been identified to reduce or avoid the project's impact on the roadway network, the project shall pay its fair share of the cost of the improvement. The project's fair share has been calculated based on project traffic as a percentage of total growth from existing to General Plan build-out conditions.

Tables 9-M and 9-N summarize the project fair share corresponding to the improvements recommended and the funding programs in place that covers recommended improvements for intersections and roadway segments, respectively.

As shown in Tables 9-M and 9-N, several intersections and roadway segments will continue to have impacts despite buildout to their full General Plan designation, or would require significant encroachments on existing adjacent development if built out to their General Plan designations, and therefore further physical expansion is not recommended. If the review of these intersections and roadway segments concluded that no other physical improvements are available consistent with the

General Plan (e.g., re-striping or signal optimization) impacts will remain, as shown in Tables 9-M and 9-N. To mitigate the project cumulative impacts at these locations, the project shall pay a fair share contribution for the development of trip reduction and/or trip redistribution strategies on the City's roadway network. The fair share contribution for this purpose will be based on the percentages shown in Tables 9-M and 9-N. A fair share cost calculation table will be required prior to construction of the project.

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- Table 9-I: Phase I Project Completion Year (2023) with Project with Improvements Roadway Segment Levels of Service
- Table 9-J: Phase II Project Completion Year (2032) with Project with Improvements Roadway Segment Levels of Service
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- Table 9-L: General Plan Build-out (2040) with Project with Improvements Roadway Segment Levels of Service
- Table 9-M: Intersection Improvement Funding Mechanism and Fair Share
- Table 9-N: Roadway Segment Improvement Funding Mechanism and Fair Share

Figure 9-1A: Existing with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

Figure 9-1B: Existing with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

Figure 9-2A: Phase I Project Completion Year (2023) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

Figure 9-2B: Phase I Project Completion Year (2023) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

Figure 9-3A: Phase II Project Completion Year (2032) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

Figure 9-3B: Phase II Project Completion Year (2032) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

Figure 9-4A: Phase III Project Completion Year (2038) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

Figure 9-4B: Phase III Project Completion Year (2038) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

Figure 9-5A: General Plan Build-out (2040) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 1-32)

Figure 9-5B: General Plan Build-out (2040) with Project with Improvements Study Intersection Geometrics and Traffic Control (Int. 33-64)

Table 9-A: Recommended Improvements for Intersections – Project Responsibility

Table 9-B: Recommended Improvements for Intersections – Fair Share or TUMF Contribution (Page 1 of 2)

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Table 9-K: Phase III Project Completion Year (2038) with Project with Improvements Roadway Segments Levels of Service

Table 9-L: General Plan Build-out (2040) with Project with Improvements Roadway Segments Levels of Service

Table 9-M: Intersection Improvements Funding Mechanism and Fair Share
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Table 9-M: Intersection Improvements Funding Mechanism and Fair Share
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Table 9-N: Roadway Segment Improvements Funding Mechanism and Fair Share
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Table 9-N: Roadway Segment Improvements Funding Mechanism and Fair Share
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Table 9-N: Roadway Segment Improvements Funding Mechanism and Fair Share
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10.0 SIGNAL WARRANT ANALYSIS

A peak hour signal warrant analysis was conducted at the intersection of Pearl Lane-Oliver Street/ Alessandro Boulevard for existing, Phases I, II, and III project completion years, and General Plan build-out conditions. As stated in the City's TIA guidelines, a peak hour signal warrant analysis shall utilize the peak hour warrants from the most recent edition the *California Manual on Uniform Traffic Control Devices (CAMUTCD)*. Therefore, this analysis is based on the provisions of the CAMUTCD, 2014, Chapter 4C *Traffic Control Signal Needs Studies* for Warrant 3 – Peak Hour. The peak hour signal warrant is intended for use where traffic conditions are such that for a minimum of one hour on an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. Figures 10-1, 10-2, 10-3, 10-4, and 10-5 illustrate the signal warrants for existing, Phases I, II, and III project completion years, and General Plan build-out conditions, respectively. Based on the signal warrant analysis, a signal will be warranted at the intersection of Pearl Lane-Oliver Street/Alessandro Boulevard in all the five scenarios.

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Figure 10-1: Existing Conditions Peak Hour Warrant

Figure 10-2: Phase I Project Completion Year (2023) Conditions Peak Hour Warrant

Figure 10-3: Phase II Project Completion Year (2032) Conditions Peak Hour Warrant

Figure 10-4: Phase III Project Completion Year (2038) Conditions Peak Hour Warrant

Figure 10-5: General Plan Build-out (2040) Conditions Peak Hour Warrant

11.0 SITE ACCESS ANALYSIS

The City requires a site access analysis evaluating project driveways to identify LOS and queuing issues at the driveways. The purpose of this analysis is to provide recommendations that will help the driveways operate at satisfactory LOS and meet the vehicle queuing requirements. As such, a driveway analysis was conducted for all scenarios and appropriate improvements have been recommended to address circulation needs at these locations. Tables 11-A through 11-E illustrate the LOS and queues at these driveways without and with these proposed improvements.

Based on the analysis of these driveways, the following improvements are recommended for satisfactory operations at this location:

- **Project Driveway 2:** Under Phase I project completion conditions, extend the existing eastbound left-turn storage by 30 feet. Under Phase II project completion conditions, remove existing raised median on Iris Avenue for the eastbound approach, restripe eastbound approach to accommodate a second eastbound left-turn lane, and extend the dual left-turn pocket up to 400 feet. Additionally, the existing southbound left-turn lane storage needs to be extended to 200 feet (back to the existing roundabout) under Phase II project completion conditions.

Figure 11-1 is a conceptual striping plan illustrating the proposed driveway improvements. As shown in Tables 11-A through 11-E, with implementation of the proposed improvements, the driveways are forecast to operate at a satisfactory LOS and meet the queuing requirements at these locations.

