Section VI
Congestion Management Process (CMP)

SECTION VI

CONGESTION MANAGEMENT PROCESS

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CONGESTION MANAGEMENT PROCESS

2017 FTIP and Federal Congestion Management Process

Federal legislation and regulations for Metropolitan Transportation Planning and Programming require a Congestion Management Process (CMP) in Transportation Management Areas (TMAs) to "provide for safe and effective integrated management and operation of the multimodal transportation system…through the use of travel demand reduction and operational management strategies." 23 CFR 450.320(a). The Federal Highway Administration (FHWA) defines the CMP as a *"systematic approach that provides for effective management and operation, based on a cooperatively developed and implemented metropolitan–wide strategy, of new and existing transportation facilities eligible for funding under title 23 U.S.C., and title 49 U.S.C., through the use of operational management strategies."* In accordance with Federal law [23 U.S.C. S134 and 49 U.S.C. S5303–5305], SCAG has made the CMP an integral part of the regional transportation planning process, including SCAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the Federal Transportation Improvement Program (FTIP).

SCAG's Congestion Management Process

The FHWA *CMP Guidebook* outlines eight actions that are considered to be the core of the CMP. SCAG implements, monitors and evaluates these actions as part of its RTP/SCS process. These eight actions and how SCAG implements them are described below:

1. Develop Regional Objectives for Congestion Management – CMP objectives should be developed in coordination with the MPO's long-range plan, and should guide the decisions made throughout the CMP and the broader MPO planning process. As part of each RTP/SCS development process, SCAG performs a comprehensive objectives development process with hundreds of stakeholders across the region to identify regional objectives for a host of transportation planning areas, including congestion management. Adopted RTP/SCS goals address mobility, accessibility, reliability and productivity.

2. Define CMP Network – This step defines the geographic area to be covered by the CMP, as well as the CMP network and its transportation facilities that will be analyzed, including transit, bicycle, pedestrian and freight facilities. As part of each RTP/SCS development process, SCAG defines the six–county geographic area to be covered by the RTP/SCS, and all transportation facilities that will be analyzed, including freeway, highway, arterial, transit, bicycle, pedestrian and freight facilities.

3. Develop Multimodal Performance Measures –The performance measures a MPO selects for use in the CMP should address the congestion management objectives identified above, addressing a wide variety of congestion-related issues. As part of each RTP/SCS development process, SCAG develops multimodal performance measures addressing a wide variety of congestion-related issues, including but not

limited to mobility, accessibility, location efficiency, air quality and public health. Regarding congestion, SCAG evaluates person delay, truck delay and travel time.

4. Collect Data/Monitor System Performance – This step involves collecting and monitoring data to assess the CMP network's performance. As part of each RTP/SCS development process, SCAG updates and calibrates the regional travel demand model and activity-based model process using existing conditions, allowing it to provide an accurate representation of the performance of the existing highway and arterial system. Data sources include: Caltrans Highway Performance Monitoring System (PeMS), Caltrans Highway Performance Metering Program (HICOMP), Mobility Performance Report (MPR) and private sector data sources such as Inrix. In addition, SCAG collects a host of data on the performance of other modes of transportation, including transit, rail and goods movement.

5. Analyze Congestion Problems and Needs – This step identifies the congestion problems that are present in the region, and those that are anticipated based on the data collected for the RTP/SCS. This step also identifies sources of "unacceptable" congestion. As part of each RTP/SCS development process, SCAG performs an assessment of congestion levels in the base year (2012 for the 2016 RTP/SCS) as existing conditions and the baseline future "no build" conditions scenarios. SCAG then performs an alternatives analysis process utilizing model runs to tests various modal strategies and their ability to address the identified congestion issues. This process ultimately results in the selection of the preferred plan scenario.

6. Identify and Assess Strategies – This step involves developing strategies that are appropriate to mitigate the congestion identified in Steps 4 and 5. A wide variety of strategies should be considered, including transportation demand management, operational improvements and multimodal facilities and services. As part of each RTP/SCS development process, SCAG considers a comprehensive range of strategies, including transportation systems management, transportation demand management, and investments in multimodal capital and operational improvements.

7. Program and Implement Strategies – This step involves programming and implementing fiscally constrained projects through the RTP/SCS and Federal Transportation Improvement Program (FTIP) processes, to mitigate the identified congestion. CMP performance measures should be used as a tool for project prioritization. As part of each FTIP update and amendment development process, SCAG implements projects and strategies identified in the FTIP and RTP/SCS in collaboration with the county transportation commissions (CTCs).

8. Evaluate Strategy Effectiveness – This step involves the evaluation of how well the CMP strategies are working, whether further improvements are needed, and whether the strategies should be implemented elsewhere in the region. SCAG evaluates how its implemented strategies mitigate and reduce the identified congestion over time at the system level, using performance measures and monitoring.

SCAG CMP'S Relation to Other Documents

Through the RTP/SCS, the SCAG CMP identifies strategies to reduce and mitigate congestion, which are incorporated into the FTIP. These FTIP projects are programmed through the CTCs, as all of these projects are incorporated in the CTCs long-range plans. The SCAG CMP is also an important part of the South Coast Air Quality Management District's (AQMD) Air Quality Management Plan (AQMP). The FTIP and RTP/SCS contain congestion-mitigating projects that are transportation control measures (TCMs). These are incorporated into the AQMP to reduce air pollution emissions. These measures contribute toward attaining the National Ambient Air Quality Standards (NAAQS).

Roles and Responsibilities of Partner Agencies

Currently, five of the six counties in the SCAG region (all but Imperial County) have adopted programs that fall under the state congestion management requirements, and they are responsible for monitoring their respective networks and producing a report every two years. SCAG in turn has a state-mandated role in reviewing the county programs for inter-county compatibility and consistency, as well as for consistency with the adopted RTP/SCS. The CTCs also work with SCAG to program projects from their long range plans into the FTIP and RTP/SCS. Many of these projects are TCMs that are incorporated in to the AQMP, and the SCAQMD and SCAG work together to ensure the region improves its air quality. Finally, FHWA monitors and reviews SCAG's processes to make sure CMP requirements are met.

For more information on SCAG's CMP, please see the *2016 RTP/SCS Congestion Management Appendix*.
http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_CongestionManagement.pdf

SOV Capacity-Increasing Projects

In the SCAG region, federal regulations stipulate that no federal funds may be programmed for any project that significantly increases Single Occupancy Vehicle (SOV) capacity unless the project is addressed as part of the federal congestion management process. According to 23 CFR§450.320(d), *"…Federal funds may not be programmed for any project that will result in a significant increase in the carrying capacity for single occupant vehicles (SOVs) (i.e., a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks), unless the project is addressed through a congestion management process meeting the requirements of this section"* in designated non-attainment TMA areas. The FTIP, as the programming document for all federal transportation funds, must be consistent with the regulations. SCAG requires project sponsors who submit significant SOV capacity-increasing projects into the FTIP to provide documentation demonstrating that they have analyzed non-capacity-increasing alternatives as part of the project development process.

SCAG previously used a $50 million cost threshold to identify projects which increase SOV capacity in the region, but working closely with FHWA, SCAG has replaced this methodology

with a criterion of identifying roadway facilities that are at least one mile in length. Below is the following process SCAG uses for the 2017 FTIP to comply with the federal CMP:

1. Identify all SOV capacity-increasing projects that are fully or partially funded by federal sources in first four years of the FTIP.

2. Identify and determine projects that are 1) safety and/or operational improvements and 2) bottleneck relief projects, as these are exempted from the CMP process.

3. Identify SOV capacity-increasing projects that are at least one mile in length, as this is the primary criterion that determines the need for CMP review.

4. Collect from the SOV capacity-increasing project sponsors documentation with the project submittal that demonstrates that alternative TSM/TDM strategies were considered for the project in question during the alternatives analysis process. Acceptable documentation includes:

    - Alternatives Analysis studies and/or other relevant project planning studies with specific reference to the TSM/TDM strategies considered
    - Environmental Impact Statement/Environmental Impact Report (EIS/EIR)
    - Statement of overriding consideration explaining why consideration of TSM/TDM strategies were not relevant, infeasible or impractical (e.g., arterial widening in a rural area)

5. Create list of all SOV capacity-increasing projects subject to the CMP. The list will include a description of the project along with its submitted documentation with a link.

Project Submittals

All FTIP project submittals for significant SOV capacity-increasing projects that are at least one mile in length and above must include documentation that demonstrates TSM/TDM or other operational management strategies were considered and/or incorporated into the project. (Only projects with right-of-way or construction funds in the quadrennial years of the FTIP are subject to this requirement.) Submittal of such projects for inclusion in the FTIP require documentation indicating that the project was planned and will be constructed in accordance with the congestion management process as defined in 23 CFR Part 450.320(d) and (e). The FTIP database includes fields for project sponsors to identify which travel demand reduction and/or operational management strategies are included as part of the project ("CMP Measures"). Project sponsors must also identify the relevant planning and/or environmental documents that indicate which demand reduction or operational management strategies were evaluated/incorporated in the alternatives analysis of the project, and include a copy of, or link to the document.

2017 FTIP CMP-Eligible Projects

SCAG identified 13 projects that meet the SOV capacity-increasing criteria subject to the CMP. These projects are located in Los Angeles, Orange, Riverside and San Bernardino counties. Please see project listing report on following page.

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Congestion Management Process (CMP) Project Listing Report for 2017 FTIP

County	System	Project ID	Agency	Air Basin	Project Length	Project Description	Completion Date	Travel Demand Management Strategies	Other Measure Description	Environmental Document Source
LA	L	LA0D465	LOS ANGELES COUNTY	SCAB	2.1	Colima Road-City of Whittier Limits to Fullerton Road, for a total distance of 4.9 miles. The project will widen Colima Rd by up to six feet at spot locations and restripe to accommodate three through lanes in each direction. A Class II bikeway from the City of Whittier will be extended to Allenton Av, a distance of 1.2 miles, and bus pads will be replaced. Includes median landscaping. Toll credit added in FY18/19 $28 in construction.	12/15/2020	bicycle Facilities		The ENV Doc is attached
LA	L	LAF3136	LOS ANGELES COUNTY	SCAB	1.98	Widen The Old Road from north of Magic Mountain Pkwy to Henry Mayo Dr to 1200 ft west of The Old Road. Project is located on The Old Rd.from approximately 700 ft north of Magic Mountain Parkway to Henry Mayo Dr from The Old Road to the SR126 hook ramps, and Rye Canyon Rd btwn The Old Radd and Avenue Stanford. Widening from 4 to 6 lanes to reduce bottleneck. Toll Credits will be used to match STPL funds.	12/30/2021	bicycle and Pedestrian Facilities	It includes the construction of curb and gutter, sidewalk, curb ramps, driveway aprons, drainage facilities, slope grading, and the installation of signing and striping, street lighting, traffic signals, and bike lanes	The ENV Doc is attached
LA	L	LAF5115	LOS ANGELES COUNTY	MDA B	1.7	Avenue L Roadway Widening Project; widen Avenue L from one lane to two lanes in each direction from 40th St West to 57th St (total distance 1.7 mi) include left- and right-turn pockets where Avenue L intersects with 40th, 42nd, 45th, 50th and 55th Streets, curbs and gutter reconstruction, a 12-foot wide Class II bike lane in each direction and 8-foot wide sidewalks on both sides of the street.	12/30/2017	bicycle and Pedestrian Facilities,		The ENV Doc is attached

Congestion Management Process (CMP) Project Listing Report for 2017 FTIP

County	System	Project ID	Agency	Air Basin	Project Length	Project Description	Completion Date	Travel Demand Management Strategies	Other Measure Description	Environmental Document Source
ORA	S	ORA030605	ORANGE COUNTY TRANS AUTHORITY (OCTA)	SCAB	14.9	I-405 FROM SR-73 TO I-605. Add 1 MF lane in each direction, and additional capital improvements. Combined with ORA045, ORA151, ORA100507 and ORA120310. Phase 2 listed under ORA030605A	9/30/2022	HOT/HOV Lanes, Ramp Meters, Signal Sync.	See weblink in next column for TDM/TSM for all alternatives	http://www.dot.ca.gov/dist12/DEA/405/TOC-Q/04%20I-405%20FEIR-EIS%20V1_Chapter%202.pdf
ORA	S	ORA131711	ORANGE COUNTY TRANS AUTHORITY (OCTA)	SCAB	2.1	I-5 (SR-73 to Oso Parkway) Segment 1 - The project will add one general purpose lane on the I-5 in each direction between SR-73 and Oso Creek (approximately 2.2 miles), reconstruct Avery Parkway interchanges and add auxiliary lanes where needed. (PPNO 2655). Project is spilt with ORA111801 and ORA131712.	6/30/2023	HOV Lanes	All three segments of the I-5 SR-73 to El Toro project were approved under one environmental document. This includes extending the HOV lane which is under Segment 3 (ORA111801). Therefore the CMP component is fulfilled for Seg 1 (ORA131711) and 2 (ORA131712). See weblink in next column for TDM/TSM for all alternatives - **Page 59**	http://www.dot.ca.gov/dist12/DEA/5widening/Chapter_1_Project_Description.pdf
ORA	S	ORA131712	ORANGE COUNTY TRANS AUTHORITY (OCTA)	SCAB	2.6	I-5 (Oso Creek to Alicia Parkway) Segment 2 - The project will add one general purpose lane on the I-5 in each direction between Oso Creek and Alicia Parkway (approximately 2.6 miles), reconstruct La Paz Road interchange and add auxiliary lanes where needed. Project is spilt with ORA111801 and ORA131711.	6/30/2023	HOV Lanes	All three segments of the I-5 SR-73 to El Toro project were approved under one environmental document. This includes extending the HOV lane which is under Segment 3 (ORA111801). Therefore the CMP component is fulfilled for Seg 1 (ORA131711) and 2 (ORA131712). See weblink in next column for TDM/TSM for all alternatives - **Page 59**	http://www.dot.ca.gov/dist12/DEA/5widening/Chapter_1_Project_Description.pdf

Congestion Management Process (CMP) Project Listing Report for 2017 FTIP

County	System	Project ID	Agency	Air Basin	Project Length	Project Description	Completion Date	Travel Demand Management Strategies	Other Measure Description	Environmental Document Source
RIV	S	RIV031215	TEMECULA	SCAB	4.1	FRENCH VALLEY PKWY IC/ARTERIAL PHASES: PH II - CONSTRUCT 2 LN NB CD (N/O WINCHESTER IC ON-RAMPS TO JUST N/O RTE 15/215 JCT WITH CONNECTORS TO RTE 15 AND RTE 215 (I-215 PM: 8.43 TO 9.75); AND PH III - CONSTRUCT 6 LN OC (JEFFERSON TO YNEZ) & RAMPS, NB/SB AUX LN, CD LNS (1 LN NB & 3 LN SB) & MODIFY WINCHESTER RD IC (EA:43272) (PPNO. 0021K).	12/31/2028	Ramp Meters	Project includes a collector/distributor lane system. Adjacent park-n-ride facilities are currently available within close proximity to project limits.	The ENV Doc is attached
RIV	L	RIV151001	INDIO	SSAB	1.2	IN EASTERN RIVERSIDE COUNTY FOR THE CITY OF INDIO - RECONSTRUCT AND IMPROVE HIGHWAY 111 FROM 760 FT WEST OF MADISON ST TO RUBIDOUX ST INCLUDING UPDATING ALL TRAFFIC SIGNALS AND UPDATE ALL SIDEWALKS, RAMPS AND DRIVEWAYS TO CURRENT ADA STANDARDS. WIDEN OF HIGHWAY 111 FROM 4 LANES (2 IN EACH DIR) TO 6 LANES (3 IN EACH DIR).	12/30/2016	Ramp Meters	Additional measure include better access to transit services. Lastly, there is going to be a median installed as a safety element to reduce collisions in the area.	The ENV Doc is attached
RIV	L	RIV151216	RIVERSIDE, CITY OF	SCAB	2.3	IN WESTERN RIVERSIDE COUNTY IN THE CITY OF RIVERSIDE - WIDENING OF MAGNOLIA AVENUE WITHIN EXISTING R/W FROM 4 TO 6 LANES (2 EA DIR TO 3 EA DIR) FROM BUCHANAN ST TO BANBURY DRIVE.	12/31/2018	Signal Sync.	Widening of Magnolia will be accomplished utilizing existing median - bicycle and pedestrian facilities are already in place. Magnolia Traffic Signal interconnect is being implemented under RIV151205.	The ENV Doc is attached

Congestion Management Process (CMP) Project Listing Report for 2017 FTIP

County	System	Project ID	Agency	Air Basin	Project Length	Project Description	Completion Date	Travel Demand Management Strategies	Other Measure Description	Environmental Document Source
RIV	L	RIV151217	COACHELLA	SSAB	1	IN EASTERN RIVERSIDE COUNTY IN THE CITY OF COACHELLA - WIDENING OF AVENUE 48 FROM 2 TO 6 LANES (1 LN EA DIR TO 3 LNS EA DIR) FROM JACKSON RD TO VAN BUREN ST INCLUDING TRAFFIC SIGNAL MODIFICATIONS, STREET LIGHTING, DRAINAGE IMPROVEMENTS INCLUDING SIDEWALK AND BICYCLE LANES AND LANDSCAPING	12/31/2017	bicycle and Pedestrian Facilities,		The ENV Doc is attached
SBD	S	200451	VARIOUS AGENCIES	MDAB	5.5	US-395 (HESPERIA, VICTORVILLE, & ADELANTO) FROM SR18 TO CHAMBERLAINE WAY -INTERIM WIDENING- WIDEN FROM 2-4 LANES AND ADD LEFT TURN CHANNELIZATION AT INTERSECTIONS(EA OF631)(Toll Credits: FY14/15 $72 for DEMO, FY15/16 $683 for STP, FY17/18 $2,217 for STP)	12/31/2019	Wide Shoulders, Pedestrian Facilities		The ENV Doc is attached
SBD	S	20111625	SANBAG	SCAB	1	SR210 LANE ADDITION - ADD 1 MIXED FLOW LANE IN EACH DIRECTION FROM HIGHLAND AVE. TO SAN BERNARDINO AVE (REDLANDS) INCLUDES AUX. LANES BETWEEN BASE LINE AND 5TH STS AND AN ACCELERATION LANE AT 5TH ST. E/B ON RAMP AND DECELRATION LANE AT HIGHLAND AVE E/B OFF RAMP EXTENDING TO STERLING AVENUE (Under 1/4 miles length)	6/1/2021	Ramp Meters	Additional Aux, MF, and truck acceleration lanes	The ENV Doc is attached

Congestion Management Process (CMP) Project Listing Report for 2017 FTIP

County	System	Project ID	Agency	Air Basin	Project Length	Project Description	Completion Date	Travel Demand Management Strategies	Other Measure Description	Environmental Document Source
SBD	S	SBD31850	VARIOUS AGENCIES	SCAB	1.08	IN GRAND TERRACE @ I-215 BARTON RD I/C RECONSTRUCT OC & RAMPS W/ PARTIAL CLOVERLEAF CONFIG. NW OF I-215 WORK INCL ADD OF NB AUX LN.LOCAL ST WORK TO INCL WIDENING OF BARTON RD, REMOVAL OF LA CROSSE AVE. B/W VIVENDA AVE & BARTON RD, RPLCMT W/ NEW LOCAL RD, IMPRVMTS TO BARTON RD & MICHIGAN WAY/VIVENDA AVE INTERSEC & REALIGNMT OF COMMERCE WY (Toll Credits used to match DEMO: ENG & ROW)	9/1/2018	Ramp Meters, bicycle and Pedestrian Facilities		The ENV Doc is attached

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Congested Management Process – Project Study Report

Project LA0D465

Project Description:

Colima Road-City of Whittier Limits to Fullerton Road, for a total distance of 4.9 miles. The project will widen Colima Rd by up to six feet at spot locations and restripe to accommodate three through lanes in each direction. A Class II bikeway from the City of Whittier will be extended to Allenton Av, a distance of 1.2 miles, and bus pads will be replaced. Includes median landscaping. Toll credit added in FY18/19 $28 in construction.

Attachment D

Project Study Report Equivalent

PSR EQUIVALENT SIGNATURE

Approved and Certified by Local Agency:

Assistant Deputy Director

1/26/2011
Date

This Project Study Report Equivalent has been prepared under the direction of the following staff authorized by the sponsoring agency to sign for the work. The person signing below attests to and certifies the technical information contained therein and the engineering data if appropriate, upon which the commendations, conclusions, and decisions are based.

Registered Civil Engineer

1/27/2011
Date

If applicable, California PE Stamp and Lic. #

REGISTERED PROFESSIONAL ENGINEER
HANK FUNG
C 69352
CIVIL
STATE OF CALIFORNIA

expires 6/30/2012

December 16, 2010

TO Patrick V DeChellis

FROM Sree Kumar
Design Division

PROJECT DESIGN CONCEPT
COLIMA ROAD- CITY OF WHITTIER BOUNDARY TO FULLERTON RD
PROJECT ID RDC0014911, PCA X2401082
RD 117, 416, 417, SD 1, 4 AND INDUSTRY

RECOMMENDATIONS

1. Approve the Project Design Concept (PDC) to provide roadway, traffic signal, striping and landscaping improvements from City of Whittier boundary to Fullerton Road.

2 Request Programs Development Division (PDD) to arrange financing in the amount of $12,343,000 for the design and construction of this project.

3 Request PDD to coordinate with the City of Industry and arrange for City to fund their share of the project.

DISCUSSION

The proposed project is located in the unincorporated area of Rowland Heights and City of Industry (see attached location map).