11.1 LIST OF CHAPTER 11.0 FIGURES AND TABLES

Figure 11-1: Conceptual Striping Plan with Proposed Improvements along Project Frontage

12.0 SUMMARY AND CONCLUSIONS

The proposed Kaiser Permanente Moreno Valley Medical Center Master Plan Project will be replacing and adding onto existing uses at the current project site, which includes a 130,000 sf 100-bed hospital, along with two medical office buildings and education trailers totaling approximately 85,000 sf. The project has been proposed to be built in three phases. Under full build-out condition, the project will generate 12,921 net daily trips, with 1,056 net trips occurring during the a.m. peak hour and 1,216 net trips occurring during the p.m. peak hour.

12.1 EXISTING CONDITIONS SUMMARY

Based on the significance criteria as discussed in the Significance Threshold section of this report, under existing conditions, a significant project impact occurs at seven intersections and three roadway segments, while a significant direct impact occurs at two segments. With the implementation of the improvements listed in Chapter 9.0 of this report, some of the intersections and roadway segments are forecast to operate at a satisfactory LOS, while the impacts at other intersections and roadway segments cannot be mitigated as discussed in Chapter 9.0

12.2 PHASE I PROJECT COMPLETION YEAR (2023) CONDITIONS SUMMARY

Based on the significance criteria as discussed in the Significance Threshold section of this report, under Phase I project completion conditions, a cumulative project impact occurs at 13 intersections and six roadway segments. With the implementation of the improvements listed in Chapter 9.0 of this report, some of the intersections and roadway segments are forecast to operate at a satisfactory LOS, while the impacts at other intersections and roadway segments cannot be mitigated as discussed in Chapter 9.0

12.3 PHASE II PROJECT COMPLETION YEAR (2032) CONDITIONS SUMMARY

Based on the significance criteria as discussed in the Significance Threshold section of this report, under Phase II project completion conditions, a cumulative project impact occurs at 22 intersections and 19 roadway segments. With the implementation of the improvements listed in Chapter 9.0 of this report, some of the intersections and roadway segments are forecast to operate at a satisfactory LOS, while the impacts at other intersections and roadway segments cannot be mitigated as discussed in Chapter 9.0.

12.4 PHASE III PROJECT COMPLETION YEAR (2038) CONDITIONS SUMMARY

Based on the significance criteria as discussed in the Significance Threshold section of this report, under Phase III project completion conditions, a cumulative project impact occurs at 30 intersections and 32 roadway segments. With the implementation of the improvements listed in Chapter 9.0 of this report, some of the intersections and roadway segments are forecast to operate at a satisfactory LOS, while the impacts at other intersections and roadway segments cannot be mitigated as discussed in Chapter 9.0

12.5 GENERAL PLAN BUILD-OUT (2040) CONDITIONS SUMMARY

Based on the significance criteria as discussed in the Significance Threshold section of this report, under General Plan build-out conditions, a cumulative project impact occurs at 31 intersections and 35 roadway segments. With the implementation of the improvements listed in Chapter 9.0 of this report, some of the intersections and roadway segments are forecast to operate at a satisfactory LOS, while the impacts at other intersections and roadway segments cannot be mitigated as discussed in Chapter 9.0.

12.6 SITE ACCESS ANALYSIS

Based on the analysis of the project driveways, the following improvements are recommended for satisfactory operations at this location:

- **Project Driveway 2:** Under Phase I project completion conditions, extend the existing eastbound left-turn storage by 30 feet. Under Phase II project completion conditions, remove existing raised median on Iris Avenue for the eastbound approach, restripe eastbound approach to accommodate a second eastbound left-turn lane, and extend the dual left-turn pocket up to 400 feet. Additionally, the existing southbound left-turn lane storage needs to be extended to 200 feet (back to the existing roundabout) under Phase II project completion conditions.

APPENDIX A:

SCOPING AGREEMENT

APPENDIX B:

TRAFFIC COUNT SHEETS

APPENDIX C:

VOLUME DEVELOPMENT WORKSHEETS

APPENDIX D:

INTERSECTION LEVEL OF SERVICE WORKSHEETS

APPENDIX E:

QUEUING ANALYSIS WORKSHEETS

CHAPTER 4
MITIGATION MONITORING AND REPORTING PROGRAM

California Public Resources Code Section 21081.6 requires that, upon certification of an EIR, "the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation."

This chapter contains the mitigation monitoring and reporting program (MMRP) that has been developed for the Kaiser Moreno Valley Medical Center Project (project or proposed project). This MMRP has been developed in compliance with Public Resources Code Section 21081.6 and Section 15097 of the CEQA Guidelines. The mitigation measures in the table are coded by alphanumeric identification consistent with the EIR. The following items are identified for each mitigation measure:

- **Mitigation Monitoring.** This section of the MMRP lists the stage of the proposed project during which the mitigation measure would be implemented and the stage during which proper implementation would be monitored and verified. It also lists the agency that is responsible for ensuring that the mitigation measure is implemented and that it is implemented properly.
- **Verification of Compliance.** This section of the MMRP provides a location for the implementing party and/or enforcing agency to make notes and to record their initials and the compliance date for each mitigation measure.

The City of Moreno Valley must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of project approval.

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
Biological Resources						
MM-BIO-1. To avoid potential direct impacts to burrowing owl, a burrowing owl preconstruction survey shall be conducted by a qualified biologist no more than 30 days prior to ground-disturbing project activities. If burrowing owls are present, occupied burrows shall be avoided. The preconstruction survey, avoidance, and any relocation of burrowing owls, if present, shall be conducted in accordance with current MSHCP survey guidelines and protocols.	Prior to construction	Qualified biologist surveys for burrowing owl	City of Moreno Valley			
MM-BIO-2. All vegetation removal and ground-disturbance activities shall be planned outside the nesting season for raptors (February 1 to August 15) and outside the peak nesting season for birds (March 1 to August 15) if practicable. If vegetation removal would occur during those time periods, a preconstruction survey for active nests shall be conducted by a qualified biologist no more than one week prior to the onset of ground-disturbance activities. If active nests are found on the site, disturbance or removal of the nest shall be avoided until the young have fledged and the nest is no longer active. Depending on the species, site conditions, and proposed construction activities near the active nest, a buffer distance may be prescribed, as determined by a qualified biologist.	Prior to construction	Schedule ground-disturbing activities outside nesting season; if not possible, conduct pre-construction surveys	City of Moreno Valley			
MM-BIO-3. Consultation with the resource agencies shall be conducted prior to implementing Phases II and II of the project to determine the Regional Water Quality Control Board (RWQCB) and/or California Department of Fish and Wildlife (CDFW) will indeed take jurisdiction over the existing detention basin. If jurisdiction is determined, the Applicant will mitigate for the loss of 0.51-acre of waters of the state subject to RWQCB and CDFW jurisdiction, and an additional 0.54-acre of streambed under CDFW jurisdiction only. The project applicant will apply for A Waste Discharge Requirement (WDR) from the RWQCB and a Streambed Alteration Agreement from CDFW prior to the start of construction of Phases II and III of the project. Mitigation required for these permits would include compensatory habitat-based mitigation at a minimum 2:1 ratio for impacts to non-wetland waters of the state and CDFW streambed. Mitigation may include on-site restoration of waters	Prior to Phase II and Phase III	Consultation with RWQCB and/or CDFW; apply for a Waste Discharge Requirement	City of Moreno Valley, RWQCB and/or CDFW			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
through implementation of an approved Habitat Mitigation Monitoring Plan or purchase of off-site credits through an agency-approved mitigation bank such as the Soquel Canyon Mitigation Bank. Coordination with the resource agencies will determine the final mitigation ratio and strategy. Documentation shall be provided to the City.						
Cultural Resources						
MM-CUL-1. The applicant shall ensure that all ground-disturbing activities are ceased and treatment plans are implemented if archaeological resources are encountered. In the event that archaeological resources are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 100 feet shall be established around the find where construction activities shall not be allowed to continue until a qualified archaeologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards. Should the newly discovered artifacts be determined to be prehistoric, Native American Tribes/Individuals should be contacted and consulted and Native American construction monitoring should be initiated. The Applicant and City shall coordinate with the archaeologist to develop an appropriate treatment plan for the resources. The plan may include implementation of archaeological data recovery excavations to address treatment of the resource along with subsequent laboratory processing and analysis. In the event that a cultural resource is encountered during ground-disturbing activities, the landowner(s) shall relinquish ownership of all such resources, including sacred items, burial goods, and all	During construction	Construction contractor shall cease ground-disturbing activities in the event of the discovery of a possible archaeological resource	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
archaeological artifacts and non-human remains. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Community Development Department, Planning Division: 1. Accommodate the process for Preservation-In-Place/Onsite reburial of the discovered items with the consulting Native American tribes or bands, as detailed in the treatment plan prepared by the professional archaeologist. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed; 2. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and/or 3. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default. Once artifact analysis is completed, a final written report detailing the results of all research procedures and interpretation of the site shall be submitted to the lead agency for review and approval.						
MM-CUL-2. In the event that any human remains are unearthed during project construction, the City of Moreno Valley and the Applicant shall comply with State Health and Safety Code Section 7050.5. The City of Moreno Valley and the Applicant shall immediately notify the Riverside	During construction	Contractor shall comply with State Health and Safety Code Section	City of Moreno Valley, NAHC			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
County Coroner's office and no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition. If remains are determined to be of Native American descent, the coroner has 24-hours to notify the Native American Heritage Commission (NAHC). The NAHC shall identify the person(s) thought to be the Most Likely Descendant (MLD). After the MLD has inspected the remains and the site, they have 48 hours to recommend to the landowner the treatment or disposal, with appropriate dignity, of the human remains and any associated funerary objects. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the landowner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and cultural items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the MLD all reasonable options regarding the MLDs preferences for treatment. If the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.		7050.5 in the event of discovery of human remains				