In 2003, Van Dell and Associates, Inc. documented existing and future level of service of signalized intersections and recommended improvements throughout heavily traveled area routes within Supervisorial District 1 and 4. Traffic and Lighting Division (T&L) recommends these improvements be programmed for construction.

The following is a summary of the existing conditions (see attachment 1) and the proposed scope of work for Colima Road project

	Jurisdiction
City of Whittier Boundary to Allenton Av (T.G. 678 A6-7, B6)	County

- Landscape ex raised median
- add class II bike lane

Allenton Av to Halliburton Rd County
(T.G. 678 C6, D5, E5)

- Landscape ex. raised median

Halliburton Rd to Azusa Av County
(T.G. 678 E4, F4)

- Widen the s'ly side 6'
- Reconstruct ex raised median, south side of curb, gutter, sidewalk, driveways and catch basins, replant trees
- Relocate traffic signals and street lights, restripe 3 lanes each direction and class II bike lane
- Landscape raised median

Azusa Av to Larkvane Rd County, Industry
(T.G. 678 G4, H4, J5)

- Widen the both sides 2'
- Reconstruct ex. raised median, both sides of curb, gutter, sidewalk, driveways and catch basins
- Relocate traffic signals and street lights, restripe 3 lanes each direction and class II bike lane
- Landscape raised median

Larkvane Rd to Fullerton Rd County
(T.G. 678 J5)

- Reconstruct ex raised median east of Larkvane Rd
- Restripe 3 lanes each direction
- landscape raised median

ENVIRONMENTAL DOCUMENT (ED) AND PERMIT REQUIREMENTS

This project will require the preparation of a Negative Declaration

	Yes	No
Widen Intersection	X	
Tree Removal	X	
5 (or more) Tree Removals within 500'	X	

	Yes	No
New R/W Acquisition	X	
New Wall	X	

PLAN REQUIREMENTS

Road Plan Layout – A Plan RD will be required. Construction plans (i.e., line drawings) are to be prepared in plan and profile format by using an Electronic Topographic Survey

Right of Way Plan Layout – A Preliminary Study Map and R/W ID Map will be required.

Geometric Plan Layout – A Plan SP will be required to relocate/install signing and striping for this project.

Street Lighting Plan Layout – A Plan SL will be required to relocate the existing street lights along the parkway.

Traffic Signal Plan Layout – A Plan TS will be required to relocate/upgrade the traffic signals within the project limits.

Traffic Control Plan Layout – A Plan TC will be required to handle traffic during construction.

Landscaping Plan Layout – A Plan LS will be required for the installation of landscaping and irrigation system.

DIVISION INVOLVEMENT

Estimated Expenditures through November 30, 2010	**$** 30,000
AED – Prepare landscaping and irrigation plans.	300,000

CON	– Coordinate utility notifications and relocations, prepare specifications, and contract documents	35,000
DES	– Prepare highway plans, Right of Way plans, and perform all inter-divisional coordination	250,000
GMED	– Prepare Materials Report (Completed), prepare Preliminary Environmental Site Screening, and Review plans.	15,000
SUR/ MPM	– Provide Electronic Topographic Survey (Completed), Prepare Preliminary Study Map (Completed), acquire R/W and Permits to Enter	200,000
PDD	– Coordinate Community Meetings (if needed), Coordinate with L.A. Co. Parks and Recreation, City of Industry and other Agencies, and Finalize the Environmental Determination.	100,000
RMD	– Identify locations for tree planting, removal, and root pruning. Review Plans.	15,000
FMD	– Review plans	5,000
T&L	– Prepare signing, striping, traffic signal, street light and traffic control plans.	200,000
	Total =	$ 1,150,000

PRELIMINARY ESTIMATE

	County SD 1	County SD 4	City of Industry	Total
Estimated expenditures through November 30, 2010	$ 2,000	24,000	4,000	30,000
Preliminary Engineering (2010-12)	56,000	896,000	168,000	1,120,000
Construction Cost:				
Roadway	230,000	2,170,000	860,000	3,260,000
Signing and Striping	18,000	383,000	50,000	451,000
Street Lighting	110,000	580,000	210,000	900,000
Signal and loop restoration	125,000	1,825,000	300,000	2,250,000
Landscaping	13,000	3,287,000	215,000	3,515,000
Construction Contingency (15%)	75,000	1,237,000	245,000	1,557,000
Construction Engineering (15%)	75,000	1,237,000	245,000	1,557,000
Total:	$ 704,000	11,639,000	2,297,000	14,640,000

FUNDING

Per PDD, this project is proposed to be funded by PDD will arrange for necessary funding from the City of Industry

Fund Source	Fiscal Year (FY)	Phase	Amount
Gas Tax	Estimated expenditures through November 30, 2010	Design	30,000
Gas Tax	2010-12	Design	948,000
Prop 1B	2012-13	Construction	11,365,000
City of Industry	2010-2012	Design	172,000
	2012-2013	Construction	2,125,000
		Total:	$ 14,640,000

SCHEDULE

CONTRACT PLANS SCHEDULE		Estimated Start	Estimated Finish
S/MPM	– Survey R/W Acquisition	March 1, 2011	April 28, 2011
GMED	– Materials Report Preliminary Environmental Site Screening		
DES	– Approve PDC	February 14, 2011	March 17, 2011
	60% Plans (Highway)	May 2, 2011	October 27, 2011
	60% Plan Review	October 31, 2011	November 23, 2011
	R/W ID Map	October 31, 2011	November 10, 2011
	90% Plans	November 28, 2011	March 31, 2012
	90% Plan Review	April 4, 2012	April 30, 2012
	100% Plans	May 4, 2012	June 17, 2012
	Plans signed by DPW	June 21, 1012	July 30, 2012
	Distribution of Approved Plan	July 31, 2012	August 3, 2012
	Final Plans and Estimates (P&E) to CON		

CON	– Utility Search		
	1st Utility Notice	October 31, 2011	November 23, 2011
	Final Utility Notice and Coordination	April 4, 2012	June 17, 2012
T&L	– 60% Plans (Traffic, Striping,	May 2, 2011	October 27, 2011
	90% Plans Street Light)	November 28, 2011	March 31, 2012
	100% Plans	May 4, 2012	June 17, 2012
	Signed Plans	June 21, 1012	July 30, 2012
AED	– 60% Plans (Landscaping)	May 2, 2011	October 27, 2011
	90% Plans	November 28, 2011	March 31, 2012
	100% Plans	May 4, 2012	June 17, 2012
	Signed Plans	June 21, 1012	July 30, 2012
PDD	– Environmental Determination		
	PDC Approved by City of Industry		
	Agreement Signed by City of Industry		
	City Sign Plans		
	ACF		
	Advertise		
	Award		

wl:
P:\ddpub\Road\General\In-House Design\Highway Section\PDC\CC\WL\Colima Rd RDC0014911

Attach

cc: Construction (Chenoweth, Updyke), Geotechnical and Materials Engineering (Bouzari), Programs Development (Derakhshani, Dingman, Yang, Shih, Huang), Road Maintenance1 (Diotalevi), Survey/Mapping & Property Management (Steinhoff, Phillips), Traffic & Lighting (Quintana, Stringer), Design (Cline, Grindle, Lo)

Colima Road (4.87 miles) – City of Whittier Boundary to Fullerton Road

Feature	Existing	Proposed
Roadway	Colima Road, within the segment limits, is an urban major highway on the County Highway Plan that is typically 84 feet wide between curbs on 100, 110, 120 feet of right of way (R/W). Per the Road Code Inventory, the roadway was constructed between1962 to 1975. There are 65 curb ramps that do not meet the current Americans with Disabilities Act (ADA) requirements. There are curbs, gutters, and sidewalks on both sides of the street.	Per GMED's recommendation, from City of Whittier boundary to Halliburton Rd, no pavement improvement is needed. Reconstruct existing curb ramps to current ADA standard. From Halliburton Rd to Azusa Avenue, shift the road center line 3' to the south and reconstruct the south side curb and gutter to 45' from the new center line with raised median narrowed to 12' wide and 7.5' of PCC walk. Reconstruct driveways and bus pads. Reconstruct existing curb ramps to the current ADA standard. Construct PCC pavement for the widening portion at the PCC intersection of Azusa Avenue. From Azusa Avenue to Larkvane Road, reconstruct the both sides of curb and gutter to 44' from the center line with raised median narrowed to 12' wide and 5.5' of PCC walk. Reconstruct driveways and bus pads. Reconstruct existing curb ramps to the current ADA standard.
Traffic Signal	There are traffic signals at the intersection of Camino del Sur, Avalo Drive, Hacienda Boulevard, Allenton Avenue,Stimson Avenue, Puente Del Estate Drive, Halliburton Road, Countrywood Avenue, Manor Gate Road, Azusa Avenue, Albotross Road, Hanover Road, Walnut Hall Road, Stoner Creek Road, Larkvane Road and Fullerton Road.	Replace all affected traffic signal and loops in the widening area.

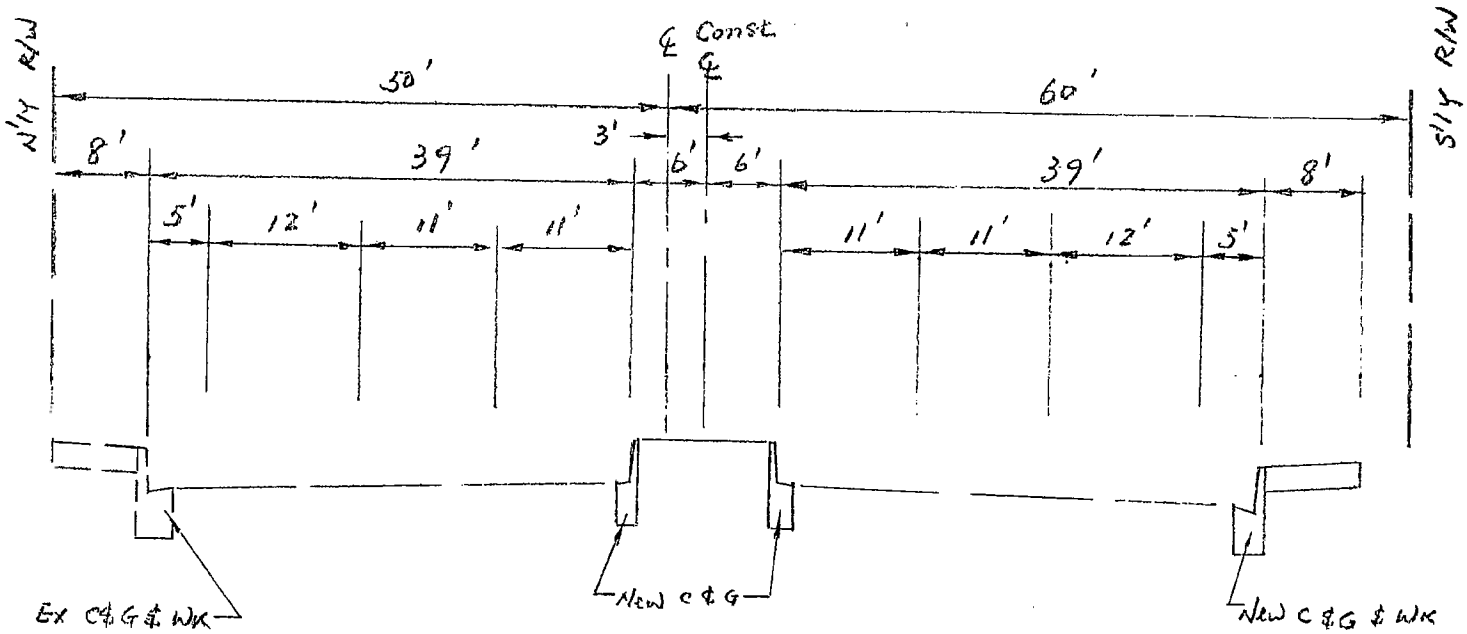
Colima Road (4.87 miles) – City of Whittier Boundary to Fullerton Road

Feature	Existing	Proposed
Marked Crosswalk at Uncontrolled Intersection	None.	No change.
Signing & Striping	The roadway is striped with 2 lanes from City of Whittier boundary to Allenton Avenue, 2 lanes with a Class II bike lane from Allenton Avenue to Larkvane Road and 3 lanes from Larkvane Road to Fullerton in each direction. Posted speed limit is 45 MPH.	In each direction, maintain existing striping with 2 lanes and add a Class II bike lane from City of Whittier boundary to Allenton Avenue, maintain existing striping with 2 lanes and a Class II bike lane from Allenton Avenue to Halliburton Road, stripe with 3 lanes and a Class II bike lane from Halliburton Road to Larkvane Road, Restripe with 3 lanes from Larkvane Road to Fullerton Road.
Street Lighting	There are street lights on concrete poles and wooden poles	Concrete light poles at the south side from Halliburton Road to Azusa Avenue and both sides from Azusa Avenue to larkvane Road need to be relocated due to proposed widening.
Drainage	There are existing storm drains (P.D. 1210, 1238, 1461, 1561, MTD 434, 635) within the project limits.	Reconstruct catch basins and extend connector pipes in the proposed widening segments.
Utilities	There are fire hydrant, utility manhole, vault and wooden power poles.	The fire hydrant, utility manhole and vault within the widening area need to be relocated or reconstructed.
Bikeway	Per L.A. County Metro Bike Map, there is Class III bike lane from City of Whittier boundary to Stimson Avenue and Class II bike lane from Stimson Avenue to Larkvane Road.	No change except adding the Class II bike lane from City of Whittier boundary to Allenton Avenue.
Landscaping: Parkway	None.	No change.
Median	None.	Landscape existing and new raised median.

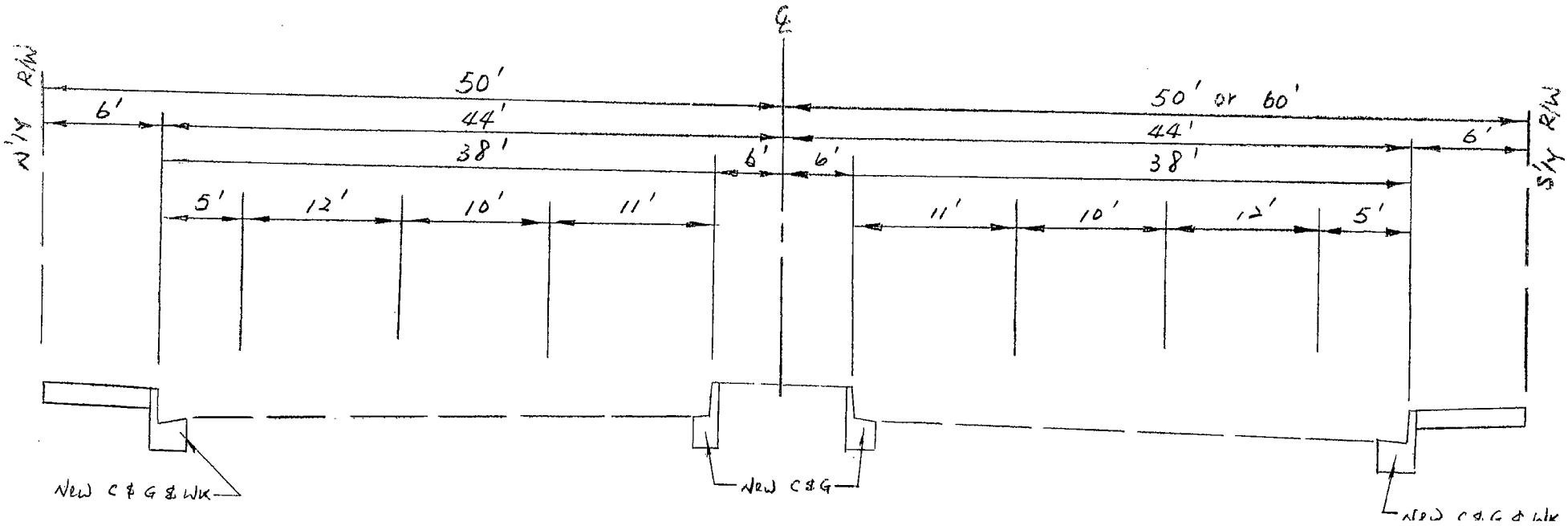
Colima Road (4.87 miles) – City of Whittier Boundary to Fullerton Road

Feature	Existing	Proposed
Transit	There are bus line 172, 185, 282, 289, 282 and 483 within the project limits.	No change. 4 bus shelters need to be relocated.
Low Impact Development	None.	We will work with AED to explore the feasibility of LID improvement within the project.
Adjacent Development	Most of developments are predominantly single-family residential development with some commercial developments at the intersections and from Manor Gates to Stoner Creek Road.	No change.
Other Agency	Industry.	Industry.
Right of Way Requirements	All existing improvements are within the road R/W	From Azusa Ave to Larkvane Road, additional R/W will be needed at the intersections for traffic signals. Permits to Enter will be required for driveways reconstruction and short walls.
Miscellaneous	None.	There is a Colima Road project (RDC0015339) resurfacing the road from Azusa Avenue to Fullerton Road.

This project will provide Class II bike lane from City of Whittier Boundary to Larkvane Road. To extend the Class II bike lane easterly from Larkvane Road to the City of Diamond Bar boundary, further traffic study and road widening with median modification will be required.



Colima Road
Halliburton Rd To Manor Gate Rd
Widening Segment



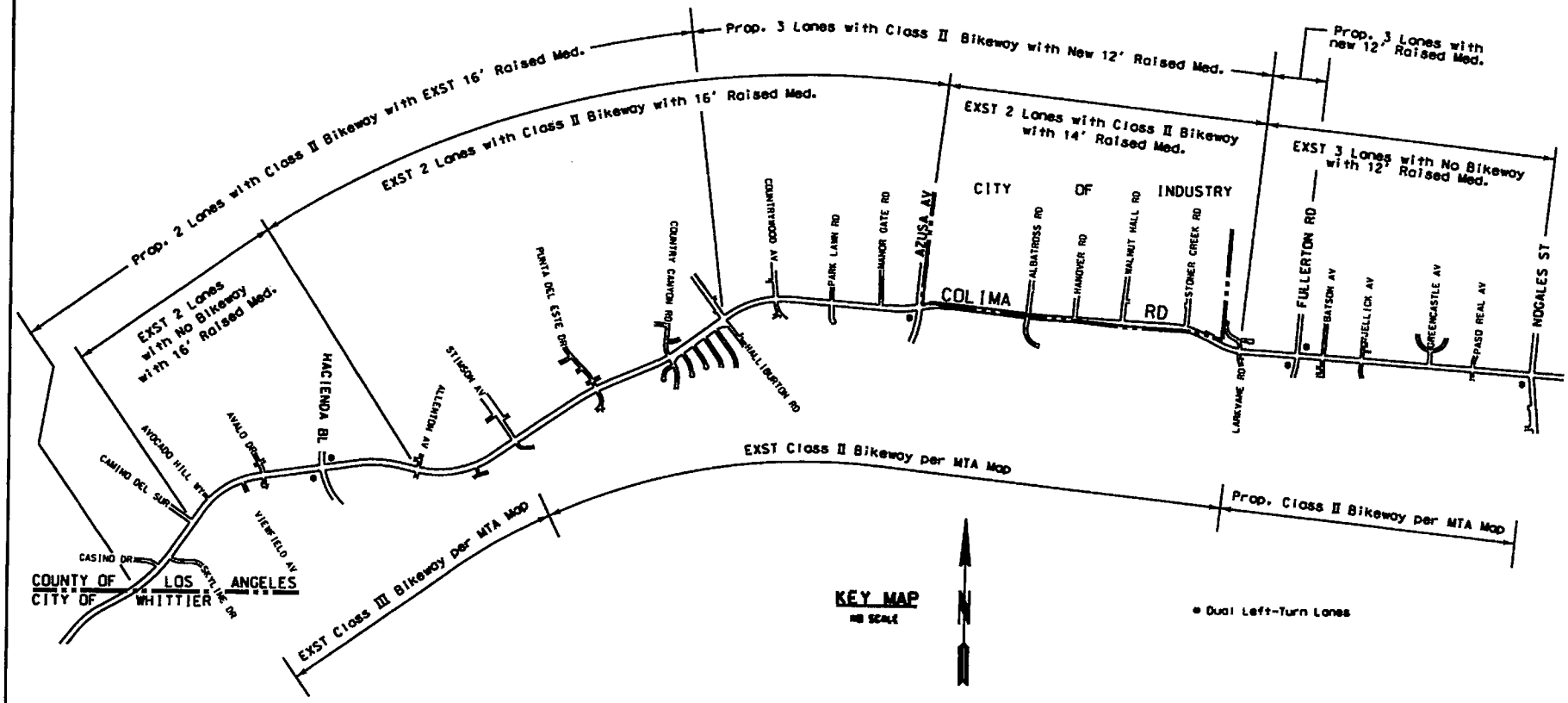
Colima Road
Azusa Av To Larkvane Rd
Widening Segment