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
Geology and Soils						
MM-GEO-1. Kaiser Permanente shall include in the Phase I project design all recommendations provided in the site-specific geotechnical investigations prepared for the proposed Diagnostic and Treatment Building and proposed Energy Center (Appendices E-1 and E-2). These recommendations include but are not limited to those related to ground improvements, drainage improvements, foundation design, and pavement design. Recommendations for remedial actions related to geotechnical concerns shall be implemented by Kaiser Permanente, to the satisfaction of the City of Moreno Valley.	Prior to and throughout construction	Kaiser shall integrate all design recommendations into project	City of Moreno Valley			
MM-GEO-2. A geotechnical study shall be prepared during the design phases for Phases II and III of the program. Recommendations for remedial actions related to geotechnical concerns, provided by the geotechnical consultant, shall be implemented by Kaiser Permanente, to the satisfaction of the City of Moreno Valley.	During design phases for Phase II and Phase III	Kaiser shall ensure preparation of geotechnical studies	City of Moreno Valley			
MM-GEO-3. The Office of Statewide Health Planning and Development's (OSHPD's) Facilities Development Division shall review and approve the plans and specifications of the proposed medical office building, hospital, and related hospital facilities.	Prior to construction	Kaiser shall submit plans to OSHPD for approval prior to construction	OSHPD's Facilities Development Division, City of Moreno Valley			
MM-GEO-4. Prior to the issuance of a grading permit, the Applicant shall retain a professional paleontologist, who meets the qualifications set forth by the Society of Vertebrate Paleontology. Prior to commencement of excavation activities, the paleontologist shall conduct a Paleontological Sensitivity Training for all construction personnel that will conduct earthwork or grading activities. The training shall include a handout and shall focus on how to identify paleontological resources that may be encountered during earthmoving activities, and the procedures to be followed in such an event, including who to contact and the appropriate avoidance measures that need to be undertaken until the find(s) can be properly evaluated; the duties of paleontological monitors; notification and other procedures to follow upon discovery of resources; and the general steps a qualified	Prior to issuance of grading permit, Prior to construction	Kaiser shall retain a professional paleontologist, Paleontologist shall conduct sensitivity training	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
professional paleontologist would follow in conducting a salvage investigation if one is necessary. All new construction personnel that will conduct earthwork or grading activities must take the Paleontological Sensitivity Training prior to beginning work on the project and the professional paleontologist shall make themselves available to provide the training on an as-needed basis.						
MM-GEO-5. The applicant shall ensure the monitoring of construction excavations for paleontological resources is required for all excavations in older Quaternary alluvial fan deposits. Prior to the issuance of a grading permit, the Applicant shall retain a qualified paleontological monitor, who will work under the guidance and direction of a professional paleontologist, and who meets the qualifications set forth by the Society of Vertebrate Paleontology. The paleontological monitor shall have the authority to temporarily redirect earthmoving activities in the event that suspected paleontological resources are unearthed during project construction. The paleontological monitor shall be present during all construction excavations including, but not limited to grading, trenching, boring, and clearing/grubbing. Multiple earth-moving construction activities may require multiple paleontological monitors. The frequency of monitoring shall be based on the rate of excavation and grading. Monitoring may be reduced if potentially fossiliferous units are not present in the subsurface, or if present, are determined upon exposure and examination by the professional paleontologist to have a low potential to contain or yield fossil resources.	Prior to issuance of grading permit, During construction	Kaiser shall retain a professional paleontologist, Paleontologist shall halt construction near suspected paleontological resources	City of Moreno Valley			
MM-GEO-6. The applicant shall ensure that in the event that paleontological resources and/or unique geological features are unearthed during ground-disturbing activities, all ground-disturbing activities shall be halted or diverted away from the vicinity of the find in order to evaluate the resource. A buffer area of at least 100 feet shall be established around the find where construction activities shall not be allowed to continue until appropriate paleontological treatment plan has been approved by the Applicant and the City of Moreno Valley. Work shall be allowed to continue outside of the buffer area. The Applicant and City of Moreno Valley shall coordinate with a	Prior to issuance of grading permit, During construction	Kaiser shall retain a professional paleontologist, Paleontologist shall halt construction near suspected paleontological resources	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
professional paleontologist, who meets the qualifications set forth by the Society of Vertebrate Paleontology, to develop an appropriate treatment plan for the resources. Treatment may include implementation of paleontological salvage excavations to remove the resource along with subsequent laboratory processing and analysis or preservation in place. At the paleontologist's discretion and to reduce construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing. Recovered specimens shall be properly prepared to a point of identification and permanent preservation, including screen washing sediments to recover small invertebrates and vertebrates, if necessary. Identification and curation of specimens into a professional, accredited public museum repository with a commitment to archival conservation and permanent retrievable storage is required for significant discoveries.						
MM-GEO-7. The applicant shall ensure that a professional paleontologist prepares a report summarizing the results of the monitoring and any salvaging efforts, the methodology used in these efforts, as well as a description of any fossils collected and their significance, as well as any necessary maps and graphics to accurately record the original location of any such resources. The report shall be submitted to the Applicant, the City of Moreno Valley, the San Bernardino County Natural History Museum, Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the required mitigation measures.	During construction in the event paleontological resources are encountered	Paleontologist shall prepare summary report	City of Moreno Valley			
Hydrology and Water Quality						
M-HYD-1. Treatment control Best Management Practice (BMP) features proposed for the eastern project area, including underground storage vaults and a modular wetland system (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase I of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley.	During construction of Phase I	Construction treatment control BMPs per the approved WQMP	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
MM-HYD-2. Treatment control BMP features proposed for the western project area, including multiple bioretention basins (Figure 4.9-4, Proposed Drainage), shall be constructed during Phase II of the project. These treatment control BMPs shall be constructed in accordance with the project Water Quality Management Plan (Appendix G-1) and approved by the City of Moreno Valley.	During construction of Phase II	Construction treatment control BMPs per the approved WQMP	City of Moreno Valley			