#17-00 LA LA0D465_CMP_Project Study Report

Attachment 2

COLIMA ROAD

WHITTIER CITY BOUNDARY TO FULLERTON ROAD



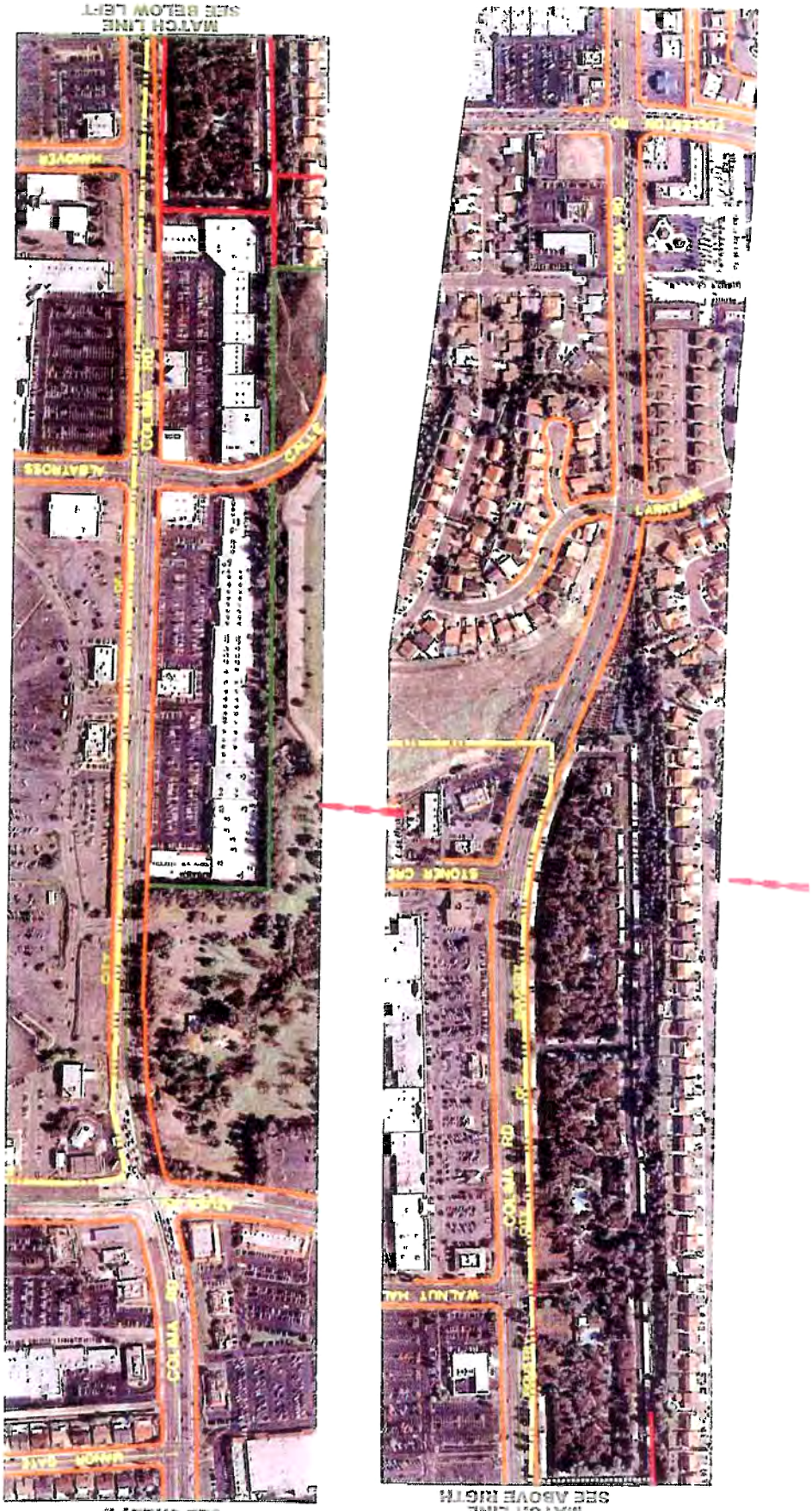
SHEET 1 OF 4

Attachment 3

#17-00 LA LA0D465 CMP Project Study Report

COLIMA ROAD
SITE MAP
MATCH LINE
SEE ABOVE RIGHT

COLIMA ROAD
SITE MAP
MATCH LINE
SEE BELOW LEFT
MATCH LINE
SEE SHEET 3
PUNTA DEL
STIMPSON AV
MATCH LINE
SEE SHEET 4
MATCH LINE
SEE ABOVE RIGTH



COLIMA ROAD
SITE MAP

Congested Management Process – Project Study Report

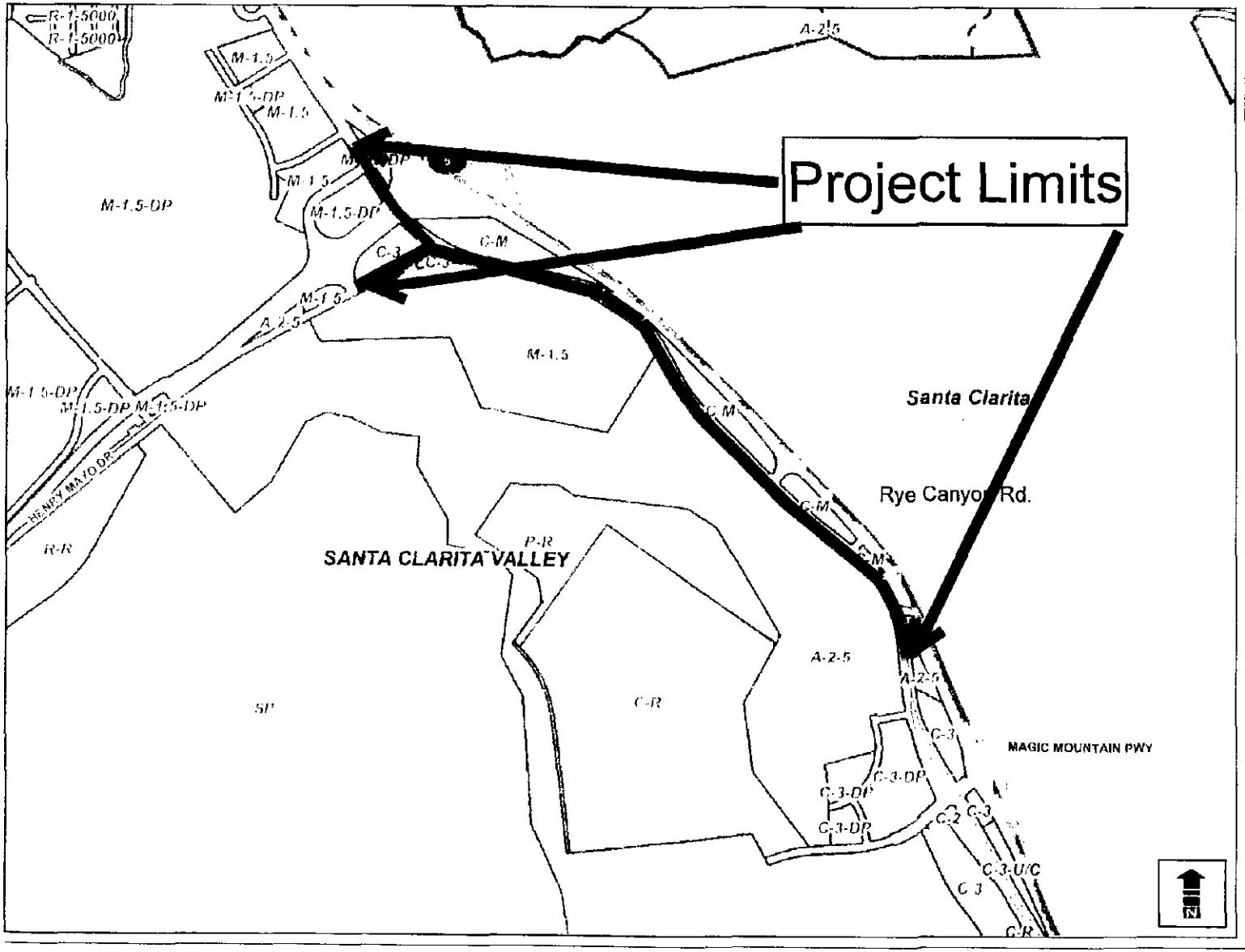
Project LAF3136

Project Description:

Widen The Old Road from north of Magic Mountain Pkwy to Henry Mayo Dr to 1200 ft west of The Old Road. Project is located on The Old Rd.from approximately 700 ft north of Magic Mountain Parkway to Henry Mayo Dr from The Old Road to the SR126 hook ramps, and Rye Canyon Rd btwn The Old Radd and Avenue Stanford. Widening from 4 to 6 lanes to reduce bottleneck. Toll Credits will be used to match STPL funds.

Los Angeles County
Department *of* Regional Planning

The Old Road from Magic Mountain Parkway to Turnberry Lane



Legend

Base Layers

Zoning

LOS ANGELES REGION
LARIC
Imagery acquisition consortium

Scale: 1:22,304
Printed On: Apr 22, 2009
GIS-NET | Public Web Mapping Application

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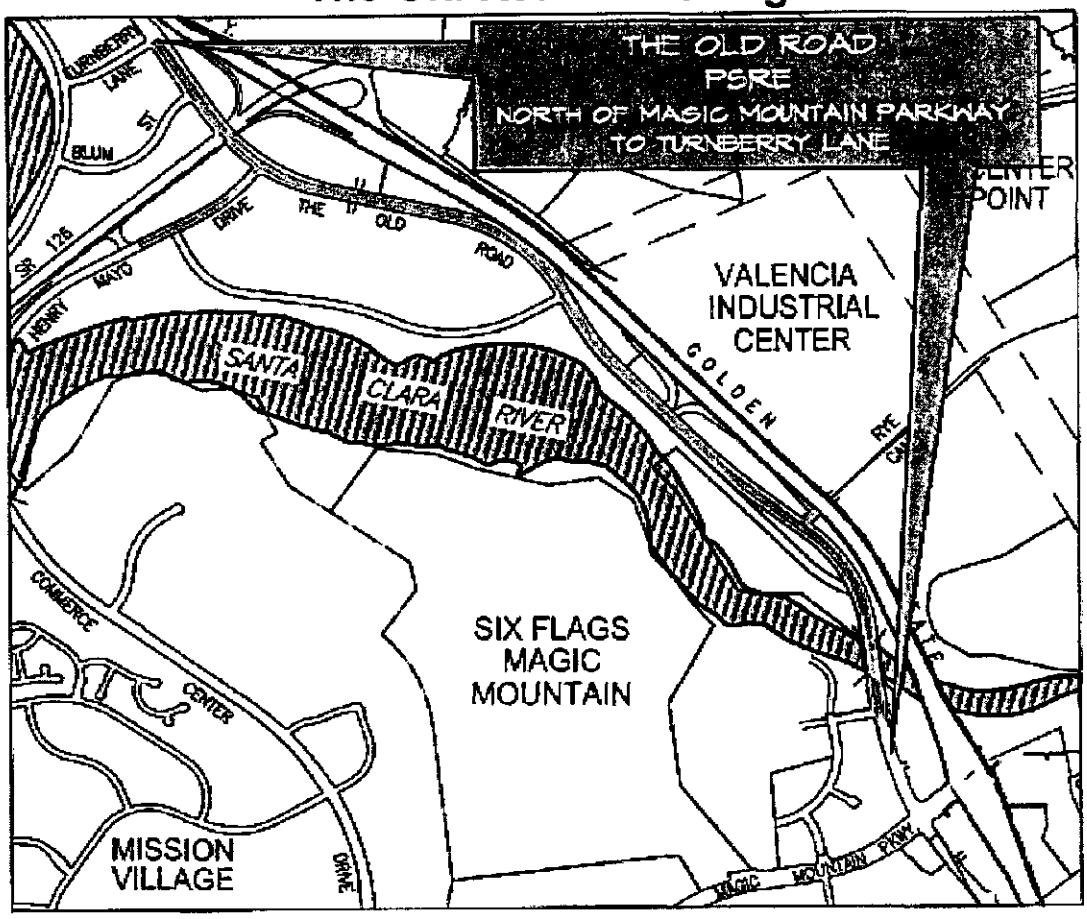
Note: This map represents a quick representation of spatial imagery or vector layers using GIS-NET.
The map should be interpreted in accordance with the disclaimer statement of GIS-NET.

Project Study Report Equivalent
The Old Road Widening



On Street The Old Road
Between Magic Mountain Pkwy
And Turnberry Lane

On Street Henry Mayo Drive
Between The Old Road
And State Route 126 hook ramps

Approved by County of Los Angeles Department of Public Works:

Shari Afshari — 4-23-09

Shari Afshari, Assistant Deputy Director of Public Works — *DATE*

This Project Study Report Equivalent has been prepared under the direction of the following staff authorized by the sponsoring agency to sign for the work. The person signing below attests to and certifies the technical information contained herein and the engineering data upon which the recommendations, conclusions and decisions are based.

Josephine Gutierrez — 4/23/09 *DATE*

REGISTERED PROFESSIONAL ENGINEER
JOSEPHINE G. GUTIERREZ
No. C58486
Exp. 12/30/09
CIVIL
STATE OF CALIFORNIA

4/23/2009

I. INTRODUCTION

This Project Study Report Equivalent (PSRE) proposes to analyze the reconstruction and widening of The Old Road from approximately 700 feet north of Magic Mountain Parkway matching proposed improvements to the intersection of The Old Road and Magic Mountain Parkway to approximately 1150 feet north of State Route 126 at Turnberry Lane including: intersection enhancements at The Old Road and Skyview Lane, the demolition and widening of The Old Road Bridge over the Santa Clara River, installation of associated bank protection for the bridge, removal of existing Armor-Flex blanket in the Santa Clara River, reconstruction of an existing box culvert outlet, the demolition and widening of a smaller bridge on The Old Road over the proposed County of Los Angeles Multi-purpose Regional River Trail (formerly the Pacific Rail Bridge), installation of a segment of the County of Los Angeles Multipurpose Regional River Trail to join with the City of Santa Clarita Bikeway and Pedestrian Trail, widen Rye Canyon Road from The Old Road to Avenue Stanford including associated intersection improvements at The Old Road and Rye Canyon Road, intersection enhancements at the proposed Old Road/Interstate 5 hook ramps, installation of bank protection in the Santa Clara River to protect The Old Road just north of the Sanitation Districts of Los Angeles County's (LACSD) Valencia Water Reclamation Plant, extension of an existing drainage culvert, realignment of the intersection of The Old Road and Henry Mayo Drive and the addition of bike lanes, sidewalks, widened shoulders and raised medians along segments of the project. The total length of the project is approximately 10,600 linear feet or roughly two miles plus an additional half mile of County of Los Angeles Multi-purpose Regional River Trail.

II. NEED AND PURPOSE OF THE PROJECT

The purpose of the project is to: 1) bring The Old Road into conformity with the Los Angeles County Preliminary Draft Santa Clarita Valley Area Plan 2) enhance safety and capacity 3) increase the design speed from less than 40 mph to a minimum of 55 mph with a maximum design speed of 65 mph where possible 4) meet estimated traffic demands for the year 2030 by widening the roadway from 4 lanes to 6 lanes and realigning it both vertically and horizontally 5) improve the intersection of Rye Canyon and The Old Road which currently operates at Level of Service (LOS) "F".

It is important to note that the replacement of The Old Road Bridge over the Santa Clara River is necessary for the following reasons: A) The bridge does not meet current County of Los Angeles flood standards as it is overtopped by a Capital flood event, B) The bridge does not meet County of Los Angeles Department of Public Works (LACDPW) design speed standards (current design speed is estimated at 39 mph), C) There is scour damage to the bridge piers, and D) it does not meet current bridge seismic criteria. The County of Los Angeles has applied for Highway Bridge Program (HBP) funds for the

replacement of the bridge as well as to replace the smaller bridge over the proposed County of Los Angeles Multi-purpose Regional River Trail (formerly the Pacific Rail Bridge).

Existing developments adjacent to and west of The Old Road include: Six Flags Magic Mountain Theme Park, LACSD Valencia Water Reclamation Plant (WRP), and agricultural fields. Existing developments adjacent to and east of The Old Road include: The Hilton Hotel, a shopping center, restaurants, a car wash, gas stations, California Highway Patrol (CHP) station and a California Department of Transportation (Caltrans) maintenance facility.

The Santa Clarita Valley is experiencing significant growth in terms of population. The region's largest employment centers are located in the west and north of the region adjacent to Interstate 5 and State Route 126. The Old Road is a significant link in the chain of transportation connectivity. Running parallel to Interstate 5, The Old Road offers the only alternate route in the event of an emergency on Interstate 5. The Old Road also plays an important roll for daily commuter traffic and local commerce.

Proposed improvements would significantly increase regional capacity on this direct north-south commuter route. The project would also reduce forecasted congestion on Interstate 5 and accommodate projected traffic growth in the area. Development plans for this area indicate that traffic growth will continue into the foreseeable future, resulting in an overall increase in intra-regional, inter-regional, and commuter traffic. Current traffic demand in the project area meets or exceeds roadway capacity for many of the arterial roadways, with significant increases in traffic demand anticipated over the next few years based on projected area growth. As such, the widening of The Old Road to six lanes is critical to passage of traffic and emergency vehicles in this area.

The existing Average Daily Trips (ADT) on The Old Road between Magic Mountain Parkway and Turnberry Lane is 33,000 and is forecasted to increase to 54,000 by the year 2030. This represents an increase of 61% over the next 23 years. With the implementation of this project we can achieve a minimum LOS C for the year 2030. Without the project, The Old Road will deteriorate to LOS F. Capacity enhancements on The Old Road are needed to accommodate the forecasted growth in corridor traffic and alleviate congestion on the Interstate 5 mainline.

The proposed Class II bike lanes along this segment of The Old Road will extend the existing network of bike lanes in the Santa Clarita Valley, providing a safe option to vehicular transportation, thereby reducing vehicle miles traveled (VMT) and greenhouse gas emissions. The addition of a half-mile segment of the County of Los Angeles Multi-purpose Regional River Trail will connect to the existing City of Santa Clarita Bikeway and Pedestrian Trail and the proposed bike lanes on The Old Road, providing connectivity for bicyclists and pedestrians.

Reconstruction of this segment of The Old Road poses some minor design challenges. The primary design constraints to building the project include: Clearance over the Santa Clara River, and fixed points at the Interstate 5 underpass at Rye Canyon Road as well as at several driveways along The Old Road. The topography of The Old Road in relationship to adjacent uses and the Santa Clara River play a significant role in the design of the project.

III. BACKGROUND AND PROJECT HISTORY

The physical location of the Santa Clarita Valley subjects its intersection and roadway system to a substantial amount of regional cross traffic. Various existing land uses, major activity locations, trip generators, and industrial goods movement within and through the area also add to high volumes of traffic on the regional roadway network.

The Old Road is designated in the Los Angeles County Preliminary Draft Santa Clarita Valley Area Plan as a 6-lane major highway. However, the section in question is only improved to 4-lanes. The Old Road is fully improved to 6-lanes from Stevenson Ranch Parkway approximately 2 miles south of the project to the southern terminus of the project. This project would add 2 more miles of widening and improvements along The Old Road and would complete the most heavily traveled remaining section of The Old Road.

IV. DISCUSSION AND ANALYSIS OF THE ALTERNATIVES

Five alternatives as well as a "No-Build" alternative were considered for this project

1. No-Build - This alternative is unsatisfactory for the following reasons:
   - The Santa Clara River Bridge is overtopped by a 100 year storm.
   - A concrete Armor-Flex blanket was installed in The Santa Clara River to protect a now abandoned LACSD sewer line. The County is required per the US Department of Fish and Game to remove the Armor-Flex for ecological reasons. LACDPW has agreed to remove the Armor-Flex but can not do so without addressing The Old Road Bridge because the Armor-Flex flex acts as a grade control structure which reduces the velocity of river current and therefore reduces scour which has caused damage to the bridge piers. Removal of the Armor-Flex without addressing the bridge would likely compromise the structural integrity of the bridge foundation.
   - The Santa Clara River Bridge does not meet current seismic design criteria.
   - The current roadway does not meet the objectives of the 2008 Preliminary Draft Santa Clarita Valley Area Plan for a 6-lane Major Highway.

- The existing facility does not meet 65 MPH design speed requisite.
- This alternative does not satisfy current or projected traffic demands.

Cost Estimate: There are no direct costs associated with this alternative however the socioeconomic and safety costs of doing nothing are immeasurable.

2. Preferred Alternative - 6-lane major highway with 55-65 mph design speed and Class II and Class III bike lanes. This alternative includes the following:
   - The reconstruction and widening of The Old Road from approximately 700 feet north of Magic Mountain Parkway matching proposed improvements to the intersection of The Old Road and Magic Mountain Parkway, to approximately 1150 feet north of State Route 126 at the Turnberry Lane intersection.
   - Intersection enhancements at The Old Road and Skyview Lane
   - The demolition, replacement, and widening of The Old Road Bridge over the Santa Clara River
   - Installation of associated bank protection for the bridge
   - Removal of existing Armor-Flex blanket in the river.
   - The demolition, replacement, and widening of a smaller bridge over the proposed County of Los Angeles Multi-purpose Regional River Trail (formerly the Pacific Rail Bridge)
   - Intersection enhancements at the intersection of The Old Road and Rye Canyon Road
   - Intersection enhancements at the proposed Old Road/Interstate 5 hook ramps (proposed Interstate 5 hook ramps are not a part of this project)
   - Installation of bank protection in the Santa Clara River to protect The Old Road north of LACSD's Valencia WRP
   - Extension of an existing drainage culvert
   - Realignment of the intersection of The Old Road and Henry Mayo Drive
   - The addition of bike lanes, sidewalks, widened shoulders and raised medians along segments of the project
   - Installation of a segment of the County of Los Angeles Multi-purpose Regional River Trail

Cost Estimate: Total project costs $65,220,000

3. Close the Santa Clara River Bridge and this segment of The Old Road - Traffic would need to be routed elsewhere (either existing locations or proposed locations). This alternative would likely require a new roadway and bridge across the Santa Clara River in order to satisfy existing and future traffic demands. Environmental impacts would likely be far greater than the preferred alternative.