MM-HYD-3. Consistent with the Design Handbook for Low Impact Development Best Management Practices (Riverside County Flood Control Water Conservation District 2011), Section 3.5 – Bioretention Basins, Inspection and Maintenance Schedule, the following inspection and maintenance activities shall be implemented following basin construction: 1. Ongoing, the applicant shall: a. Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance areas. b. Remove trash and debris. c. Replace damaged grass and/or plants. d. Replace surface mulch layer as needed to maintain a 2-3 inch soil cover. 2. After storm events, the applicant shall inspect areas for ponding. 3. Annually, the applicant shall inspect/clean inlets and outlets.	Following basin construction in Phase II	Incorporate Low Impact Development BMPs	City of Moreno Valley, Riverside County Flood Control Water Conservation District			
Noise						
MM-NOI-1. Prior to grading permit issuance, and to help ensure construction noise levels at community noise-sensitive receptors (e.g., residences) are compliant with City of Moreno Valley (City) requirements and adopted Federal Transit Administration guidance, the applicant or its construction contractor(s) shall implement the following: • Construction noise reduction methods such as shutting off idling equipment, and usage of electric-driven air compressors and	Prior to issuance of grading permit	Kaiser shall implement noise-reduction methods	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
similar power tools in lieu of diesel-powered equipment, shall be applied where feasible. • During construction, stationary operating construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors. When increased distance cannot be used to help reduce noise exposure at a sensitive receptor due to loud operation of stationary equipment, apply feasible on-site noise attenuation measures that may include temporary noise barriers (e.g., acoustical blankets or field-erected wooden walls) or the placement of on-site tanks, containers, or trailers so that direct noise source-to-receptor path(s) are occluded. • During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors while being located on the project site or on existing developed areas. • Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners and residents to contact the job superintendent if necessary. In the event the City receives a complaint, appropriate response (that may include corrective actions, as warranted by investigation of the received complaint and determination of noise exceedance) shall be implemented and a report of the response and/or action provided to the reporting party in a reasonable timeframe.						
MM-NOI-2. The construction contractor shall require that all construction equipment be operated with original factory-installed or factory-approved noise control equipment (e.g., exhaust mufflers and silencers, intake filters, and engine shrouds as appropriate) that is properly installed and in good working order. Enforcement shall be accomplished via field inspections by applicant or third-party personnel during construction activities to the satisfaction of the City of Moreno Valley Public Works Department.	During construction	The construction contractor shall ensure construction equipment is operated appropriately	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
MM-NOI-3. The applicant shall require that the combined outdoor noise emission from operation of the two emergency generators (i.e., 1 x 1-MW and 1 x 2-MW gensets), including sound attenuated exhaust and casing radiated (and any air intakes or heat discharge) would not exceed 55 dBA Leq at a distance of 200 feet. Achievement of this acoustical performance metric shall be demonstrated either by on-site field noise testing or via engineering specifications (e.g., expected sound pressure levels at a defined distance from the equipment) provided by the equipment supplier and/or manufacturer and disclosed as part of the final project design (and reviewed by a qualified acoustical consultant) prior to equipment submittal approval and project construction.	During operation	Upon installation of emergency generators, Kaiser shall demonstrate that noise levels are achieved	City of Moreno Valley			
MM-NOI-4. The applicant shall require that when project design details are finalized, and prior to submission of the final project design to the City, an acoustical analysis of aggregate project operation noise from expected stationary sources of sound emission (e.g., HVAC systems) shall be conducted or reviewed by a qualified acoustical consultant (e.g., Institute of Noise Control Engineering [INCE] Board Certified Member or as otherwise approved by the City of Moreno Valley). Using reference sound level data provided by (and thus the responsibility of) equipment suppliers as part of the modeling input parameters, this predictive analysis shall evaluate aggregate noise levels from these stationary sound sources at the same assessment positions per each of three project phases as appearing in Table 4.11-9. The results of this acoustical analysis shall be summarized in a concise report, and include descriptions of equipment noise control, sound transmission path abatement, and other conditions as reflected by the final project design submitted to the City that contribute to expected attainment of noise levels that are compliant with applicable daytime and nighttime thresholds at these positions. This analysis shall be performed to include two operation noise scenarios per phase: with and without operation of the proposed emergency generators.	Prior to submission of final project design for Phase I, Phase II and Phase III	Have prepared and submit to City an acoustical analysis from expected stationary equipment	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
Transportation						
Phase I Completion Year (2023) with Project Traffic Conditions						
Intersections						
MM-TRA-1. Intersection No. 29 – Lasselle Street/Alessandro Boulevard: Pay TUMF fee for the following improvements: add eastbound through (EBT) and westbound through (WBT) lanes.	Prior to construction – Phase I	Pay TUMF fee	City of Moreno Valley and Western Riverside Council of Governments (WRCOG)			
MM-TRA-2. Intersection No. 39 – Evans Road/Ramona Expressway: Pay fair-share (1.6%) for the following improvements: add right-turn overlap phasing for westbound right (WBR) and southbound right (SBR) turn lanes.	Prior to construction – Phase I	Pay fair-share fee	City of Perris			
MM-TRA-3. Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue: Pay fair-share (26.8%) for the following improvements: add southbound left (SBL) turn lane.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
MM-TRA-4. Intersection No. 50 – Pearl Lane - Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the following improvement: install traffic signal.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
MM-TRA-5. Intersection No. 56 – Pearl Lane - Moreno Beach Drive/SR-60 Eastbound Ramps: Pay TUMF fee for the following improvements: add second southbound through (SBT) lane and eastbound right (EBR) turn lane.	Prior to construction – Phase I	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-6. Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay fair-share (8.0%) for the following improvements: add second southbound through (SBT) lane and northbound through (NBT) lane.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
MM-TRA-7. Intersection No. 30 – Lasselle Street/Cactus Avenue: Pay fair-share (16.3%) for the following improvement: add right-turn overlap phasing for westbound right (WBR) turn lane.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
MM-TRA-8. Intersection No. 33 – Lasselle Street/Krameria Avenue: Pay fair-share (9.66%) for the following improvements: restripe eastbound approach from eastbound left (EBL), eastbound through (EBT) and eastbound right (EBR) to two EBL, EBT, and EBTR, restripe westbound approach from westbound left (WBL), westbound through (WBT), and westbound right (WBR) to WBL, WBT and WBTR.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