Cost Estimate: Indeterminable amount.

4. Improved 4-lane instead of 6 lane roadway - This is similar to the preferred project but will not meet projected traffic demands nor satisfy the County General Plan. Overflow traffic would need to be re-routed to Interstate 5 and other local roads.

Cost Estimate: $58,070,000

5. 6-lane Major Highway with separated Class I bike route - Would require additional width to the new bridge or a separate bridge for grade separated bike lane and costly additional right-of-way acquisition.

Cost Estimate: $75,807,600

6. Mass Transit Alternative - The length of the project area makes a mass transit alternative infeasible. Mass transit from State Route 126 to Magic Mountain Parkway will not provide enough of a benefit to justify the cost.

Cost Estimate: Not Estimated

V. SYSTEM PLANNING

The Old Road is designated as a major highway in the 2008 Preliminary Draft Santa Clarita Valley Area Plan, and is projected to carry up to 54,000 ADT in year 2030 within the project limits. Widening is consistent with the 2008 Preliminary Draft Santa Clarita Valley Area Plan. The proposed project is also consistent with the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan and the Regional Transportation Plan.

VI. ENVIRONMENTAL CLEARANCE

A Preliminary Environmental Studies (PES) Form, dated October 2006 and prepared by Impact Sciences, has been approved by the California Department of Transportation (Caltrans) in January 2007. PES Forms are valid for three years. On December 6, 2006 a "field walk" with Caltrans and County Officials took place. Biological studies and technical reports as required by NEPA are currently underway. The probable environmental document necessary to comply with NEPA is an environmental assessment leading to a Finding of No Significant Impact.

VII. DESCRIPTION OF POTENTIAL HAZARDOUS MATERIALS

Environmental Data Resources (EDR) prepared an aerial-corridor study for the proposed project that included a search of available federal, state, and county agency databases to identify and map government regulated properties having

known recognized environmental conditions and potential environmental concerns within the vicinity of the Area of Potential Effect (APE). The study identified 143 properties within a one-mile radius of the project site. Most of these properties were found in the governmental databases and identified in the study because the properties are associated with land uses that use, generate, transport, or dispose of hazardous materials. Among the 143 properties, 22 properties were listed in the Leaking Underground Storage Tank (LUST) Information System, which contains an inventory of reported leaking underground storage tank incidents. Most of the 22 properties are located a fair distance from the APE and are closed cases. However, two unclosed LUST sites are located directly adjacent to The Old Road.

The Old Road and surrounding areas have historically been used for agricultural purposes and given the roadway's proximity to Interstate 5 and State Route 126, it is likely that soil containing pesticides, herbicides, and lead could be encountered during the project's construction period.

A Phase I Environmental Site Assessment has been performed by RT Franian & Associates a Registered Environmental Assessor (REA) and is referenced in the Preliminary Environmental Study.

VIII. IDENTIFICATION OF POTENTIAL OR PROPOSED SOURCES OF FUNDING

LACDPW has submitted two (2) Highway Bridge Program (HBP) applications. One application is for the replacement of The Old Road Bridge over the Santa Clara River in the amount of $19,317,676 including an 11.47% local match in the amount of $2,215,737. The second Highway Bridge Program (HBP) application is for The Old Road Bridge over the proposed Los Angeles County Multi-purpose Regional River Trail. The total amount for the application is $8,747,635 including an 11.47% local match in the amount of $1,003,353. No Highway Bridge Program local matching funds are being requested through this MTA Call for Projects application.

IX. PROJECT PROGRAMMING AND FUNDING

See Attachment A

X. PROJECT NOMINATION FACT SHEET – STIP

See Attachment B

XI. AUTHORIZED STAFF SIGNATURES OR REGISTERED CALIFORNIA PROFESSIONAL ENGINEERS STAMP

Prepared by Aric Rodriguez Date April 23, 2009
This Project Study Report Equivalent has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

REGISTERED CIVIL ENGINEER 4/23/09 DATE

XII. RECOMMENDATION

It is recommended that the project be approved to construct The Old Road widening as described in proposed Alternative 2 of this report. Alternative 2 is the most cost effective and provides enhanced safety and increased capacity to meet future traffic demands.

XIII. ATTACHMENTS

A) Project Funding - Financial Plan
B) STIP Fact Sheet
C) Approved Cost Estimate
D) Maps and Exhibits

Congested Management Process – Project Study Report

Project LAF5115

Project Description:

Avenue L Roadway Widening Project; widen Avenue L from one lane to two lanes in each direction from 40th St West to 57th St (total distance 1.7 mi) include left- and right-turn pockets where Avenue L intersects with 40th, 42nd, 45th, 50th and 55th Streets, curbs and gutter reconstruction, a 12-foot wide Class II bike lane in each direction and 8-foot wide sidewalks on both sides of the street.

PROJECT STUDY REPORT EQUIVALENT
AVENUE L ROADWAY WIDENING PROJECT
Vicinity Map

Avenue L - Between 57th Street West and 40th Street West

Approved by Local Agency:

1/26/11

Agency Chief Executive (i.e. Mayor, City Manager, CEO, CAO, PW Dir, City Eng., Gen. Mgr., or equivalent)

DATE

This Project Study Report Equivalent has been prepared under the direction of the following staff authorized by the sponsoring agency to sign for the work. The person signing below attests to and certifies the technical information contained herein and the engineering data upon which the recommendations, conclusions, and decisions are based.

REGISTERED PROFESSIONAL ENGINEER
JEFFREY T. PLETYAK
No. C51107
EXP. 9/30/2011
CIVIL
STATE OF CALIFORNIA

1/26/2011

authorized staff

DATE

If applicable California PE Stamp and Lic #

BODY OF REPORT

2. Project description, parameters and the functional improvement objective of the proposed project

Problem to be Solved?

Briefly describe why the project is needed and what problem the project is going to mitigate.

The project is needed to increase the use of alternative modes of transportation in the City of Lancaster to reduce vehicle trip length and reduce green house gas emissions for improved environmental and economic sustainability. The project will support the 2009 MTA LRTP goals by improving access to the SR 14 freeway carpool lanes, as well as to the planned High Speed Rail lines. <http://www.metro.net/board/Items/2009/10_October/20091014P&PItem10.pdf> (MTA document pages 27 and 41).
Avenue L is a major thoroughfare running through the City of Lancaster. The project will establish 12-foot-wide Class II bike lanes for enhanced bike use, replace dirt shoulders with sidewalks for enhanced pedestrian use, and widen the roadway from one lane to two lanes in each direction to improve access and connectivity to mass transit, bus, and future high speed rail facilities.
The project will enhance access to major trip generators including the federal government contractor facilities at the Palmdale regional airport, United States Air Force Plant 42 which employs a growing industrial and government workforce that support key military manufacturing and maintenance programs (B-2, F-35 JSF, Globalhawk UAV, and Naval UCAS).
The proposed Avenue L project will improve access to the SR-14 freeway carpool lanes, Lancaster Metrolink Station, Lancaster Transit Transfer Station, Palmdale Airport, and the planned Palmdale High Speed Rail.
The Avenue L project integrates auto, bus, bike, and pedestrian enhancements. It serves as part of the route for the AVTA Bus Line Number 5. A key element of the project is the widening of the bike lanes along the entire route, as well as adding sidewalk and curb to enhance both bike and pedestrian transportation and safety.
The project will mitigate traffic congestion, the lack of bike and pedestrian facilities, issues with bike and pedestrian safety, and vehicle emissions.

Work Description

Briefly describe major components of the proposed work, e.g., signals, bridge replacement, roadway widening, bicycle/pedestrian facility, etc.

PROPOSED SCOPE OF WORK

PHASE 1: AVENUE L - 57TH STREET WEST TO 47TH STREET WEST

- ***Reconstruct existing pavement or construct new pavement per GMED recommendations from Lab Report No. 35995.***
- ***Widen the roadway to increase the pavement width to 80 feet (see Attachment A) to accommodate two lanes in each direction, two-way left-turn lane, and 12-foot-wide bike lanes.***
- ***Reconstruct existing curb ramps to meet ADA guidelines.***
- ***Construct bus pads at existing bus stops.***
- ***Construct concrete C&G where missing to join existing C&G (if applicable).***
- ***Construct cross gutters on the south side at 47th Street West, 51st Street West, and 55th Street West.***
- ***Construct catch basins at the intersection of Avenue L and 50th Street West and at the intersection of Avenue L and 48th Street West to connect to the proposed storm drain systems on 50th Street West.***
- ***Modify existing culvert at 52nd Street West to accommodate the new width of road. Maintain existing drainage pattern (i.e. existing sheet flow across the roadway pavement shall be conveyed to the same dip crossing location).***
- ***Adjust the lid vertically for sewer and storm drain manholes to match the new pavement finished surface.***
- ***Restore traffic signal loops, pavement striping, and pavement markings.***
- ***Relocate the existing traffic signals at all corners of the 50th Street West intersection.***
- ***Provide left-turn and right-turn pockets at the 50th Street West and 55th Street West intersections.***
- ***Relocate existing signs if affected and install new signs where needed.***

- *Remove trees if affected by the proposed improvements.*
- *Plant trees within road R/W at locations where improvements are fully developed.*
- *Relocate affected mailboxes.*
- *Relocate and/or reconstruct existing private improvements (e.g. walls, fences, gates, etc.) to the proposed R/W line if they are within the area being acquired between the existing R/W line and the proposed R/W line. All existing encroachments will be removed or relocated by the property owner(s).*
- *Relocate existing and/or install bike lane signs at locations determined and approved by Traffic and Lighting Division. Ensure that all signs displaced during construction are placed back to their original location. All dilapidated signs are to be replaced.*
- *Incorporate all requirements received from Programs Development Division (PDD)'s Bikeways Coordinator into the plans, specifications, and/or estimate.*
- *Acquire additional road R/W to achieve a minimum of 100 feet width to accommodate intersection improvements, drainage improvements, and roadway widening.*

PHASE 2: AVENUE L - 47TH STREET WEST TO 40TH STREET WEST

- *Reconstruct existing pavement or construct new pavement per GMED recommendations from Lab Report No. 35995.*
- *Widen the roadway to increase the pavement width to 80 feet (see Attachment A) to accommodate two lanes in each direction, two-way left-turn lane, and 12-foot-wide bike lanes.*
- *Reconstruct existing curb ramps to meet ADA guidelines.*
- *Construct bus pads at existing bus stops.*
- *Construct sidewalk at various locations where needed. Reconstruct affected driveways to meet ADA guidelines.*
- *Construct concrete C&G where missing to join existing C&G (if applicable).*
- *Reconstruct the cross gutter on the south side at 45th Street West and 42nd Street West.*
- *May construct infiltration basins at the outlets of the existing culverts between 45th Street West and 42nd Street West.*

- *Modify existing culverts to accommodate the new width of road. Maintain existing drainage pattern (i.e. existing sheet flow across the roadway pavement shall be conveyed to the same dip crossing location).*
- *Adjust the lid vertically for sewer and storm drain manholes to match the new pavement finished surface.*
- *Restore traffic signal loops, pavement striping, and pavement markings.*
- *Relocate the existing traffic signals at the northwest and northeast corners of the 45th Street West intersection.*
- *Provide left-turn and right-turn pockets at the 40th Street West, 42nd Street West, and 45th Street West intersections.*
- *Relocate existing signs if affected and install new signs where needed.*
- *Remove trees if affected by the proposed improvements.*
- *Plant trees within road R/W at locations where improvements are fully developed.*
- *Protect and join the existing raised median from 40th Street West to 42nd Street West.*
- *Relocate affected mailboxes.*
- *Relocate and/or reconstruct existing private improvements (e.g. walls, fences, gates, etc.) to the proposed R/W line if they are within the area being acquired between the existing R/W line and the proposed R/W line. All existing encroachments will be removed or relocated by the property owner(s).*
- *Relocate existing and/or install bike lane signs at locations determined and approved by Traffic and Lighting Division. Ensure that all signs displaced during construction are placed back to their original location. All dilapidated signs are to be replaced.*
- *Incorporate all requirements received from Programs Development Division (PDD)'s Bikeways Coordinator into the plans, specifications, and/or estimate.*
- *Acquire additional road R/W to achieve a minimum of 100 feet width to accommodate intersection improvements, drainage improvements, and roadway widening.*

Project Limits

Briefly describe the physical limits or nature of the project. Attach a list, as needed, for multiple or various locations. Indicate length of project to nearest one-tenth of a mile. Use 0.1 if a spot location. Include additional sheets, if needed, to clearly define the project location or scope of work.

The proposed road construction project is located in the unincorporated area of Quartz Hill and in the City of Lancaster.

	Scope	Jurisdiction
Avenue L - 57th Street West to 40th Street West (T.G. 4104 F4:J4, 4105 A4; 1.74 mi)	***Reconstruct and Widen***	***County City of Lancaster***

3. Need and purpose for the project

Provide a concise discussion of the need and purpose of the proposal, supplemented as needed, by attached maps, charts, tables, letters, etc. As applicable, discuss existing and forecasted traffic, level of service, capacity adequacy, and safety data.

Avenue L is a major east-west roadway through the City of Lancaster which connects the City to the Antelope Valley SR-14 Freeway, Lancaster Metrolink Station, and Lancaster Transit Transfer Station. Development within the City of Lancaster has caused substantial increase in traffic volume along Avenue L. Additional development west of the project site within the City of Lancaster is also anticipated in the near future. The proposed project will significantly improve the Level of Service for 2035 from a level "F" without the project to levels "A" or "B" with the project as shown in the tables below.

Current Vehicle Conditions for the Peak Period (6-10 AM; 3-7 PM)

		AM	PM
iv.	***Peak hour volume***	***E/B - 966 W/B - 645***	***E/B - 928 W/B - 1052***
v.	***Level of Service (LOS) peak hour (based on HCM2000 p.12-16)***	***D***	***E***
vi.	***Peak hour delay (hours)***	***19***	***63***

Future Conditions Without Project for 2035:

		AM	PM
iv.	***Peak hour volume***	***E/B - 2098 W/B - 1400***	***E/B - 2015 W/B - 2285***
v.	***LOS peak hour (based on HCM2000 p.12-16)***	***F***	***F***
vi.	***Peak hour delay (hours)***	***285***	***1720***

Future Conditions With Project for 2035:

		AM	PM
iv.	***Peak hour volume***	***E/B - 2098 W/B - 1400***	***E/B - 2015 W/B - 2285***
v.	***LOS peak hour (based on HCM2000 p.30-5 for 45 mph multi-lane roadway)***	***E/B – A W/B - A***	***E/B – A W/B - B***
vi.	***Peak hour delay (hours)***	***145***	***427***

Along with improvements to the road, significant improvements will be made to bike travel by providing Class II bike lanes and pedestrian travel by replacing the existing dirt shoulders with sidewalks and curbs. As mentioned earlier, Avenue L is an important connecting corridor to the mass transit centers in the City of Lancaster.

What are the physical, economic, social, and environmental constraints that would affect the solution?

The physical, economic, social, and environmental constraints for the proposed project are minimal at this time, since the City of Lancaster is a growing suburban region. If the proposed project is delayed, then constraints will grow as the area is developed. Based on preliminary planning, some utility poles and trees will need to be relocated to accommodate the proposed project.

Discuss the need and purpose of the land use development proposal(s) generating need for the improvement.

The proposed project is consistent with long range plans developed by the 2009 MTA LRTP. The need for the project was jointly conceived by Los Angeles County and the City of Lancaster based on forecasted growth in the region.

Briefly list any controversial aspects or issues of the proposed work.

There are no known controversial aspects of the proposed work.

4. Background and project history

Briefly cover any prior project history that will help understand the situation.

In 2006, the City of Lancaster adopted City Ordinance No. 85 which established the collection of a Traffic Impact Fee which will be imposed on new development within the City that can be used on Avenue L outside of the city limits. Shortly after the city's adoption of the ordinance, the City and County have been cooperatively working on preliminary engineering to make improvements to vehicle, bike, and pedestrian transportation throughout the City.

Have any commitments been made?

Currently, the City of Lancaster and the County have been cooperatively preparing an Agreement whereby the County agrees to design and construct capacity and traffic control improvements along Avenue L to accommodate increases in traffic volumes, and the City agrees to contribute funds generated by the collection of the Special Traffic Impact Fee to the County to facilitate the design and construction of the County's improvements.

Does it mitigate a previous condition or new development? (MTA does not provide funding for developer mitigations)

The project will mitigate the present condition. The developer fee will be put in place for future mitigation.

Does the project have outside support or opposition? Briefly describe. Provide documentation of any community/public outreach that has taken place and describe community reaction to the project, if known.

General public support or opposition of the project is not known at this time. Planning meetings between Los Angeles County and the City of Lancaster are planned in early 2011. Plans for public outreach will be discussed at the meetings. A Mitigated Negative Declaration (MND) has been prepared due to concern over tree removal. The MND was addressed. See attached MND (Attachment D), with excerpt copied below:

> ***Mitigation Measures Included in the Project to Avoid Potentially Significant Effects***
>
> ***The proposed construction will require removal of 1 tree along Avenue K and 56 trees along Avenue L due to roadway widening and sidewalk construction and may have a significant impact on the existing visual character. Therefore, in order to mitigate for potential significant impact, Public Works will implement a tree replacement ratio of 2:1. Trees will be replaced with California native species. Therefore, the proposed project impact on visual character or quality of the site and its surroundings will be less than significant with mitigation incorporated.***
>
> ***III. Finding of No Significant Effect***

Based on the attached Initial Study, it has been determined that the project will not have a significant effect on the environment.

5. Discussion and analysis of the alternatives (including project costs) that satisfy project need and purpose. The discussion of alternatives should include a No Build Alternative

Briefly discuss project alternatives and variations of the project that will satisfy project goals, be cost effective, and avoid or minimize environmental and right-of-way effects; provide right-of-way and construction costs. Attach schematic maps of the alternatives and typical cross-sections as appropriate. Discuss and analyze existing and forecasted traffic. Are there alternative solutions? Provide estimated costs. Is right-of-way to be obtained? State the assumptions used in the right-of-way estimate. Discuss any potential adverse operational impacts due to the proposal. Should additional work be done to alleviate adverse impacts? As appropriate to the proposal, attach maps, alternatives (schematic geometrics), adjacent segments, and land uses.

From the CTC Adoption Guidelines -- the Project Study Report (and equivalent) cost estimate is to be based on preliminary-level engineering, but needs to be to the level of detail that, when considering the project for programming, will provide a reasonable approximation of the funding and staff resources that will be needed to deliver the project within the proposed schedule as outlined in the report.

Project costs shall be summarized in the project components as follows:

A. Completion of all permits and environmental studies
B. Preparation of Plans, Specifications, and Estimates (PS&E)
C. Acquisition of Right-of-Way
D. Construction and construction management and engineering, including surveys and inspection

If the project involves the State Highway system, project components No. C and No. D shall be further distinguished as follows:

1. Right-of-Way capital
2. Acquisition of Right-of-Way (support/soft costs)
3. Construction capital
4. Construction management and engineering, including surveys and inspection

In preparing the capital cost estimates, the degree of effort and detail for each study is expected to vary depending on the complexity and sensitivity of the issues. A cost breakdown for each of the major elements (i.e., roadway, structures, utility relocation, right-of-way acquisition, bikeways, striping, pedestrian improvements, transit facilities, etc.) of the project must be provided. A contingency factor to cover unanticipated items of work or cost increases may be applied. Generally, a factor of 25% is acceptable. However, a higher or lower percentage may be used. *MTA requires justification supporting the contingency factor used.*

The only options that are being considered are to go forward with the planned Avenue L Widening Project to improve vehicle, bike, and pedestrian facilities in a more efficient manner. The "No Build" alternative would result in continued congestion, and low bike and pedestrian use on the route.

Existing and forecasted traffic are described in the table below:

	Existing Conditions	Projected Future Conditions without Project (2035)	Projected Future Conditions with Project (2035)
Average Annual Daily Traffic (AADT)[1]	***21,300***	***46,300***	***46,300***
Vehicles per Hour (VPH)[1]	***1,900***	***4,100***	***4,100***

Growth Rate: ***3.15*** % Source: ***2010 CMP***

Project Cost Estimate is listed in the table below. Note that the County and the City of Lancaster will fund permits, environmental studies and PS&E prior to FY 2015-16.

COST ESTIMATE for FY 2015-16 and FY 2016-17

A. Completion of all permits and environmental studies		***Funded prior to the funding period***
B. Preparation of Plans, Specifications, and Estimates (PS&E)		***Funded prior to the funding period***
C. Acquisition of Right-of-Way		***$2,750,000***
D. Construction and construction management and engineering, including surveys and inspection		***$5,830,000***
Construction Cost:		
Roadway	***$3,760,000***	
Drainage	***$150,000***	
Signing, Striping (thermoplastic)	***$130,000***	
Traffic Signal	***$500,000***	
Traffic Control	***$110,000***	
Construction Contingency	***$470,000***	
Construction Engineering	***$710,000***	
TOTAL		***$8,580,000***

The right-of-way will be obtained with the needed funding shown in the cost estimate table above. The right-of-way cost estimate is based on the fair market value of the property.

There are no known adverse operational impacts due to this proposal.

6. System planning, including coordination and consistency with statewide, regional and local planning

Discuss the coordination, and consistency of the proposed project with statewide, regional and local planning efforts such as MTA's Long Range Transportation Plan (LRTP) and Short Range Transportation Plan, local general, specific area, and subdivision plans, the SCAG Regional Transportation Plan (RTP), Congestion Management Program (CMP), State Implementation Plan (SIP), Bicycle Transportation Strategic Plan, Short Range Transit Plans, etc., and information on expected timing of future local development.