MM-TRA-9. Intersection No. 27 – Kitching Street/Cactus Avenue: Pay fair share (29.6%) for the following improvements: restripe southbound right (SBR) to a southbound through right (SBTR), widen the south leg of the intersection for a second receiving lane.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
MM-TRA-54. Intersection No. 8 – Elsworth Street/Cactus Avenue: Pay fair share (6.24%) for the following improvement: widen the south leg of the intersection to add a northbound through lane (NBT).	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
Roadway Segments						
MM-TRA-10. Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard: Pay fair-share (17.3%) to improve the roadway segment to the classification of four-lane divided arterial.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
MM-TRA-11. Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue: Pay fair-share (15.2%) to improve the roadway segment to the classification of four-lane divided arterial.	Prior to construction – Phase I	Pay fair-share fee	City of Moreno Valley			
MM-TRA-12. Alessandro Boulevard between Kitching Street and Lasselle Street: Pay TUMF fee to improve the roadway segment to the classification of four-lane divided arterial.	Prior to construction – Phase I	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-13. Alessandro Boulevard between Lasselle Street and Nason Street: Pay TUMF fee to improve the roadway segment to the classification of four-lane divided arterial.	Prior to construction – Phase I	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-14. Alessandro Boulevard between Nason Street and Moreno Beach Drive: Pay TUMF fee to improve the roadway segment to the classification of a four-lane divided arterial.	Prior to construction – Phase I	Pay TUMF fee	City of Moreno Valley and WRCOG			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
MM-TRA-15. Cactus Avenue between I-215 Northbound Ramps – Old Frontage Road and Elsworth Street: Pay TUMF/fair-share fee to widen roadway from four lanes to six lanes.	Prior to construction – Phase I	Pay TUMF fee and fair-share fee	City of Moreno Valley (proportional fair-share), March Joint Powers Authority (proportional fair-share) and WRCOG (TUMF)			
Phase II Completion Year (2032) with Project Traffic Conditions						
Intersections						
MM-TRA-16. Intersection No. 5 – I-215 northbound ramps - Old 215 Frontage Road/Cactus Avenue: Pay TUMF fee for the following improvements: interchange redesign and widening of the bridge to 6 lanes. Add second northbound left (NBL) and northbound through (NBT), second southbound left (SBL), dedicated southbound right (SBR) with overlap phasing, EBT, EBR, WBT and WBR with overlap phasing.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-17. Intersection No. 6 – Day Street/Alessandro Boulevard: Pay TUMF fee for the addition of a westbound through (WBT) lane. Pay fair-share (1.0%) for the following improvements: convert north-south movement to protected phasing, add southbound right, add second eastbound left (EBL) and second westbound left (WBL), add overlap phasing to westbound right (WBR).	Prior to construction – Phase II	Pay TUMF and fair-share fees	City of Moreno Valley and WRCOG			
MM-TRA-18. Intersection No. 11 – Graham Street/Alessandro Boulevard: Pay TUMF fee for the addition of an eastbound through (EBT) lane.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-19. Intersection No. 25 – Perris Boulevard/Harley Knox Boulevard: Pay fair-share (1.3%) for the following improvements: add right-turn overlap phasing for westbound right (WBR) and southbound right (SBR) movements.	Prior to construction – Phase II	Pay fair-share fee	City of Perris			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
MM-TRA-20. Intersection No. 29 – Lasselle Street/Alessandro Boulevard: Pay fair-share (4.3%) for the addition of a southbound through (SBT) lane.	Prior to construction – Phase II	Pay fair-share fee	City of Moreno Valley			
MM-TRA-21. Intersection No. 45 – Nason Street/Eucalyptus Avenue: Pay fair-share (6.1%) for the following improvements: add eastbound right (EBR) turn lane, northbound right (NBR) turn lane, and southbound right (SBR) turn lanes. Add right-turn overlap phasing for eastbound right (EBR), northbound right (NBR), and southbound right (SBR) movements.	Prior to construction – Phase II	Pay fair-share fee	City of Moreno Valley			
MM-TRA-22. Intersection No. 56 – Pearl Lane – Moreno Beach Drive/SR-60 Eastbound Ramps: Pay TUMF fee for the following improvements: add second northbound through (NBT), add second southbound through (SBT), restripe southbound through left to southbound left and restripe eastbound through left through to eastbound left-through-right.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-23. Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay TUMF fee for the addition of second eastbound through (EBT) lane and second westbound through (WBT) lane, second northbound through (NBT) lane, second southbound through (SBT) lane and northbound right (NBR) lane. Pay fair-share (8.0%) for northbound right overlap phasing.	Prior to construction – Phase II	Pay TUMF and fair-share fees	City of Moreno Valley and WRCOG			
MM-TRA-24. Intersection No. 19 – Perris Boulevard/Alessandro Boulevard: Pay fair-share (2.7%) for the following improvements: add eastbound through (EBT) by removing the center median along both east and west leg approaches and shifting the left-turn lanes to accommodate the through lane. Add right-turn overlap phasing for the NBR, SBR, and EBR. No further mitigations feasible due to right-of-way constraints.	Prior to construction – Phase II	Pay fair-share fee	City of Moreno Valley			
MM-TRA-25. Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue: Pay fair-share (26.8%) for the following improvements: a second southbound right (SBR). No further mitigations feasible due to right-of-way constraints.	Prior to construction – Phase II	Pay fair-share fee	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
Roadway Segments						
MM-TRA-26. Lasselle Street-Evans Road between Via De Anza - Rancho Verde High School and Ramona Expressway: Pay fair-share (4.0%) to improve the roadway segment to the classification of a six-lane arterial.	Prior to construction – Phase II	Pay fair-share fee	Cities of Moreno Valley and Perris			
MM-TRA-27. Nason Street-Evans Road between Cottonwood Avenue and Alessandro Boulevard: Pay fair-share (9.0%) to improve the roadway segment to the classification of a six-lane arterial.	Prior to construction – Phase II	Pay fair-share fee	City of Moreno Valley			
MM-TRA-28. Moreno Beach Drive between SR-60 Eastbound Ramps and Eucalyptus Avenue: Pay fair-share (7.4%) to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase II	Pay fair-share fee	City of Moreno Valley			
MM-TRA-29. Alessandro Boulevard between Day Street and Elsworth Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-30. Alessandro Boulevard between Frederick Street and Graham Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-31. Alessandro Boulevard between Graham Street and Heacock Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-32. Alessandro Boulevard between Kitching Street and Lasselle Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-33. Alessandro Boulevard between I-215 northbound ramps and Day Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase II	Pay TUMF fee	City of Moreno Valley and WRCOG			
Phase III Completion Year (2038) with Project Traffic Conditions						
Intersections						
MM-TRA-34. Intersection No. 9: Frederick Street/Alessandro Boulevard: Pay TUMF fee for the addition of an eastbound through (EBT) lane.	Prior to construction – Phase III	Pay TUMF fee	City of Moreno Valley and WRCOG			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
MM-TRA-35. Intersection No. 11: Graham Street/Alessandro Boulevard: Pay TUMF fee for the addition of second eastbound through (EBT) lane and a second westbound through (WBT) lane.	Prior to construction – Phase III	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-36. Intersection No. 13: Heacock Street/Alessandro Boulevard: Pay fair-share (2.6%) for the following improvements: add second eastbound left (EBL) turn lane.	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-37. Intersection No. 22: Perris Boulevard/Krameria Avenue: Pay fair-share (1.5%) to restripe westbound approach to westbound left (WBL) and shared westbound through-right (WBTR).	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-38. Intersection No. 25: Perris Boulevard/Harley Knox Boulevard: Pay fair-share (1.3%) for the addition of an eastbound left (EBL) turn lane and add right-turn overlap phasing for westbound right (WBR) and southbound right (SBR) movements.	Prior to construction – Phase III	Pay fair-share fee	City of Perris			
MM-TRA-39. Intersection No. 29: Lasselle Street/Alessandro Boulevard: Pay TUMF fee for the addition of a second westbound through (WBT) and a second eastbound through (EBT) lane.	Prior to construction – Phase III	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-40. Intersection No. 47: Nason Street/Alessandro Boulevard: Pay TUMF fee for the addition of a westbound through (WBT) lane.	Prior to construction – Phase III	Pay TUMF fee	City of Moreno Valley and WRCOG			
MM-TRA-41. Intersection No. 49 – Nason Street-Hillrose Lane/Iris Avenue; pay fair-share (26.8%) for the addition of a southbound right (SBR) turn lane.	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-42. Intersection No. 50: Peal Lane-Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the addition of an eastbound left (EBL) turn lane.	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-43. Intersection No. 57: Moreno Beach Drive/Eucalyptus Avenue: Pay fair share (5.4%) for the following improvements: add southbound left (SBL) and southbound through (SBT).	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-44. Intersection No. 58: Moreno Beach Drive/Cottonwood Avenue: Pay fair-share (9.4%) for the following improvements: add westbound left (WBL), and restripe westbound approach as westbound	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
left (WBL) and shared westbound through-right (WBTR). Change the split phasing for the east-west approach to permitted phasing.						
MM-TRA-45. Intersection No. 59 – Moreno Beach Drive/Alessandro Boulevard: Pay fair-share (8.0%) for addition of second westbound left (WBL) turn-lane.	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-46. Intersection No. 21: Perris Boulevard/Iris Avenue: Pay fair-share (3.1%) to add overlap phasing to northbound right (NBR).	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-47. Intersection No. 39 – Evans Road/Ramona Expressway: Pay TUMF fee for addition of westbound through (WBT) lane.	Prior to construction – Phase III	Pay TUMF fee	City of Moreno Valley and WRCOG			
Roadway Segments						
MM-TRA-48. Alessandro Boulevard between Perris Boulevard and Kitching Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase III	Pay TUMF fee	City of Moreno Valley and WRCOG			
General Plan Buildout (2040) with Project Traffic Conditions						
MM-TRA-49. Intersection No. 47: Nason Street/Alessandro Boulevard: Pay fair-share (9.6%) fee for the addition of a northbound left (NBL) turn-lane.	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
Intersections						
MM-TRA-50. Intersection No. 50: Pearl Lane-Oliver Street/Alessandro Boulevard: Pay fair-share (1.9%) for the addition of a westbound left (WBL) turn lane.	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
Roadway Segments						
MM-TRA-51 Moreno Beach Drive between Alessandro Boulevard and Cactus Avenue: Pay fair-share (15.18%) to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase III	Pay fair-share fee	City of Moreno Valley			
MM-TRA-52 Alessandro Boulevard between Lasselle Street and Nason Street: Pay TUMF fee to improve the roadway segment to the classification of a six-lane divided arterial.	Prior to construction – Phase III	Pay TUMF fee	City of Moreno Valley and WRCOG			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
MM-TRA-53. The project shall contribute a total fair share contribution of $26,100 to the following Capital Improvement Plan (CIP) improvements: Heacock Street, between Nandina Avenue and Harley Knox Boulevard; and Indian Street, between Krameria Avenue and San Michele Road. As provided in the City's CIP, these improvements consist of extending Heacock Street's existing southern terminus to Harley Knox Boulevard and constructing a four-lane bridge on Indian Street over the Flood Control Channel Lateral A to connect to the existing terminus.	Prior to construction of Phase I	Pay fair-share fee	City of Moreno Valley			
Queuing Impacts						
MM-TRA-55. Prior to the completion of Phase I construction, the project shall extend the existing eastbound left-turn storage lane of Driveway 2 by 30 feet.	Prior to completion of Phase I construction	Complete Driveway 2 improvement	City of Moreno Valley			
MM-TRA-56. Prior to the completion of Phase II construction, the project shall remove the existing raised median on Iris Avenue for the eastbound approach to Driveway 2, stripe the eastbound approach to accommodate a second eastbound left-turn lane, and extend the dual left-turn pocket up to 400 feet. Additionally, the existing southbound left-turn storage at Driveway 2 shall be extended to 200 feet prior to the completion of Phase II construction.	Prior to completion of Phase II construction	Complete Driveway 2 improvement	City of Moreno Valley			
Tribal Cultural Resources						
MM-TCR-1. Prior to the issuance of a grading permit, the Applicant shall retain a qualified professional archaeologist who meets U.S. Secretary of the Interior's Professional Qualifications and Standards. The project archaeologist, in consultation with the Soboba Band of Luiseno Indians, the construction manager, and any contractors will conduct an Archaeological Sensitivity Training for construction personnel prior to commencement of excavation activities. The training session will include a handout and will focus on how to identify archaeological and Tribal Cultural Resources that may be encountered during earthmoving activities and the procedures to be followed in such	Prior to issuance of grading permit	Kaiser shall retain a qualified archaeologist; Archaeologist and representative from Soboba Band of Luiseno Indians shall	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
an event, including who to contact and the appropriate avoidance measures that need to be undertaken until the find(s) can be properly evaluated; the duties of archaeological and the Soboba Band of Luiseno Indians monitor; and the general steps a qualified professional archaeologist would follow in conducting a salvage investigation if one is necessary. All new construction personnel that will conduct earthwork or grading activities must take the Archaeological Sensitivity Training prior to beginning work on the project and the professional archaeologist shall make themselves available to provide the training on an as-needed basis. A sign-in sheet shall be compiled to track attendance and shall be submitted to the City of Moreno Valley with the Phase IV Archaeological Monitoring Report.		conduct training session				
MM-TCR-2. Preconstruction Notification of Soboba Band of Luiseno Indians Representatives. Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that the Soboba Band of Luiseno Indians Representatives received a minimum of 30 days advance notice of all mass grading and trenching activities, and provide evidence of monitoring agreements between the Applicant and the Tribe. The Soboba Band of Luiseno Indians shall be notified a minimum of 48 hours in advance and allowed to attend the pre-grading meeting with the City and project construction contractors and/or monitor all project mass grading and trenching activities.	Prior to issuance of grading permit	Kaiser shall demonstrate to City that Native American Tribal Representatives (Soboba Band of Luiseno Indians) have received notification	City of Moreno Valley			