The project will support the 2009 MTA LRTP goals by improving access to the SR-14 freeway carpool lanes, as well as to the planned High Speed Rail lines. http://www.metro.net/board/Items/2009/10_October/20091014P&PItem10.pdf (MTA document pages 27 and 41). The project is a coordinated effort between Los Angeles County and the City of Lancaster.

7. Inventory of environmental resources, identification of potential environmental issues and anticipated environmental processing type. Potential mitigation requirements and associated costs should also be identified

Briefly describe the inventory of environmental resources and identify environmental issues. Are there potential adverse impacts that would affect the viability of alternatives? Describe the type of environmental clearance to be obtained for CEQA and identify who should be the lead agency. When a Negative Declaration is the type of environmental clearance anticipated, it should be qualified with "... because no significant resources appear to be impacted. More detailed studies may change this conclusion." The environmental issues should be discussed in sufficient detail to determine if extensive studies or time-consuming processes that affect schedules are involved. Describe the type of environmental clearance for compliance with NEPA when involved. If the highway work is to be part of a larger overall local agency development EIR, what steps are needed for any required FHWA or FTA approvals? An identification of the permits that may have significant impact on the proposal is necessary. Any mitigation that requires Right-of-Way cost or time to develop or negotiate must be identified.

The Avenue L project should have minimal environmental impact. The attached Mitigated Negative Declaration (attachment D) concludes that environmental impacts have been mitigated. The street below is on Avenue L looking westward from 42nd Street West. The primary improvements will move the north dirt shoulder back to accommodate two lanes of traffic in each direction, 12' wide Class II bike lanes in each direction, and sidewalk and curb on both sides of the street.

Avenue L looking westward from 42nd Street West

Shown in the figure below is Avenue L looking eastward from 57th Street West. The primary environmental impact will be to move the north dirt shoulder back.

Avenue L looking eastward from 57th Street West

8. Description of potential hazardous materials/waste problems and potential mitigation or avoidance. Associated costs should also be identified.

Identify existing known waste sites within or immediately adjacent to the proposed project. Discuss how probable project alternatives may affect the sites.

There are no known hazardous waste problems or sites associated with this project or adjacent to the project.

9. Identification of the potential or proposed sources of funding, project funding eligibility (e.g. "Federal aid eligible"), discussion of proposed implementation, and the tentative delivery schedule of the significant milestones.

Identify which agencies will be the source of funds. Include the type (color) of funding. Which agencies will be responsible; which agencies will execute agreements; and, which will be the lead. Include start and finish dates for the significant milestones below:

A Start Environmental Studies
B Draft Environmental Document
C Final Environmental Document
D Begin Design Engineering
E Completion of Plans, Specifications, and Estimates
F Start Right-of-Way Acquisition
G Right-of-Way Certification
H Ready to Advertise
I Start Construction (Contract Award)
J Project Completion

The following table describes the Avenue L project funding plans.

Legend:
LAC/CL = LA County + City of Lancaster
L/L/M = LA County + City of Lancaster + MTA
LAC = LA County

		Source	Type	Resp.	Ex Agr	Lead	Dates
A	Start Environmental Studies	LAC/CL	Cash	LAC	LAC	LAC	Q1 FY2009-10
B	Draft Environmental Document	LAC/CL	Cash	LAC	LAC	LAC	Q3 FY2010-11
C	Final Environmental Document	LAC/CL	Cash	LAC	LAC	LAC	Q4 FY2010-11
D	Begin Design Engineering	LAC/CL	Cash	LAC	LAC	LAC	Q1 FY2009-10
E	Completion of Plans, Specifications, and Estimates	LAC/CL	Cash	LAC	LAC	LAC	Q4 FY2010-11
F	Start Right-of-Way Acquisition	L/L/M	Cash	LAC	LAC	LAC	Q1 FY2014-15
G	Right-of-Way Certification	L/L/M	Cash	LAC	LAC	LAC	Q2 FY2015-16
H	Ready to Advertise	L/L/M	Cash	LAC	LAC	LAC	Q2 FY2015-16
I	Start Construction (Contract Award)	L/L/M	Cash	LAC	LAC	LAC	Q3 FY2015-16
J	Project Completion	L/L/M	Cash	LAC	LAC	LAC	Q3 FY2016-17

10. Identification of the potential programming and funding of the project

If the project has already received partial funding [i.e., Project Development Support such as Project Approval/Environmental Document (PA/ED), Plans, Specifications and Estimates (PS&E), etc.], list the TIP, STIP, and/or Call for Projects identification numbers, the programmed amount, source of funds and phase of work programmed. Also include the amounts programmed by year.

PROGRAMMING DATA

FTIP (MPO/RTPA) _____ FY _____ $ Programmed: _____ Page _____

Amendment No. _____ FTIP PPNO _____ FHWA/FTA Approval Date _____

Call for Projects Identification Number: _____

Federal Funds $ _____ Phases PE _____ R/W _____ Const _____

Air Basin _____ (CMAQ only)

Also complete the funding tables in Attachments B (Financial Plan) & C (Cost Estimate)

11. A partially complete Project Programming Request, as described in the STIP Guidelines, shall be included as an attachment. Download from the Caltrans Web Site at: http://www.dot.ca.gov/hq/transprog/ocip/2008stipdev.htm

The fact sheet should be completed with the information that is available at the time of PSRE preparation. Examples of information which can be completed include: Existing STIP funding, local match funding, legislative districts, project description, responsible contacts, lead agency, project identification numbers, project map, etc.

See Attached STIP Fact Sheet (Attachment C)

12. Appropriate supporting attachments (i.e. maps, advance planning studies, cost estimate sheets, etc.).

Any of the above supporting documents should be attached, if useful.

All supporting documents are included in this Microsoft Word document

13. Authorized staff signature or registered California Professional Engineer stamp

The appropriate staff authorized by the sponsoring agency must sign the cover of the report. Usually (but not a firm requirement), this person is a Civil Engineer with the Professional Engineer (P.E.) designation. The California currently registered professional civil (or other registered engineer authorized to sign for the work) engineer (PE) stamp or seal and number with signature should be placed on a separate sheet which shall be part of the report. Also included on

this sheet shall be a statement indicating that the registered engineer or other staff person signing this document is attesting to the technical information contained herein and is judging the qualifications of any technical specialist providing engineering data upon which recommendations, conclusions, and decisions are based. The approval of the report will be a management decision. This Project Study Report Equivalent has been prepared under the direction of the following staff person, registered civil engineer or other registered professional engineer appropriate for the work. The appropriate staff or registered engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based. Also, please note that a signature of the top official of the sponsoring agency is required (Mayor, City Manager, City Engineer or Public Works Director, etc.).

If the project is for a bus purchase, then the General Manager of the sponsoring municipal transit operator can sign in place of the Civil Professional Engineer.

Authorized staff signature / registered California Professional Engineer stamp is included on the cover page

14. Recommendation

Please state which alternative is recommended. Briefly describe the alternative and the advantages and disadvantages of the recommended alternative. Also, describe the reasons why the other alternatives were not recommended.

Recommend funding the project. The alternative of "No Build" was not chosen since it would result in continued congestion, and low bike and pedestrian use on the route.

15. Attachments

The following should be attached to a PSRE:

a) STIP Fact Sheet
b) Financial plan
c) Approved cost estimate using appropriate format. Cost estimates must be in FY 11 dollars. The estimate must be attached to the PSRE for the studies and costs performed
d) Appropriate maps and back-up

Please indicate whether work will be completed using over-time. Please also indicate the project management percentage used as well as any burden rates.

FACTORS THAT AFFECT UNIT PRICES

Restrictive Work Hours or Method of Work

Restricting the contractors' working hours or the method of work on a project may have major effects on prices. The prices for work that is limited to short shifts, or required to be completed in long shifts, or limited to night time operations should be increased to reflect the cost of premium wages required for such work and for the general inefficiencies and decreased productivity that may result. Night work for plant operations (i.e. - asphalt concrete production) can especially be expensive when small quantities are involved. Plants usually do not operate at night and may require special production runs at much higher than normal operating costs.

All attachments have been included in this document

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Congested Management Process – Initial Study/ENV Assessment

Project RIV031215

Project Description:

FRENCH VALLEY PKWY IC/ARTERIAL PHASES: PH II - CONSTRUCT 2 LN NB CD (N/O WINCHESTER IC ON-RAMPS TO JUST N/O RTE 15/215 JCT WITH CONNECTORS TO RTE 15 AND RTE 215 (I-215 PM: 8.43 TO 9.75); AND PH III - CONSTRUCT 6 LN OC (JEFFERSON TO YNEZ) & RAMPS, NB/SB AUX LN, CD LNS (1 LN NB & 3 LN SB) & MODIFY WINCHESTER RD IC (EA:43272) (PPNO. 0021K).

No Action Alternative

The No Action Alternative would not require the relocation of any utilities because no improvements would be implemented. The No Action Alternative may have indirect impacts on emergency services because there would be a greater number of intersections and ramp locations that would operate at a deficient level of service. During peak hours, this could result in an increase in response time for service providers.

Avoidance, Minimization, and/or Mitigation Measures

The following are standard requirements for construction projects, which serve to avoid or minimize impacts.

Utilities

U-1 During project design, the precise requirements for relocating the utilities and providing for the extension of utilities within the right-of-way of French Valley Parkway will be evaluated in cooperation with all pertinent utility service providers during preparation of the plans, specifications, and estimates (PS&E) phase. It is anticipated that a dedicated conduit and steel casing would be provided in the bridge for water and gas lines.

Emergency Services

ES-1 Consistent with standard provisions in the cities of Murrieta and Temecula, a Traffic Management Plan would be prepared to ensure that emergency access is maintained during construction of the proposed project. A component of the Traffic Management Plan would be to coordinate with the emergency service providers to ensure their operations can be adjusted. The Department is responsible for approving the Traffic Management Plan for the project. No further avoidance, minimization, or mitigation measures would be required to address potential adverse effects on emergency services during construction.

Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

The Department, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

The Department is committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Affected Environment

The following reports regarding the project's potential effect on traffic and circulation, both during construction and after completion of the project, were prepared:

- The *Need and Purpose Report* (October 2004), which discusses the circulation need of the facility in substantial detail; the report is included in its entirety as Appendix B of the *Draft Project Report* (August 2006).
- The *Revised Traffic Operations Analysis Report* (January 2008).
- The *Volume Development Methodology Report* (June 2004), which contains the assumptions pertaining to the development of traffic volumes.

The I-15 is a north-south freeway that provides regional access for the cities of Murrieta and Temecula and adjacent portions of unincorporated Riverside County. The primary east-west arterials in the cities have interchanges on the I-15 or the I-215 and also serve to carry traffic between the freeways and the surrounding areas. Table 2.11 lists the freeway interchanges that currently serve the cities of Murrieta and Temecula, as well as the distances between adjacent interchanges.

Table 2.11
Existing Freeway Interchanges Within the Limits of Murrieta and Temecula

Interchange	Kilopost	Kilometers to Next Interchange to the South
I-215 at Clinton Keith Interchange	20.1	2.9
I-215 at Los Alamos Rd	17.2	1.9
I-215 at Murrieta Hot Springs Rd	15.3	4.6
I-15 at California Oaks Rd	17.1	1.8
I-15 at Murrieta Hot Springs Rd	15.3	4.6
I-15 at Winchester Rd (SR-79 North)	10.7	2.7
I-15 at Rancho California Rd	8.0	2.5
I-15 at SR-79 South	5.5	–

The objective is to provide an LOS within the theoretical capacity for the mainline facility and ramps. The LOS scale ranges from "A" to "F," with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. Table 2.12 describes traffic flow quality for different levels of service. This is also graphically depicted in Figure 2-6, Levels of Service.

Traffic volumes and LOS values for existing conditions were previously shown in Tables 1.1 through 1.3 in Chapter 1. Table 1.1 provides the information for existing intersection levels of service. The table indicates that there are no intersections which show operational deficiencies during the AM peak hour under existing conditions. There are seven intersection locations that are currently operating at a deficient level of service in the PM peak hour. Operational deficiency is defined as LOS E or F, as described in Table 2.12.

Table 2.12
Level of Service Descriptions Showing Volume to Capacity Relationships

Level of Service	Traffic Flow Quality	V/C Value
A	Describes free-flow operations. Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effect of incidents or point breakdowns are easily absorbed at this level.	0–0.60
B	Represents reasonably free flow, and free-flow speeds are maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.	0.61–0.70
C	Provides for flow with speeds at or near the free-flow speed of the freeway. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.	0.71–0.80
D	The level at which speeds begin to decline slightly with increasing flows and density begins to increase somewhat more quickly. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.	0.81–0.90
E	At its highest density value, LOS E describes operation at capacity. Operations at this level are volatile, because there are virtually no usable gaps in the traffic stream. Vehicles are closely spaced, leaving little room to maneuver within the traffic stream at speeds that still exceed 49 miles per hour. Any disruption of the traffic stream, such as vehicles changing lanes, can establish a disruptive wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown with extensive queuing. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded the driver is poor.	0.91–1.00
F	Describes breakdowns in vehicular flow. Such conditions generally exist within queues forming behind breakdown points. LOS F operations within a queue are the result of a breakdown or bottleneck at a downstream point. LOS F is also used to describe conditions at the point of the breakdown or bottleneck and the queue discharge flow that occurs at speeds lower than the lowest speed for LOS E, as well as the operations within the queue that forms upstream. Whenever LOS F conditions exist, they have the potential to extend upstream for significant distances.	Above 1.00

V/C = Volume/Capacity ratio

Source: *Highway Capacity Manual 2000*, Transportation Research Board, National Research Council, 2000.

The intersection of Madison Avenue and Murrieta Hot Springs Road is not included in this analysis since it did not exist at the time the study was initiated in 2003 and it is not included in the 2025 Comprehensive Transportation Plan (CTP) traffic model, which is maintained by the Southern California Association of Governments (SCAG). Based on the traffic volumes on roadways intersecting Murrieta Hot Springs Road, the intersection of Jefferson Avenue and Murrieta Hot Springs Road is more critical than the intersection of Madison Avenue and Murrieta Hot Springs Road. Even if Madison Avenue were to be included in the analysis, the signal timing bandwidths are likely to change little, if at all. It is anticipated that inclusion of the intersection of Madison Avenue/Murrieta Hot Springs Road in this analysis would not change the findings of this analysis.

Tables 1.2 and 1.3 (on pages 5–8 in Chapter 1) represent the freeway segments in the AM and PM peak hours, respectively. Based on level of service, there is one

LEVELS OF SERVICE
for Multi-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		60	Highest level of service. Traffic flows freely with little or no restrictions on maneuverability. **No delays**
B		60	Traffic flows freely, but drivers have slightly less freedom to maneuver. **No delays**
C		60	Density becomes noticeable with ability to maneuver limited by other vehicles. **Minimal delays**
D		57	Speed and ability to maneuver is severely restricted by increasing density of vehicles. **Minimal delays**
E		55	Unstable traffic flow. Speeds vary greatly and are unpredictable. **Minimal delays**
F		<55	Traffic flow is unstable, with brief periods of movement followed by forced stops. **Significant delays**

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Levels of Service — Figure 2-6

French Valley Parkway Improvements Project

Source: Department of Transportation.

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deficient ramp location (Rancho California Road southbound off-ramp) in the AM peak period. As previously indicated in Chapter 1, based on LSA Associates' field observations, there are two existing operational deficiencies in the project area. These are identified as follows:

- The first operational deficiency occurs during the AM peak hour when the queue on the southbound off-ramp at Winchester Road extends back onto the freeway mainline, sometimes as far as the I-15/I-215 Junction. This is the result of the fact that the intersection at the ramp terminus cannot accommodate the number of vehicles fed to it by the freeway off-ramp.

- The second operational deficiency, which occurs northbound during the PM peak hour, occurs at the Winchester Road direct on-ramp. Traffic in this area breaks down and causes queuing back to the intersection's ramp terminus. Based on traffic volumes, Highway Capacity Manual (HCM) procedures suggest that this merge should operate at Level of Service (LOS) C. However, HCM procedures do not account for the large number of vehicles in the adjacent upstream loop on-ramp and the I-215's downstream junction, which both cause a high proportion of vehicles in the right lanes of the mainline. The inadequate gaps for on-ramp traffic cause heavy proportions of mainline traffic in the right lanes and, in turn, cause the merge area to fail.

- Lastly, in the northbound direction during the PM peak hour, the merge from the Winchester Road direct on-ramp breaks down and causes queuing back to the intersection at the ramp terminus. Because there is a heavy proportion of mainline traffic concentrated in the right lanes, there are inadequate gaps for on-ramp traffic. As a result of these inadequacies, the merge areas fail to function adequately.

Environmental Consequences

As the area experiences growth, the future travel demand will decrease the LOS on the I-15. The projected traffic volumes would be the same both with the proposed project and with the No Action Alternative because the same growth assumptions would apply in both cases. As discussed above under Growth, the proposed project would not change land uses or remove substantial constraints that limit the implementation of approved land uses. However, with the proposed project, the level of service would improve because it would increase the capacity and the efficiency of the existing roadway.

Two timeframes were evaluated: 2012, which represents approximate completion of the proposed improvements and 2030, which is the long-range scenario. On July 12, 2007, a meeting was held with the Federal Highway Administration (FHWA), the Department, and the City of Temecula (the focus/purpose of this meeting was specifically to address/resolve design and/or traffic analysis considerations associated with the project). It was agreed that a 2012 opening date and a 2030 design year would be acceptable. A traffic sensitivity analysis was conducted and verified that there would not be substantial differences in traffic between use of a 2010 and a 2012 opening date. A design exception was granted allowing the use of the 2030 design year.

Year 2012

Intersection Evaluation

Year 2012 represents the opening year for the proposed project. Table 2.13 provides the projected 2012 levels of service both with and without the proposed project for various intersections within the project study area. These intersection locations are identified in Figure 2-7. The table indicates that no intersections are projected to operate at a deficient level of service in the AM peak hour with the proposed project; however, there are two intersections that operate at a deficient level of service with the No Action Alternative. In the PM peak hour, there are five intersections that operate at a deficient level of service under both scenarios. The deficient LOS intersections are identified as following:

AM Peak Hour (No Action Alternative Only)

- Ynez Road/Winchester Road (LOS F)
- Ynez Road/Rancho California Road (LOS F)

PM Peak Hour (Proposed Project Only)

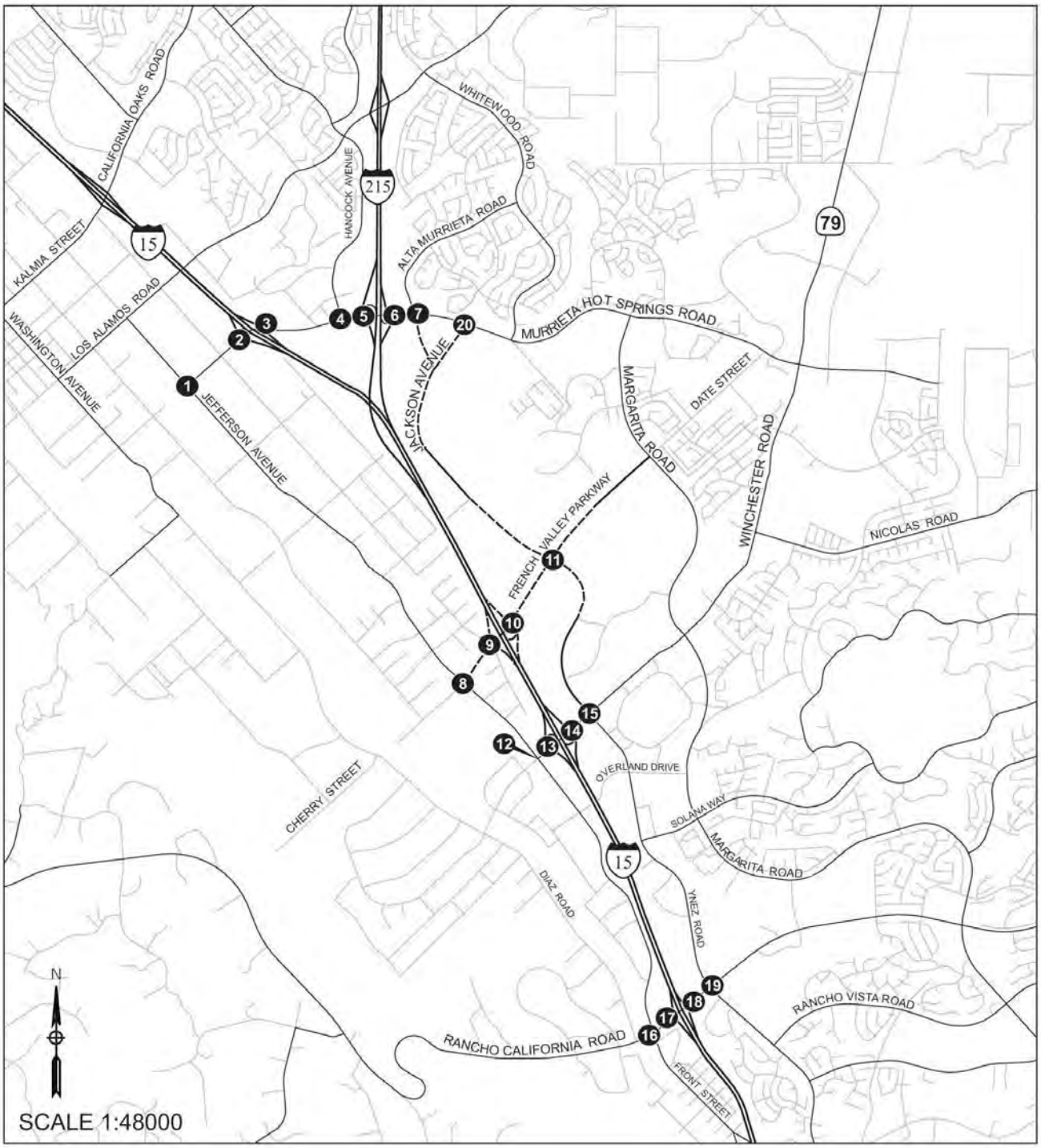
- Jefferson Avenue/Murrieta Hot Springs Road (LOS E)