MM-TCR-3. Prior to grading permit issuance, the Applicant and the City of Moreno Valley 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 archaeological monitor or Soboba Band of Luiseno Indians 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 Soboba Band of Luiseno Indians to the site to assess the significance of the find."	Prior to issuance of grading permit	Kaiser and City shall verify required note is on grading plans	City of Moreno Valley			
MM-TCR-4. Prior to the issuance of a grading permit, the Applicant shall retain a qualified archaeological monitor as well as secure an	Prior to issuance of grading	Kaiser shall retain a qualified	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
agreement with the Soboba Band of Luiseno Indians for tribal monitoring. The archaeological monitor will work under the direction and guidance of the qualified professional archaeologist and will meet the U.S. Secretary of the Interior's Professional Qualifications and Standards. The archeological monitor and the Soboba Band of Luiseno Indians monitor shall have the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. Archaeological and tribal cultural monitoring is required at all depths and strata. The archaeological and tribal cultural monitors shall be present during all construction excavations (e.g., grading, trenching, or clearing/grubbing) into non-fill younger Pleistocene alluvial sediments. Multiple earth-moving construction activities may require multiple archaeological monitors. The frequency of monitoring shall be based on the rate of excavation and grading activities, proximity to any known archaeological resources, the materials being excavated (native versus artificial fill soils), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered. Full-time monitoring can be reduced to part-time inspections if determined adequate by the qualified professional archaeologist.	permit; During construction	archaeologist; Archaeologist shall halt work in vicinity of potential archaeological and/or tribal cultural resources				
MM-TCR-5. The applicant shall ensure that all ground-disturbing activities are ceased and treatment plans are implemented if tribal cultural resources (TCRs) are encountered. In the event that TCRs are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 100 feet shall be established around the find where construction activities shall not be allowed to continue until a qualified archaeologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside of the buffer area. All TCRs unearthed by project construction activities shall be evaluated by a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards.	During construction	Ground-disturbing activities are ceased in vicinity a potential archaeological or tribal cultural resource	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
In the event that a TCR is encountered during ground-disturbing activities, the landowner(s) shall relinquish ownership of all such resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Planning Department: 1. Accommodate the process for Preservation-In-Place/Onsite reburial of the discovered items with the Soboba Band of Luiseno Indians, as detailed in the treatment plan prepared by the professional archaeologist. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed; 2. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations (CFR) Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation; and/or 3. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default.						
MM-TCR-6. Prior to the issuance of a grading permit, project archaeologist, in consultation with the Soboba Band of Luiseno Indians, the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all	Prior to issuance of grading permit	Archaeologist, representative from Soboba Band of Luiseno Indians, and	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
archaeological and cultural activities that will occur on the project site. Details in the CRMP shall include: a. Project grading and development scheduling; b. The project archeologist and the Soboba Band of Luiseno Indians as defined in MM-TCR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and shall conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training shall 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 shall 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 Soboba Band of Luiseno Indians shall make themselves available to provide the training on an as-needed basis; c. The protocols and stipulations that the contractor, City, Soboba Band of Luiseno Indians, and project archaeologist shall 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.		contractor shall develop a Cultural Resources Management Plan				
MM-TCR-7. Prior to building permit issuance, the project archaeologist shall prepare a final Phase IV Monitoring Report as outlined in the Cultural Resources Management Plan (CRMP), which shall be submitted to the City of Moreno Valley Planning Division, the Soboba Band of Luiseno Indians, and the Eastern Information Center at the University of	Prior to issuance of building permit	Archaeologist shall prepare a Phase IV Monitoring Report	City of Moreno Valley			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
California, Riverside. The report shall include a description of resources unearthed, if any, evaluation of the resources with respect to the California Register and CEQA, and treatment of these resources. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated in a Riverside County repository according to the current professional repository standards and may include the Western Science Center or other federally approved repository.						
MM-TCR-8. 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), Soboba Band of Luiseno Indians 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 the Soboba Band of Luiseno Indians, as defined in the Cultural Resources Management Plan, prepared under MM-TCR-6, before any further work commences in the affected area.	During excavation or construction	Qualified person meeting Secretary of the Interior's standards shall consult with the City	City of Moreno Valley			
MM-TCR-9. In the event that any human remains are unearthed during project construction, the City of Moreno Valley and the Applicant shall comply with State Health and Safety Code Section 7050.5 The City of Moreno Valley and the Applicant shall immediately notify the Riverside County Coroner's office and no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition. If remains are determined to be of Native American descent, the coroner has 24-hours to notify the Native American Heritage Commission (NAHC). The NAHC shall identify the person(s)	During construction	Contractor shall comply with State Health and Safety Code Section 7050.5 in the event of discovery of human remains	City of Moreno Valley, NAHC			

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Monitoring Phase	*Monitoring Method*	*Enforcing Agency & Responsible Agency*	*Initial*	*Date*	*Comments*
thought to be the Most Likely Descendant (MLD). After the MLD has inspected the remains and the site, they have 48 hours to recommend to the landowner the treatment or disposal, with appropriate dignity, of the human remains and any associated funerary objects. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the landowner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and cultural items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the MLD all reasonable options regarding the MLDs preferences for treatment. If the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.						

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