PM Peak Hour (Proposed Project and No Action Alternative)

- Alta Murrieta Drive and Murrieta Hot Springs Road (LOS E in both scenarios)
- Ynez Road and Winchester Road (LOS E with proposed project/LOS F with No Action Alternative)
- Old Town Front Street and Rancho California Road (LOS F in both scenarios)
- I-15 Southbound (SB) Ramps/Rancho California Road (LOS E with proposed project/LOS F with No Action Alternative)

PM Peak Hour (No Action Alternative Only)

- Ynez Road/Rancho California Road (LOS E)



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PROPOSED ROADWAY ALIGNMENT

STUDY AREA INTERSECTIONS

Source: LSA, Inc. 2008

D:/Projects/Moffatt/J024/Graphics/Ex_InterLoca_032709.ai

Study Area Intersection Locations — Figure 2-7

French Valley Parkway Improvements Project

R:/Projects/Moffatt/J024/Graphics/IS-ESA/Ex2-7_InterLoca.pdf

Table 2.13
Year 2012 Intersection Levels of Service

Intersection	Control	Proposed Project				No Action Alternative			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay		LOS	
1. Jefferson Ave/Murrieta Hot Springs Rd	Signal	34.9	C	75.7	E*	27.4	C	45.8	D
2. I-15 SB Ramps/Murrieta Hot Springs Rd	Signal	14.3	B	14.5	B	14.7	B	16.5	B
3. I-15 NB Ramps/Murrieta Hot Springs Rd	Signal	14.5	B	14.7	B	12.2	B	15.3	B
4. Hancock Ave/Murrieta Hot Springs Rd	Signal	8.9	A	15.8	B	9.5	A	13.1	B
5. I-215 SB Ramps/Murrieta Hot Springs Rd	Signal	12.4	B	12.4	B	14.6	B	12.9	B
6. I-215 NB Ramps/Murrieta Hot Springs Rd	Signal	2.7	A	9.9	A	3.0	A	10.1	B
7. Alta Murrieta Dr/Murrieta Hot Springs Rd	Signal	33.8	C	71.6	E*	31.3	C	78.8	E*
8. Jefferson Ave/French Valley Pkwy	Signal	23.6	C	26.6	C	No Intersection		No Intersection	
9. I-15 SB Ramps/French Valley Pkwy	Signal	10.7	B	18.0	B	No Intersection		No Intersection	
10. I-15 NB Ramps/French Valley Pkwy	Signal	9.0	A	11.1	B	No Intersection		No Intersection	
11. Ynez Rd/French Valley Pkwy	Signal	21.7	C	31.4	C	No Intersection		No Intersection	
12. Jefferson Ave/Winchester Rd	Signal	32.5	C	41.5	D	32.2	C	51.6	D
13. I-15 SB Ramps/Winchester Rd	Signal	18.5	B	16.3	B	20.1	C	17.9	B
14. I-15 NB Ramps/Winchester Rd	Signal	11.7	B	17.8	B	15.9	B	25.0	C
15. Ynez Rd/Winchester Rd	Signal	53.6	D	67.6	E*	88.9	F*	314.3	F*
16. Old Town Front St/Rancho California Rd	Signal	36.3	D	101.8	F*	35.1	D	137.0	F*
17. I-15 SB Ramps/Rancho California Rd	Signal	42.0	D	73.3	E*	47.0	D	80.7	F*
18. I-15 NB Ramps/Rancho California Rd	Signal	15.2	B	11.9	B	15.5	B	14.8	B
19. Ynez Rd/Rancho California Rd	Signal	35.3	D	51.7	D	96.1	F*	71.9	E*
20. Jackson Ave/Murrieta Hot Springs Rd	Signal	12.3	B	16.7	B	11.9	B	21.1	C

*Exceeds Caltrans level of service standard of LOS D.
Notes: Delay = Average control delay in seconds
LOS = Level of Service
NB = northbound
SB = southbound

Source: LSA Associates, Inc., January 2008.

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It should also be noted that, while the Alta Murrieta Drive/Murrieta Hot Springs Road intersection would operate at LOS E in the PM peak hour for both scenarios, there is a decrease in delay from 78.8 seconds with the No Action Alternative to 71.6 seconds with the proposed project. The Old Town Front Street/Rancho California Road intersection would operate at LOS F for both scenarios; however, there is a decrease in delay from 137.0 seconds for the No Action Alternative to 101.8 seconds for the Proposed Project. There would be a substantial delay reduction at the Ynez Road/Winchester Road intersection. With the No Action Alternative, this intersection would operate at LOS F and experience a 314.3-second delay. However, with the proposed project, this intersection would operate at LOS E and have a 67.6-second delay.

The above discussion focuses on the intersections that are projected to operate at deficient levels of service in the year 2012. It should also be noted that several intersections, though not identified as operating at a deficient level of service, would operate at a decreased LOS and/or increased delays when comparing the No Action and Build Alternatives.

The intersections that are projected to be operating at deficient levels of service in 2012 are predominately those that serve as major collector streets to provide access to I-15 and/or I-215. Both Winchester Road and Rancho California Road provide access to I-15. Murrieta Hot Springs Road provides access to both I-15 and I-215. Ynez Road, Alta Murrieta, and Jefferson Avenue/Old Town Front Street all provide access to major employment and retail areas within the cities of Temecula and Murrieta. Improved LOS will facilitate access to these uses.

Ynez Road is the first major street east of I-15 and serves office, commercial, and industrial uses. The Town Center Shopping Center, a major shopping mall, is located at Ynez Road and Rancho California Road in the city of Temecula. Old Town Front Street is the extension of Jefferson Avenue south of Rancho California Road. In this location, Old Town Front Street/Jefferson Avenue provide access to commercial and industrial uses. Alta Murrieta Drive is the first street east of I-215 and extends to the north. The road serves as a major collector, providing access to office and commercial uses as well as the Alta Murrieta residential development in the city of Murrieta. The area surrounding the Jefferson Avenue/Murrieta Hot Springs Road intersection is a mix of undeveloped land, residential uses, and office uses. By 2012, the regional shopping center on Murrieta Hot Springs Road between I-15 and I-215 is expected to be constructed.

Freeway Evaluation

Tables 2.14 and 2.15 provide the 2012 freeway levels of service with the proposed project for the AM and PM peak hours, respectively. These tables indicate that, with the proposed project, there are 9 ramp locations that are projected to operate with a deficient LOS in the AM peak hour and 23 ramp locations that would experience a deficient LOS in the PM peak hour. Tables 2.16 and 2.17 provide projected 2012 levels of service and freeway volumes for the No Action Alternative during the AM and PM peak hours, respectively. With the No Action Alternative, there are 8 ramp locations in 2012 that are projected to operate at a deficient LOS in the AM peak hour and 31 ramp locations in the PM peak hour.

In Year 2012, the addition of the French Valley Parkway Improvements Project would generally improve the traffic conditions compared to the No Action Alternative. In the AM peak hour, there are two locations where the level of service would be degraded with the proposed project (i.e., when compared to the No Action Alternative). These locations are:

- The I-15 northbound Murrieta Hot Springs Road slip on-ramp, which would worsen to LOS F with the proposed project compared to LOS D with the No Action Alternative and

- The I-15 southbound Murrieta Hot Springs Road off-ramp, which would worsen to LOS E with the proposed project compared to LOS D with the No Action Alternative.

However, with the implementation of the French Valley Parkway improvements, level of service at the Winchester Road southbound off-ramp would improve. Under the No Action Alternative, this off-ramp is projected to operate at LOS F, whereas, with the proposed project the Winchester Road off-ramp from the collector-distributor (C/D) line would operate at LOS B.

Greater improvements would be realized in the pm peak hour. in the pm peak hour, the proposed project would operate at a better level of service at the following location:

- ***I-15 northbound Old Town Front Street on-ramp to Rancho California Road off-ramp:*** The proposed project would operate at LOS E (compared to LOS F with the No Action Alternative).

Table 2.14
Year 2012 Proposed Project Freeway Volumes and Levels of Service in AM Peak Hour

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound									
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	4,337				107.6	10.6	B
Rancho California Rd Off-Ramp	2 Lane Off	4	4,337			935	88.9	6.8	B
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	3,402				107.6	8.3	B
Rancho California Rd Loop On-Ramp	1 Lane On	4	3,402		533		97.0	9.1	B
Rancho California Rd Loop On-Ramp to Rancho California Rd Slip On-Ramp	Basic	4	3,935				107.6	9.6	B
Rancho California Rd Slip On-Ramp	1 Lane On	4	3,935		1,253		96.0	11.5	B
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	5,189				107.6	12.7	C
Winchester Rd Off-Ramp	2 Lane Off	4	5,189			1,039	88.4	6.2	B
Winchester Rd Off-Ramp to French Valley Pkwy Off-Ramp	Basic	4	4,150				107.1	10.1	B
French Valley Pkwy Off-Ramp	1 Lane Off	4	4,150			553	90.4	13.1	C
French Valley Pkwy Off-Ramp to Lane Addition	Basic	4	3,597	1,176			107.6	8.8	B
Lane Addition-Ramp to I-15/215 Split	Basic	5	3,597	2,423			110.0	6.9	A
I-15/I-215 Split	Major Divergence	5	3,597			1,727			#
I-15/215 Split to I-15 C/D Merge	Basic	3	1,870	1,260			105.2	6.2	A
I-15 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B Weave	5	3,129			295	93.8	7.0	B
Murrieta Hot Springs Rd Off-Ramp to Lane Drop	Basic	4	2,834				107.6	6.9	A
Lane Drop to Murrieta Hot Springs Rd On-Ramp	Basic	3	2,834				105.2	9.4	B
Murrieta Hot Springs Rd On-Ramp	1 Lane On	3	2,834		1,023		97.0	9.7	B
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	3,857				105.2	12.9	C
I-215 Northbound									
I-215 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B Weave	3	2,890				85.0	11.9	B
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	2,698				102.7	13.8	C
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	2,698		133		95.0	15.6	C
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot	Basic	2	2,831				102.7	14.5	C

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Table 2.14
Year 2012 Proposed Project Freeway Volumes and Levels of Service in AM Peak Hour
(Continued)

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Springs Rd Slip On-Ramp									
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	2,831		572		81.0	23.2	F*
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	3,403				101.8	17.6	D
I-15 Southbound									
Kalmia St On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	5,850				97.3	21.2	D
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	5,850			1,238	87.6	22.0	E*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	4,612				105.1	15.4	C
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	4,612		24		92.0	18.6	D
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Slip On-Ramp	Basic	3	4,636				105.1	15.5	C
Murrieta Hot Springs Rd Slip On-Ramp to I-15 C/D Off-Ramp	Type B Weave	4	4,636		239	1,641	87.7	13.9	C
I-15 C/D Off-Ramp to I-215 Junction-Ramp	Basic	3	3,234				105.2	10.8	B
I-15/215 Junction-Ramp	Major Merge	3	3,234		2,987				#
I-15/215 Junction to Lane Drop	Basic	5	6,221	3,157			110.0	11.9	C
Lane Drop to I-15 C/D Merge	Basic	4	6,221	3,157			107.3	15.3	C
I-15 C/D Merge	Major Merge	4	6,221	1,151					#
I-15 C/D Merge to Winchester Rd Slip On-Ramp	Basic	6	7,371				110.0	11.8	C
Winchester Rd Slip On-Ramp	1 Lane On	6	7,371		194		94.0	15.3	C
Winchester Rd Slip On-Ramp to Lane Drop 1	Basic	6	7,565				110.0	12.1	C
Lane Drop 1 to Lane Drop 2	Basic	5	7,565				109.8	14.5	C
Lane Drop 2 to Rancho California Rd Off-Ramp	Basic	4	7,565				101.4	19.6	D
Rancho California Rd Off-Ramp	2 Lane Off	4	7,565			2,249	83.5	14.7	C
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	5,317				107.6	13.0	C
Rancho California Rd On-Ramp	1 Lane On	4	5,317		787		96.0	11.6	B
Rancho California Rd On-Ramp to Old Town Front St Off-Ramp	Basic	4	6,103				107.5	14.9	C

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Table 2.14
Year 2012 Proposed Project Freeway Volumes and Levels of Service in AM Peak Hour
(Continued)

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Southbound									
Los Alamos Rd On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	4,903				†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	2	4,903			882	88.9	28.6	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	4,021				93.6	22.6	E*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	4,021		416		79.0	24.4	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	4,437				†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	4,437		66		78.0	24.2	F*
Murrieta Hot Springs Rd Slip On-Ramp to Lane Addition-Ramp	Basic	2	4,503				†	†	F*
Lane Addition-Ramp to I-215 (C/D Split)	Basic	3	4,503				105.2	15.0	C
I-215 C/D Split	2 lane off	3	4,503	1,516					#
I-215 C/D Split to I-15/215 Junction-Ramp	Basic	2	2,987	1,516			102.7	15.3	C
C/D Line 1 –I-15 Northbound									
Winchester Rd Loop On-Ramp	C/D Lane Addition	1			399		‡	‡	‡
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	C/D Line	1	399	399			‡	‡	‡
Winchester Rd Slip On-Ramp	C/D Lane Addition	1	399	399	777		‡	‡	‡
Winchester Rd Slip On-Ramp to French Valley Pkwy Loop On-Ramp	CD Line	2	1,176	1,176			103.0	6.0	A
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	2	1,176	1,176	327		97.0	9.0	B
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	C/D Line	2	1,503	1,503			105.0	5.0	A
French Valley Pkwy Slip On-Ramp	1 Lane onto C/D	3	1,503	1,503	920		96.0	11.0	B
French Valley Pkwy Slip On-Ramp to I-15/I-215 C/D Split	C/D Line	3	2,423	2,423			105.0	8.0	B
I-15/I-215 C/D Split	C/D Divergence	3	2,423	2,423		1,260			#
I-15/I-215 C/D Split to Lane Drop	C/D Line	2	1,260	1,260			103.0	7.0	A

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Table 2.14
Year 2012 Proposed Project Freeway Volumes and Levels of Service in AM Peak Hour
(Continued)

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
C/D Line 1 – I-215 Northbound									
I-15/I-215 CD Split to C/D Lane Drop	C/D Line	2	1,163	1,163			103.0	6.0	A
Lane Drop to I-215 C/D Merge	C/D Line	1	1,163	1,163			‡	‡	‡
C/D Line 1 – Southbound									
I-15 C/D Off-Ramp to I-1-215 C/D Merge	C/D Line	2	1,641	1,641			103.0	8.4	B
I-215 C/D Split to I-15/215 C/D Merge	Basic	2	1,516	1,516			103.0	7.8	B
I-15/I-215 C/D Merge to Lane Drop	C/D Line	4	3,157	3,157			108.0	7.7	B
C/D Lane Drop to French Valley Pkwy Off-Ramp	C/D Line	3	3,157	3,157			105.0	11.0	B
French Valley Pkwy Off-Ramp	2 Lane Off	3	3,157	3,157		1,044	88.0	5.5	A
French Valley Pkwy Off-Ramp to Winchester Rd Off-Ramp	C/D Line	2	2,113	2,113			103.0	11.0	B
C/D Line 2 – Southbound									
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	1			358		‡	‡	‡
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	C/D Line	3	358	358			103.0	1.8	A
French Valley Pkwy Slip On-Ramp	C/D Lane Addition	1	358	358	58		‡	‡	‡
French Valley Pkwy Slip On-Ramp to Lane Drop	C/D Line	2	416	416			102.7	2.1	A
Winchester Rd Off-Ramp	2 C/D Lane Drop	2	2,113	2,113		2,113	84.1	6.2	B
Lane Drop to Winchester Rd Loop On-Ramp	C/D Line	1	416	416			‡	‡	‡
Winchester Rd Loop On-Ramp	C/D Lane Addition	2	416	416	734		97.0	7.1	B
Winchester Rd Loop On-Ramp to I-15 C/D Merge	C/D Line	2	1,151	1,151			102.7	5.9	A

† Speed and density not defined for over-capacity segment
‡ No HCM methodology for 1-lane segments. Volume is within capacity
# No effective models of performance for major merge areas
* Exceeds Caltrans level of service standard of LOS D.

Source: LSA Associates, Inc., January 2008.

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Table 2.15
Year 2012 Proposed Project Freeway Volumes and Levels of Service in PM Peak Hour

Segment	Type	PM Peak Hour							
		Mainline Lanes	Mainline Volume	CD Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound									
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	8,429				91.4	24.3	E*
Rancho California Rd Off-Ramp	2 Lane Off	4	8,429			1,067	88.3	13.3	C
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	7,361				103.0	18.8	D
Rancho California Rd Loop On-Ramp	1 Lane On	4	7,361		1,134		95.0	15.0	C
Rancho California Rd Loop On-Ramp to Rancho California Rd Slip On-Ramp	Basic	4	8,495				90.3	24.8	E*
Rancho California Rd Slip On-Ramp	1 Lane On	4	8,495		1,316		94.0	16.0	F*
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	9,811				†	†	F*
Winchester Rd Off-Ramp	2 Lane Off	4	9,811			1,045	88.4	13.0	F*
Winchester Rd Off-Ramp to French Valley Pkwy Off-Ramp	Basic	4	8,766				85.7	26.9	E*
French Valley Pkwy Off-Ramp	1 Lane Off	4	8,766			672	89.9	24.7	F*
French Valley Pkwy Off-Ramp to Lane Addition	Basic	4	8,093	1,936			96.0	22.2	E*
Lane Addition-Ramp to I-15/215 Split	Basic	5	8,093	3,666			109.0	15.6	C
I-15/I-215 Split	Major Divergence	5	8,093			3,886			#
I-15/215 Split to I-15 C/D Merge	Basic	3	4,207	1,906			105.2	14.0	C
I-15 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B Weave	5	6,113			458	88.7	14.6	C
Murrieta Hot Springs Rd Off-Ramp to Lane Drop	Basic	4	5,655				107.6	13.8	C
Lane Drop to Murrieta Hot Springs Rd On-Ramp	Basic	3	5,655				100.0	19.8	D
Murrieta Hot Springs Rd On-Ramp	1 Lane On	3	5,655		1,322		96.0	13.7	C
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	6,978				†	†	F*

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Table 2.15
Year 2012 Proposed Project Freeway Volumes and Levels of Service in PM Peak Hour
(Continued)

Segment	Type	PM Peak Hour							
		Mainline Lanes	Mainline Volume	CD Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Northbound									
I-215 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B Weave	3	5,646				74.4	26.1	E*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	4,960				†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	4,960		207		59.0	27.5	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	5,167				†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	5,167		342		42.0	29.2	F*
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	5,509				†	†	F*
I-15 Southbound									
Kalmia St On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	5,503				97.3	21.2	D
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	5,503			1,179	87.6	22.0	E*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	4,323				105.2	14.4	C
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	4,323		67		92.0	18.6	D
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	4,390				105.2	14.6	C
Murrieta Hot Springs Rd Slip On-Ramp to I-15 C/D Off-Ramp	Type B Weave	4	4,390		456	2,067	78.4	17.8	C
I-15 C/D Off-Ramp to I-215 Junction-Ramp	Basic	3	2,778				105.2	9.3	B
I-15/215 Junction-Ramp	Major Merge	3	2,778						#
I-15/215 Junction to Lane Drop	Basic	5	5,345	3,976			110.0	10.2	B
Lane Drop to I-15 C/D Merge	Basic	4	5,345	3,976			107.6	13.1	C
I-15 C/D Merge	Major Merge	4	5,345	1,499					#
I-15 C/D Merge to Winchester Rd Slip On-Ramp	Basic	6	6,844				110.0	10.9	B
Winchester Rd Slip On-Ramp	1 Lane On	6	6,844		359		94.0	15.3	C
Winchester Rd Slip On-Ramp to Lane Drop 1	Basic	6	7,204				110.0	11.5	C
Lane Drop 1 to Lane Drop 2	Basic	5	7,204				110.0	13.8	C

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Table 2.15
Year 2012 Proposed Project Freeway Volumes and Levels of Service in PM Peak Hour
(Continued)

Segment	Type	PM Peak Hour							
		Mainline Lanes	Mainline Volume	CD Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Lane Drop 2 to Rancho California Rd Off-Ramp	Basic	4	7,204				104.0	18.2	D
Rancho California Rd Off-Ramp	2 Lane Off	4	7,204			2,293	83.5	14.7	C
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	4,911				107.2	12.0	C
Rancho California Rd On-Ramp	1 Lane On	4	4,911		850		96.0	11.6	B
Rancho California Rd On-Ramp to Old Town Front Street Off-Ramp	Basic	4	5,761				107.6	14.1	C
I-215 Southbound									
Los Alamos Rd On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	5,136				†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	2	5,136			887	88.9	29.9	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	4,250				87.5	25.6	E*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	4,250		104		81.0	24.0	E*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	4,354				84.1	27.3	E*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	4,354		122		79.0	24.1	F*
Murrieta Hot Springs Rd Slip On-Ramp to Lane Addition-Ramp	Basic	2	4,475				†	†	F*
Lane Addition-Ramp to I-215 (C/D Split)	Basic	3	4,475				105.2	14.9	C
I-215 C/D Split	2 lane off	3	4,475	1,909					#
I-215 C/D Split to I-15/215 Junction Ramp	Basic	2	2,566	1,909			102.7	13.2	C
C/D Line 1 – I-15 Northbound									
Winchester Rd Loop On-Ramp	C/D Lane Addition	1			721		‡	‡	‡
Winchester Rd Loop On-Ramp to Winchester Road Slip On-Ramp	C/D Line	1	721	721			‡	‡	‡
Winchester Rd Slip On-Ramp	C/D Lane Addition	1	721	721	1,215		‡	‡	‡
Winchester Rd Slip On-Ramp to French Valley Pkwy Loop On-Ramp	C/D Line	2	1,936	1,936			103.0	9.9	B
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	2	1,936	1,936	862		95.0	15.4	C
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	C/D Line	2	2,797	2,797			105.0	9.3	B

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Table 2.15
Year 2012 Proposed Project Freeway Volumes and Levels of Service in PM Peak Hour
(Continued)

Segment	Type	PM Peak Hour							
		Mainline Lanes	Mainline Volume	CD Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
French Valley Pkwy Slip On-Ramp	1 Lane onto C/D	3	2,797	2,797	869		95.0	15.0	C
French Valley Pkwy Slip On-Ramp to I-15/I-215 C/D Split	C/D Line	3	3,666	3,666			105.0	12.0	
I-15/I-215 C/D Split	C/D Divergence	3	3,666	3,666		1,906	†		#
I-15/I-215 C/D Split to Lane Drop	C/D Line	2	1,906	1,906			103.0	10.0	B
CD Line 1 – I-215 Northbound									
I-15/I-215 C/D Split to C/D Lane Drop	C/D Line	2	1,760	1,760			103.0	9.0	B
Lane Drop to I-215 C/D Merge	C/D Line	1	1,760	1,760			‡	‡	‡
CD Line 1 – Southbound									
I-15 C/D Off-Ramp to I-1-215 C/D Merge	C/D Line	2	2,067	2,067			103.0	10.6	B
I-215 C/D Split to I-15/215 C/D Merge	Basic	2	1,909	1,909			103.0	9.8	B
I-15/I-215 C/D Merge to Lane Drop	C/D Line	4	3,976	3,976			108.0	9.7	B
C/D Lane Drop to French Valley Pkwy Off-Ramp	C/D Line	3	3,976	3,976			105.0	13.0	C
French Valley Pkwy Off-Ramp	2 Lane Off	3	3,976	3,976		1,903	88.0	5.5	A
French Valley Pkwy Off-Ramp to Winchester Rd Off-Ramp	C/D Line	2	2,073	2,073			103.0	11.0	B
CD Line 2 – Southbound									
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	1			606		‡	‡	‡
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	CD Line	3	606	606			103.0	3.1	A
French Valley Pkwy Slip On-Ramp	C/D Lane Addition	1	606	606	187		‡	‡	A
French Valley Pkwy Slip On-Ramp to Lane Drop	CD Line	2	794	794			102.7	4.1	A
Winchester Rd Off-Ramp	2 C/D Lane Drop	2	2,073	2,073		2,073	84.1	6.2	B
Lane Drop to Winchester Rd Loop On-Ramp	C/D Line	1	794	794			‡	‡	‡
Winchester Rd Loop On-Ramp	C/D Lane Addition	2	794	794	706		97.0	7.2	B
Winchester Rd Loop On-Ramp to I-15 C/D Merge	C/D Line	2	1,499	1,499			102.7	7.7	B

† Speed and density not defined for over-capacity segment
‡ No HCM methodology for 1-lane segments. Volume is within capacity
# No effective models of performance for major merge areas
* Exceeds Caltrans level of service standard of LOS D

Source: LSA Associates, Inc., January 2008.

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Table 2.16
Year 2012 No Action Alternative Freeway Volumes and Levels of Service in AM Peak Hour

Segment	Type	Mainline Lanes	AM Peak Hour					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound								
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	4,680			107.6	11.4	C
Rancho California Rd Off-Ramp	2 Lane Off	4	4,680		936	88.9	7.3	B
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	3,744			107.6	9.2	B
Rancho California Rd Loop On-Ramp	1 Lane On	4	3,744	547		97.0	9.7	B
Ranch California Loop On-Ramp to Rancho California Rd Slip On-Ramp	Basic	4	4,291			107.6	10.5	B
Rancho California Rd Slip On-Ramp	1 Lane On	4	4,291	1,331		96.0	12.0	B
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	5,622			107.6	13.7	C
Winchester Rd Off-Ramp	2 Lane Off	4	5,622		1,150	88.0	7.3	B
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	4,472			107.6	10.9	B
Winchester Rd Loop On-Ramp	1 Lane On	4	4,472	459		96.0	10.3	B
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	4,931			107.6	12.1	C
Winchester Rd Slip On-Ramp	1 Lane On	4	4,931	995		96.0	15.6	C
Winchester Rd Slip On-Ramp to Lane Addition	Basic	4	5,927			107.6	14.5	C
Lane Addition-Ramp 1 to Lane Addition	Basic	5	5,927			110.0	11.3	C
Lane Addition to I-15/215 Split	Basic	6	5,927			110.0	9.5	B
I-15/I-215 Split	Major Diverge	6	5,927		2,846			
I-15/215 Split to Lane Drop	Basic	4	3,081			107.6	7.5	B
Lane Drop to Murrieta Hot Springs Rd Off-Ramp	Basic	3	3,081			105.2	10.3	B
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	3,081		292	91.5	15.6	C
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd On-Ramp	Basic	3	2,789			105.2	9.3	B
Murrieta Hot Slip Springs Rd On-Ramp	1 Lane On	3	2,789	1,044		95.0	14.5	C
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	3,833			105.2	12.8	C

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Table 2.16
Year 2012 No Action Alternative Freeway Volumes and Levels of Service in AM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	AM Peak Hour					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Northbound								
I-15/215 Split to Murrieta Hot Springs Rd Off-Ramp	Basic	2	2,846			102.7	14.6	C
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	2	2,846		195	91.9	10.3	B
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	2,650			102.7	13.6	C
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	2,650	146		95.0	15.4	C
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	2,796			102.7	14.3	C
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	2,796	583		92.0	18.4	D
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	3,379			102.7	17.4	D
I-15 Southbound								
Kalmia St On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	5,831			97.9	20.9	D
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	5,831		1,235	87.6	22.0	D
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	4,596			105.1	15.3	C
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	4,596	24		92.0	18.5	D
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	4,619			105.1	15.4	C
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	3	4,619	238		94.0	16.6	C
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction	Basic	3	4,858			104.7	16.3	D
I15/I215 Junction-Ramp	Major Merge	3	4,858					
I-15/215 Junction to Winchester Rd Off-Ramp	Basic	5	9,345			103.8	18.9	D
Winchester Rd Off-Ramp	1 Lane Off	4	9,345		2,358	83.1	54.6	F*
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	6,986			105.2	17.5	D
Winchester Rd Loop On-Ramp	1 Lane On	4	6,986	876		95.0	15.1	C
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	7,863			98.6	21.0	D
Winchester Rd Slip On-Ramp	1 Lane On	4	7,863	134		94.0	15.9	C
Winchester Rd Slip On-Ramp to Rancho California Rd Off-	Basic	4	7,997			97.1	21.7	D

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Table 2.16
Year 2012 No Action Alternative Freeway Volumes and Levels of Service in AM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	AM Peak Hour					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Ramp								
Rancho California Rd Off-Ramp	2 Lane off	4	7,997		2,303	83.3	15.5	C
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	5,694			107.6	13.9	C
Rancho California Rd On-Ramp	1 Lane On	4	5,694	787		96.0	12.0	C
Rancho California Rd On-Ramp to Old Town Front St Off-Ramp	Basic	4	6,481			106.9	16.0	C
I-215 Southbound								
Los Alamos Rd On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	4,892			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	2	4,892		889	88.8	30.1	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	4,003			94.0	22.4	E*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	4,003	417		80.0	24.2	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	4,420			†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	4,420	67		79.0	24.4	F*
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction.	Basic	2	4,487			†	†	F*

† Speed and density not defined for over-capacity segment
# No effective models of performance for major merge areas
* Exceeds Caltrans level of service standard of LOS D

Source: LSA Associates, Inc., January 2008.

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Table 2.17
Year 2012 No Action Alternative Freeway Volumes and Levels of Service in PM Peak Hour

Segment	Type	Mainline Lanes	PM Peak Hour					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound								
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	9,085			†	†	F*
Rancho California Rd Off-Ramp	2 Lane Off	4	9,085		1,058	88.4	14.2	F*
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	8,027			96.8	21.8	D
Rancho California Rd Loop On-Ramp	1 Lane On	4	8,027	1,167		94.0	15.7	F*
Ranch California Rd Loop On-Ramp to Ranch California Rd Slip On-Ramp	Basic	4	9,194			†	†	F*
Rancho California Rd Slip On-Ramp	1 Lane On	4	9,194	1,318		93.0	16.7	F*
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	10,512			†	†	F*
Winchester Rd Off-Ramp	2 Lane Off	4	10,512		1,217	87.7	14.7	F*
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	9,295			†	†	F*
Winchester Rd Loop On-Ramp	1 Lane On	4	9,295	825		94.0	16.7	F*
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	10,120			†	†	F*
Winchester Rd Slip On-Ramp	1 Lane On	4	10,120	1,409		93.0	17.4	F*
Winchester Rd Slip On-Ramp to Lane Addition	Basic	4	11,529			†	†	F*
Lane Addition-Ramp 1 to Lane Addition	Basic	5	11,529			†	†	F*
Lane Addition to I-15/215 Split	Basic	6	11,529			101.9	19.8	D
I-15/I-215 Split	Major Diverge	6	11,529		5,536			#
I-15/215 Split to Lane Drop	Basic	4	5,993			107.5	14.7	C
Lane Drop to Murrieta Hot Springs Rd Off-Ramp	Basic	3	5,993			95.7	22.0	D
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	5,993		449	90.8	28.0	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd On-Ramp	Basic	3	5,544			101.0	19.3	D
Murrieta Hot Slip Springs Rd On-Ramp	1 Lane On	3	5,544	1,346		87.2	22.8	F*
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	6,890			†	†	F*

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Table 2.17
Year 2012 No Action Alternative Freeway Volumes and Levels of Service in PM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	PM Peak Hour					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Northbound								
I-15/215 Split to Murrieta Hot Springs Rd Off-Ramp	Basic	2	5,536			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	2	5,536		718	89.7	25.3	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	4,818			†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	4,818	217		64.0	26.7	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	5,035			†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	5,035	383		47.0	28.8	F*
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	5,418			†	†	F*
I-15 Southbound								
Kalmia St On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	5,482			101.6	105.2	D
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	5,482		1,245	87.6	21.2	D
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	4,236			105.2	14.1	C
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	4,236	68		93.0	17.3	D
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	4,305			105.2	14.4	C
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	3	4,305	440		94.0	16.7	C
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction	Basic	3	4,744			105.0	15.9	C
I15/I215 Junction-Ramp	Major Merge	3	4,744					#
I-15/215 Junction to Winchester Rd Off-Ramp	Basic	5	9,126			105.2	18.3	D
Winchester Rd Off-Ramp	1 Lane Off	4	9,126		2,413	82.8	24.2	F*
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	6,712			106.3	16.6	D
Winchester Rd Loop On-Ramp	1 Lane On	4	6,712	886		95.0	14.7	C
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	7,599			101.1	19.8	D

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Table 2.17
Year 2012 No Action Alternative Freeway Volumes and Levels of Service in PM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	PM Peak Hour					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Winchester Rd Slip On-Ramp	1 Lane On	4	7,599	334		95.0	15.4	C
Winchester Rd Slip On-Ramp to Rancho California Rd Off-Ramp	Basic	4	7,933			97.8	21.3	D
Rancho California Rd Off-Ramp	2 Lane off	4	7,933		2,280	83.4	15.4	C
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	5,652			107.6	13.8	C
Rancho California Rd On-Ramp	1 Lane On	4	5,652	887		96.0	12.1	C
Rancho California Rd On-Ramp to Old Town Front St Off-Ramp	Basic	4	6,539			106.8	16.1	D
I-215 Southbound								
Los Alamos Ro On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	5,009			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	2	5,009		858	89.2	29.2	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	4,150			90.4	24.2	E*
Murrieta Hot Springs Ro Loop On-Ramp	1 Lane On	2	4,150	106		83.0	23.5	E*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	4,256			87.3	25.7	E*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	4,256	126		81.0	23.6	F*
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction.	Basic	2	4,382			83.1	27.7	E*

† Speed and density not defined for over-capacity segment
# No effective models of performance for major merge areas
* Exceeds Caltrans level of service standard of LOS D

Source: LSA Associates, Inc., January 2008.

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- ***I-15 northbound Rancho California Road off-ramp:*** The proposed project would operate at LOS C (compared to LOS F with the No Action Alternative).
- ***I-15 northbound Rancho California Road loop on-ramp:*** The proposed project would operate at LOS C (compared to LOS F with the No Action Alternative).
- ***I-15 northbound Rancho California Road loop on-ramp to Rancho California Road slip on-ramp:*** The proposed project would operate at LOS E (compared to LOS F with the No Action Alternative).

There is one location in the PM peak hour where the LOS would degrade with the proposed project (compared to the No Action Alternative). The I-15 southbound Murrieta Hot Springs Road off-ramp would operate at a LOS E with the proposed project compared to a LOS D with the No Action Alternative.

Although the LOS would remain at LOS E or LOS F in several locations, there have been substantial volume reductions on the mainline that would improve operations. In addition, all segments on the C/D roadway system, including those connecting to Winchester Road, are projected to operate at LOS D or better during both the AM and PM peak hours.

Year 2030

Intersection Evaluation

In 2030, the level of service at intersections in the project area deteriorates further. This is due to the projected local and regional growth in the area. Table 2.18 provides the projected 2030 level of service at arterial highway intersections with and without the proposed project. With the proposed project, there are five locations in the AM peak hour that operate at a deficient LOS and eight locations in the PM peak hour that operate at a deficient LOS. With the No Action Alternative, the deficient number of intersections increases to six locations in the AM peak hour and ten locations in the PM peak hour. The following highlights the deficient intersections.

AM Peak Hour Deficient Intersections

- The Alta Murrieta Drive/Murrieta Hot Springs Road intersection would operate at LOS E both with the proposed project and the No Action Alternative. However, with the proposed project, the projected delay time is 68.0 seconds compared to 72.1 seconds with the No Action Alternative.
- The I-15 northbound ramps/Winchester Road intersection would operate at LOS B with the proposed project and LOS F with the No Action Alternative.
- The Ynez Road/Winchester Road intersection would operate at LOS F with both the proposed project and the No Action Alternative. The project delay time with proposed project is 157.6 seconds compared to 546.8 seconds with the No Action Alternative.
- With the proposed project, the Old Town Front Street/Rancho California Road intersection would operate at LOS E, with a 74.7-second delay and LOS F with a 159.3-second delay under the No Action Alternative.

- The I-15 southbound ramps/Rancho California Road intersection would operate at LOS E with the proposed project and LOS F with the No Action Alternative.
- With the proposed project, the Ynez Road/Rancho California Road intersection would operate at LOS E with a 69.6-second delay and LOS F with a 258.9-second delay under the No Action Alternative.

PM Peak Hour Deficient Intersections

- The Jefferson Avenue/Murrieta Hot Springs Road intersection would operate at LOS F both with or without the proposed project. With the proposed project, there would be 167.2 seconds of delay versus 115.1 seconds of delay with the No Action Alternative.
- The Alta Murrieta Drive/Murrieta Hot Springs Road intersection would operate at LOS F both with and without the proposed project. However, with the proposed project, the projected delay time is 181.8 seconds compared to 237.4 seconds with the No Action Alternative.
- The Jefferson Avenue/Winchester Road intersection would operate at LOS F both with and without the proposed project. However, with the proposed project, the projected delay time is 83.4 seconds compared to 479.3 seconds with the No Action Alternative.
- The I-15 southbound ramps/Winchester Road intersection would operate at LOS C with the proposed project and LOS E with the No Action Alternative.
- The I-15 norththbound ramps/Winchester Road intersection would operate at LOS D with the proposed project and at LOS F with a 175.2-second delay under the No Action Alternative.
- The Ynez Road/Winchester Road intersection would operate at LOS F with both with the proposed project and the No Action Alternative. The delay time with proposed project is 226.4 seconds compared to 574.3 seconds with the No Action Alternative.
- The Old Town Front Street/Rancho California Road intersection would operate at LOS F with a 250.8-second delay with the proposed project and at LOS F with a 236.4-second delay under the No Action Alternative.
- The I-15 southbound ramps/Rancho California Road intersection would operate at LOS F both with and without the proposed project. With the proposed project, drivers would experience an average 158.4-second delay. Under the No Action Alternative, the project average delay is 180.2 seconds.
- The Ynez Road/Rancho California Road intersection would operate at LOS F with a 114.9-second delay with the proposed project and at LOS F with a 361.6-second delay under the No Action Alternative.
- The Jackson Avenue/Murrieta Hot Springs Road intersection would operate at LOS F with a 128.4-second delay with the proposed project and at LOS F with a 136.8-second delay under the No Action Alternative.

Freeway Evaluation

Tables 2.19 and 2.20 provide the projected 2030 level of service for the freeways with the proposed project in the AM and PM peak hours, respectively. With the proposed project, there would be 22 deficient locations in the AM peak hour and 44 deficient locations in the PM peak hour. Tables 2.21 and 2.22 provide the No Action Alternative's 2030 levels of service for the freeways in the AM and PM peak hours, respectively. With the No Action Alternative, there would be 28 deficient locations in the AM peak hour and 55 deficient locations in the PM peak hour.

For design year 2030 conditions with the No Action Alternative, reasonable improvements to adjacent interchanges at Murrieta Hot Springs Road and Winchester Road were included to ascertain if traffic operations can be improved without the implementation of the French Valley Parkway Project. However, even with additional ramp improvements, traffic operations are worse than with the proposed project.

In addition, under 2030 conditions, a separate scenario was considered that included ramp metering along with the above improvements. Because the mainline I-15 is over capacity, all ramp merge areas would continue to operate at unacceptable levels of service during at least one peak hour.

Table 2.18
Year 2030 Intersection Levels of Service

Intersection	Control	Proposed Project				No Action Alternative			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Jefferson Ave/Murrieta Hot Springs Rd	Signal	37.4	D	167.2	F*	30.4	C	115.1	F*
2. I-15 SB Ramps/Murrieta Hot Springs Rd	Signal	15.6	B	17.5	B	17.0	B	22.2	C
3. I-15 NB Ramps/Murrieta Hot Springs Rd	Signal	14.8	B	21.6	C	15.5	B	12.4	B
4. Hancock Ave/Murrieta Hot Springs Rd	Signal	8.7	A	16.7	B	9.6	A	12.9	B
5 I-215 SB Ramps/Murrieta Hot Springs Rd	Signal	19.0	B	19.4	B	11.6	B	13.9	B
6. I-215 NB Ramps/Murrieta Hot Springs Rd	Signal	3.9	A	7.2	A	3.8	A	9.9	A
7. Alta Murrieta Dr/Murrieta Hot Springs Rd	Signal	68.0	E*	181.8	F*	72.1	E*	237.4	F*
8. Jefferson Ave/French Valley Pkwy	Signal	23.3	C	32.2	C	*No Intersection*		*No Intersection*	
9. I-15 SB Ramps/French Valley Pkwy	Signal	10.5	B	10.3	B	*No Intersection*		*No Intersection*	
10. I-15 NB Ramps/French Valley Pkwy	Signal	10.0	A	7.9	A	*No Intersection*		*No Intersection*	
11. Ynez Road/French Valley Pkwy	Signal	26.5	C	43.0	D	*No Intersection*		*No Intersection*	
12. Jefferson Ave/Winchester Rd	Signal	42.1	D	83.4	F*	51.1	D	479.3	F*
13. I-15 SB Ramps/Winchester Rd	Signal	22.1	C	21.3	C	51.2	D	73.6	E*
14. I-15 NB Ramps/Winchester Rd	Signal	15.3	B	39.7	D	83.6	F*	175.2	F*
15. Ynez Rd/Winchester Rd	Signal	157.6	F*	226.4	F*	546.8	F*	574.3	F*
16. Old Town Front St/Rancho California Rd	Signal	74.7	E*	250.8	F*	159.3	F*	236.4	F*
17. I-15 SB Ramps/Rancho California Rd	Signal	64.1	E*	158.4	F*	81.0	F*	180.2	F*
18. I-15 NB Ramps/Rancho California Rd	Signal	21.8	C	11.7	B	17.3	B	13.1	B
19. Ynez Rd/Rancho California Rd	Signal	69.6	E*	114.9	F*	258.9	F*	361.6	F*
20. Jackson Ave/Murrieta Hot Springs Rd	Signal	20.1	C	128.4	F*	19.2	B	136.8	F*

* Exceeds LOS standard
Notes:
Delay = Average control delay in seconds
LOS= Level of Service

Source: LSA Associates, Inc., January 2008.

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Table 2.19
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the AM Peak Hour

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound									
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	6,375				107.1	15.7	C
Rancho California Rd Off-Ramp	2 Lane Off	4	6,375			1,286	87.3	11.3	B
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	5,089				107.0	12.4	C
Rancho California Rd Loop On-Ramp	1 Lane On	4	5,089		725		96.0	11.9	B
Rancho California Rd Loop On-Ramp to Rancho California Rd Slip On-Ramp	Basic	4	5,814				107.6	14.2	C
Rancho California Rd Slip On-Ramp	1 Lane On	4	5,814		1,686		95.0	13.8	C
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	7,500				101.9	19.4	D
Winchester Rd Off-Ramp	2 Lane Off	4	7,500			1,318	87.3	10.9	B
Winchester Rd Off-Ramp to French Valley Pkwy Off-Ramp	Basic	4	6,182				107.4	15.2	C
French Valley Pkwy Off-Ramp	1 Lane Off	4	6,182			697	89.8	18.5	D
French Valley Pkwy Off-Ramp to Lane Addition-Ramp	Basic	4	5,485	1,578			107.6	13.4	C
Lane Addition-Ramp to I-15/215 Split	Basic	5	5,485	3,150			110.0	10.5	B
I-15/I-215 Split	Major Divergence	5	5,485			2,633			#
I-15/215 Split to I-15 C/D Merge	Basic	3	2,851	1,638			105.2	9.5	B
I-15 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B weave	5	4,489			450	89.8	10.5	B
Murrieta Hot Springs Rd Off-Ramp to Lane Drop	Basic	4	4,039				107.6	9.9	B
Lane Drop to Murrieta Hot Springs Rd On-Ramp	Basic	3	4,039				105.2	13.5	C
Murrieta Hot Springs Rd On-Ramp	1 Lane On	3	4,039		1,401		89.0	20.0	D
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	5,440				101.9	18.7	D
I-215 Northbound									
I-215 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B Weave	3	4,146				80.9	17.9	D
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	3,887				96.3	21.3	D
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	3,887		227		85.0	22.1	E*

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Table 2.19
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the AM Peak Hour
(Continued)

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	4,114				91.4	23.7	E*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	4,114		963		63.0	26.9	F*
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	5,077				†	†	F*
I-15 Southbound									
Kalmia St On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	7,842				†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	7,842			1,493	86.6	26.5	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	6,350				89.4	24.9	E*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	6,350		35		89.0	20.8	D
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	6,384				88.7	25.3	E*
Murrieta Hot Springs Rd Slip On-Ramp to I-15 C/D Off-Ramp	Type B Weave	4	6,384		333	2,034	84.4	19.9	D
I-15 C/D Off-Ramp to I-215 Junction-Ramp	Basic	3	4,683				105.0	15.6	C
I-15/215 Junction-Ramp	Major Merge	3	4,683		4,325				#
I-15/215 Junction-Ramp to Lane Drop	Basic	5	9,008	3,914			105.9	17.9	D
Lane Drop to I-215 C/D Merge	Basic	4	9,008	3,914			†	†	F*
I-215 C/D Merge	Major Merge	4	9,008	1,422					#
I-215 C/D Merge to Winchester Rd Slip On-Ramp	Basic	6	10,430				107.2	17.1	D
Winchester Rd Slip On-Ramp	1 Lane On	6	10,430		177		56.0	24.4	F*
Winchester Rd Slip On-Ramp to Lane Drop 1	Basic	6	10,607				106.6	17.5	D
Lane Drop 1 to Lane Drop 2	Basic	5	10,607				91.8	24.3	E*
Lane Drop 2 to Rancho California Rd Off-Ramp	Basic	4	10,607				†	†	F*
Rancho California Rd Off-Ramp	2 Lane Off	4	10,607			2,606	82.1	20.6	F*
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	8,001				97.7	21.7	D
Rancho California Rd On-Ramp	1 Lane On	4	8,001		672		95.0	14.5	C
Rancho California Rd On-Ramp to Old Town Front St Off-Ramp	Basic	4	8,673				87.4	26.1	E*

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Table 2.19
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the AM Peak Hour
(Continued)

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Southbound									
Los Alamos Rd On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	6,909				†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	2	6,909			1,109	87.9	24.5	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	5,800				†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	5,800		341			33.0	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	6,140				†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	6,140		64			32.8	D
Murrieta Hot Springs Rd Slip On-Ramp to Lane Addition	Basic	2	6,204				†	†	F*
Lane Addition-Ramp to I-215 (C/D Split)	Basic	3	6,204				92.2	23.6	E*
I-215 C/D Split	2 lane off	3	6,204	1,879					#
I-215 C/D Split to I-15/215 Junction-Ramp	Basic	2	4,325	1,879			102.7	85.1	E*
CD Line 1 - I-15 Northbound									
Winchester Rd Loop On-Ramp	C/D Lane Addition	1			445		97.0	3.6	A
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	C/D Line	1	445	445			103.0	2.3	A
Winchester Rd Slip On-Ramp	C/D Lane Addition	1	445	445	1,133		97.0	9.2	B
Winchester ad Slip On-Ramp to French Valley Pkwy Loop On-Ramp	C/D Line	2	1,578	1,578			103.0	8.1	B
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	2	1,578	1,578	412		96.0	11.4	B
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	C/D Line	3	1,990	1,990			105.0	6.6	A
French Valley Pkwy Slip On-Ramp	1 Lane onto C/D Line	3	1,990	1,990	1,160		95.0	14.0	C
French Valley Pkwy Slip On-Ramp to I-15/I-215 C/D Split	C/D Line	3	3,150	3,150			105.0	11.0	B
I-15/I-215 C/D Split	C/D Divergence	3	3,150	3,150		1,638			#
I-15/I-215 C/D Split to I-15 C/D Merge	C/D Line	2	1,638	1,638			103.0	8.0	B

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Table 2.19
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the AM Peak Hour
(Continued)

Segment	Type	AM Peak Hour							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
CD Line 1 – I-215 Northbound									
I-15/I-215 C/D Split to C/D Lane Drop	C/D Line	2	1,513	1,513			103.0	7.8	B
C/D Lane Drop to I-215 C/D Merge	C/D Line	1	1,513	1,513			‡	‡	‡
CD Line 1 – Southbound									
I-15 C/D Off-Ramp to I-15/I-215 C/D Merge	C/D Line	2	2,034	2,034			103.0	10.4	B
I-215 C/D Split to I-15/215 C/D Merge	Basic	2	1,879	1,879			103.0	9.6	B
I-15/I-215 C/D Merge to Lane Drop	C/D Line	4	3,914	3,914			108.0	9.6	B
C/D Lane Drop to French Valley Pkwy Off-Ramp	C/D Line	3	3,914	3,914			105.0	13.0	C
French Valley Pkwy Off-Ramp	2 Lane Off	3	3,914	3,914		1,316	87.0	8.3	B
French Valley Pkwy Off-Ramp to Winchester Rd Off-Ramp	C/D Line	2	2,597	2,597			103.0	13.0	C
CD Line 2 – Southbound									
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	1			452		‡	‡	‡
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	CD Line	1	452	452			‡	‡	‡
French Valley Pkwy Slip On-Ramp	C/D Lane Addition	1	452	452	73		‡	‡	‡
French Valley Pkwy Slip On-Ramp to Lane Drop	CD Line	2	525	525			102.7	2.7	A
Winchester Rd Off-Ramp	2 C/D Lane Drop	2	2,597	2,597		2,597	82.1	8.9	B
Lane Drop to Winchester Rd Loop On-Ramp	C/D Line	1	525	525			‡	‡	‡
Winchester Rd Loop On-Ramp	C/D Lane Addition	2	525	525	898		97.0	8.4	B
Winchester Rd Loop On-Ramp to I-15 C/D Merge	C/D Line	2	1,422	1,422			102.0	7.3	B

† Speed and density not defined for over-capacity segment
‡ No HCM methodology for 1-lane segments. Volume is within capacity.
# No effective models of performance for major merge areas
* Exceeds LOS standards

Source: LSA Associates, Inc., January 2008.

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Table 2.20
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the PM Peak Hour

Segment	Type	PM PEAK HOUR							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound									
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	13,177				†	†	F*
Rancho California Rd Off-Ramp	2 Lane Off	4	13,177			1,152	88.0	20.3	F*
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	12,025				†	†	F*
Rancho California Rd Loop On-Ramp	1 Lane On	4	12,025		1,384		90.0	19.2	F*
Rancho California Rd Loop On-Ramp to Rancho California Rd Slip On-Ramp	Basic	4	13,409				†	†	F*
Rancho California Rd Slip On-Ramp	1 Lane On	4	13,409		1,370		88.0	20.6	F*
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	14,779				†	†	F*
Winchester Rd Off-Ramp	2 Lane Off	4	14,779			1,144	88.0	20.6	F*
Winchester Rd Off-Ramp to French Valley Pkwy Off-Ramp	Basic	4	13,635				†	†	F*
French Valley Pkwy Off-Ramp	1 Lane Off	4	13,635			796	89.4	36.9	F*
French Valley Pkwy Off-Ramp to Lane Addition-Ramp	Basic	4	12,839	2,005			†	†	F*
Lane Addition-Ramp to I-15/215 Split	Basic	5	12,839	4,053			†	†	F*
I-15/I-215 Split	Major Divergence	5	12,839			6,165			#
I-15 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B weave	5	8,782			618	88.7	20.8	D
Murrieta Hot Springs Rd Off-Ramp to Lane Drop	Basic	4	8,164				95.1	22.6	E*
Lane Drop to Murrieta Hot Springs Rd On-Ramp	Basic	3	8,164				†	†	F*
Murrieta Hot Springs Rd On-Ramp	1 Lane On	3	8,164		1,573			33.2	F*
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	9,737				†	†	F*

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Table 2.20
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the PM Peak Hour
(Continued)

Segment	Type	PM PEAK HOUR							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Northbound									
I-215 C/D Merge to Murrieta Hot Springs Rd Off-Ramp	Type B Weave	3	8,111				76.7	37.1	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	7,531				†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	7,531		227			40.5	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	7,758				†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	7,758		426			42.7	F*
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	8,184				†	†	F*
I-15 Southbound									
Kalmia St On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	7,917				†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	3	7,917			1,584	86.2	26.7	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	6,333				89.8	21.8	E*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	6,333		122		88.0	21.1	D
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	6,455				87.2	26.0	E*
Murrieta Hot Springs Rd Slip On-Ramp to I-15 C/D Off-Ramp	Type B Weave	4	6,455		729	2,577	74.4	22.8	E*
I-15 C/D Off-Ramp to I-215 Junction-Ramp	Basic	3	4,608				105.1	15.4	C
I-15/215 Junction-Ramp	Major Merge	3	4,608						
I-15/215 Junction-Ramp to Lane Drop	Basic	5	8,863	4,957			106.5	17.5	D
Lane Drop to I-215 C/D Merge	Basic	4	8,863	4,957			83.9	27.8	E*
I-215 C/D Merge	Major Merge	4	8,863	1,927					#
I-215 C/D Merge to Winchester Rd Slip On-Ramp	Basic	6	10,791				105.9	17.9	D
Winchester Rd Slip On-Ramp	1 Lane On	6	10,791		502		46.0	25.3	F*
Winchester Rd Slip On-Ramp to Lane Drop 1	Basic	6	11,292				103.4	19.2	D

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Table 2.20
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the PM Peak Hour
(Continued)

Segment	Type	PM PEAK HOUR							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Lane Drop 1 to Lane Drop 2	Basic	5	11,292				†	†	F*
Lane Drop 2 to Rancho California Rd Off-Ramp	Basic	4	11,292				†	†	F*
Rancho California Rd Off-Ramp	2 Lane Off	4	11,292			3,180	79.7	23.9	F*
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	8,113				95.7	22.3	E*
Rancho California Rd On-Ramp	1 Lane On	4	8,113		958		95.0	14.5	F*
Rancho California Rd On-Ramp to Old Town Front St Off-Ramp	Basic	4	9,070				†	†	F*
I-215 Southbound									
Los Alamos Rd On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	7,761				†	†	F*
Murrieta Hot Springs Rd Off-Ramp	1 Lane Off	2	7,761			1,330	87.0	26.4	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	6,431				†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	6,431		73			35.0	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	6,504				†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	6,504		132			35.0	F*
Murrieta Hot Springs Rd Slip On-Ramp to Lane Addition	Basic	2	6,636				†	†	F*
Lane Addition-Ramp to I-215 (C/D Split)	Basic	3	6,636				†	†	F*
I-215 C/D Split	2 lane off	3	6,636	2,380					#
I-215 C/D Split to I-15/215 Junction-Ramp	Basic	2	4,256	2,380			87.3	25.3	E*
CD Line 1 - I-15 Northbound									
Winchester Rd Loop On-Ramp	C/D Lane Addition	1			504		‡	‡	A
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	C/D Line	1	504	504			‡	‡	‡
Winchester Rd Slip On-Ramp	C/D Lane Addition	1	504	504	1,501		‡	‡	‡
Winchester Rd Slip On-Ramp to French Valley Pkwy Loop On-Ramp	C/D Line	2	2,005	2,005			103.0	10.3	B

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Table 2.20
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the PM Peak Hour
(Continued)

Segment	Type	PM PEAK HOUR							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	2	2,005	2,005	1,020		94.0	16.5	C
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	C/D Line	3	3,025	3,025			105.0	10.1	B
French Valley Pkwy Slip On-Ramp	1 Lane onto C/D Line	3	3,025	3,025	1,029		94.0	16.0	C
French Valley Pkwy Slip On-Ramp to I-15/I-215 C/D Split	C/D Line	3	4,053	4,053			105.0	14.0	C
I-15/I-215 C/D Split	C/D Divergence	3	4,053	4,053		2,107			#
I-15/I-215 C/D Split to I-15 C/D Merge	C/D Line	2	2,107	2,107			103.0	11.0	B
CD Line 1 – I-215 Northbound									
I-15/I-215 CD Split to C/D Lane Drop	C/D Line	2	1,946	1,946			103.0	10.0	B
CD Lane Drop to I-215 C/D Merge	C/D Line	1	1,946	1,946			103.0	10.0	B
CD Line 1 – Southbound									
I-15 C/D Off-Ramp to I-15/I-215 C/D Merge	C/D Line	2	2,577	2,577			103.0	13.2	C
I-215 C/D Split to I-15/215 C/D Merge	Basic	2	2,380	2,380			12.0	102.7	C
I-15/I-215 C/D Merge to Lane Drop	C/D Line	4	4,957	4,957			108.0	12.1	C
C/D Lane Drop to French Valley Pkwy Off-Ramp	C/D Line	3	4,957	4,957			105.0	17.0	D
French Valley Pkwy Off-Ramp	2 Lane Off	3	4,957	4,957		2,253	84.0	13.8	C
French Valley Pkwy Off-Ramp to Winchester Rd Off-Ramp	C/D Line	2	2,704	2,704			103.0	14.0	C
CD Line 2 – Southbound									
French Valley Pkwy Loop On-Ramp	C/D Lane Addition	1			718		‡	‡	‡
French Valley Pkwy Loop On-Ramp to French Valley Pkwy Slip On-Ramp	C/D Line	1	718	718			‡	‡	‡
French Valley Pkwy Slip On-Ramp	C/D Lane Addition	1	718	718	222		‡	‡	‡
French Valley Pkwy Slip On-Ramp to Lane Drop	C/D Line	2	940	940			102.7	4.8	A

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Table 2.20
Year 2030 Proposed Project Freeway Volumes and Levels of Service in the PM Peak Hour
(Continued)

Segment	Type	PM PEAK HOUR							
		Mainline Lanes	Mainline Volume	C/D Line Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Winchester Rd Off-Ramp	2 C/D Lane Drop	2	2,704	2,704		2,704	81.7	9.5	B
Lane Drop to Winchester Rd Loop On-Ramp	C/D Line	1	940	940			‡	‡	‡
Winchester Rd Loop On-Ramp	C/D Lane Addition	2	940	940	988		96.0	11.0	B
Winchester Rd Loop On-Ramp to I-15 C/D Merge	C/D Line	2	1,927	1,927			102.7	9.9	B

† Speed and density not defined for over-capacity segment
‡ No HCM methodology for 1-lane segments. Volume is within capacity
# No effective models of performance for major merge areas
* Exceeds LOS standards

Source: LSA Associates, Inc., January 2008.

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Table 2.21
Year 2030 No Action Alternative Freeway Volumes and Levels of Service in the AM Peak Hour

Segment	Type	Mainline Lanes	AM PEAK HOUR					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound								
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	6,292			107.2	15.4	C
Rancho California Rd Off-Ramp	2 Lane Off	4	6,292		1,287	87.4	11.4	B
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	5,004			107.6	12.2	C
Rancho California Rd Loop On-Ramp	1 Lane On	4	5,004	762		96.0	11.8	B
Ranch California Rd Loop On-Ramp to Ranch California Rd Slip On-Ramp	Basic	4	5,767			107.6	14.1	C
Rancho California Rd Slip On-Ramp	1 Lane On	4	5,767	1,904		95.0	14.0	C
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	7,670			100.5	20.1	D
Winchester Rd Off-Ramp	2 Lane Off	4	7,670		1,652	85.9	12.4	C
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	6,018			107.5	14.7	C
Winchester Rd Loop On-Ramp	1 Lane On	4	6,018	612		96.0	12.6	C
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	6,631			106.5	16.4	D
Winchester Rd Slip On-Ramp	2 Lane On	4	6,631	1,801		96.0	13.3	C
Winchester Rd Slip On-Ramp to Lane Addition	Basic	4	8,432			107.6	13.3	C
Lane Addition 1 to Lane Addition 2	Basic	5	8,432			108.2	16.4	D
Lane Addition 2 On-Ramp to I-15/215 Split	Basic	6	8,432			110.0	13.4	C
I-15/I-215 Split	Major Diverge	6	8,432		4,049			#
I-15/215 Split to Lane Drop	Basic	4	4,383			107.6	10.7	B
Lane Drop to Murrieta Hot Springs Rd Off-Ramp	Basic	3	4,383			105.2	14.6	C
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	3	4,383		442	90.9	6.8	B
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	3,942			105.2	13.1	C
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	3,942	258		95.0	14.8	C
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	4,200			105.2	14.0	C
Murrieta Hot Slip Springs Rd On-Ramp	1 Lane On	3	4,200	1,208		19.6	90.0	D
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	5,407			102.2	18.6	D

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Table 2.21
Year 2030 No Action Alternative Freeway Volumes and Levels of Service in the AM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	AM PEAK HOUR					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Northbound								
I-15/215 Split to Murrieta Hot Springs Rd Off-Ramp	Basic	2	4,049			92.9	22.9	E*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	2	4,049		269	91.6	17.0	C
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	3,780			98.1	20.3	D
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	3,780	271		86.0	21.8	D
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	4,051			92.9	23.0	E*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	4,051	990		64.0	26.7	F*
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	5,041			†	†	F*
I-15 Southbound								
Kalmia Street On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	7,798			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	3	7,798		1,483	86.6	18.5	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	6,315			90.1	24.6	E*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	6,315	33		71.0	26.0	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	6,348			89.5	24.9	E*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	3	6,348	331		85.0	22.2	E*
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction-Ramp	Basic	3	6,679				†	F*
I15/I215 Junction-Ramp	Major Merge	3	6,679					#
I-15/215 Junction. to Winchester Road Off-Ramp	Basic	5	12,848			†	†	F*
Winchester Rd Off-Ramp	2 Lane Off	4	12,848		3,332	79.1	26.8	F*
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	9,517			†	†	F*
Winchester Rd Loop On-Ramp	1 Lane On	4	9,517	1,177		92.0	18.1	F*
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	10,694			†	†	F*
Winchester Rd Slip On-Ramp	1 Lane On	4	10,694	143		88.0	20.9	F*
Winchester Rd Slip On-Ramp to Rancho California Rd Off-Ramp	Basic	4	10,837			†	†	F*
Rancho California Rd Off-Ramp	2 Lane off	4	10,837		2,758	81.4	21.5	F*
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	8,079			96.1	22.1	E*
Rancho California Rd On-Ramp	1 Lane On	4	8,079	674		95.0	14.6	C

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Table 2.21
Year 2030 No Action Alternative Freeway Volumes and Levels of Service in the AM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	AM PEAK HOUR					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Rancho California Rd On-Ramp to Old Town Front St Off-Ramp	Basic	4	8,752			86.0	26.8	E*
I-215 Southbound								
Los Alamos Rd On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	6,890			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	2	6,890		1,129	88.1	32.8	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	5,761			†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	5,761	343			32.7	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip	Basic	2	6,104			†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	6,104	65			32.6	F*
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction	Basic	2	6,169			†	†	F*

† Speed and density not defined for over-capacity segment
# No effective models of performance for major merge areas
* Exceeds LOS standards

Source: LSA Associates, Inc., January 2008.

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Table 2.22
Year 2030 No Action Alternative Freeway Volumes and Levels of Service in the PM Peak Hour

Segment	Type	Mainline Lanes	PM PEAK HOUR					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-15 Northbound								
Old Town Front St On-Ramp to Rancho California Rd Off-Ramp	Basic	4	13,400			†	†	F*
Rancho California Rd Off-Ramp	2 Lane Off	4	13,400		1,126	88.1	20.8	F*
Rancho California Rd Off-Ramp to Rancho California Rd Loop On-Ramp	Basic	4	12,274			†	†	F*
Rancho California Rd Loop On-Ramp	1 Lane On	4	12,274	1,488		91.0	19.1	F*
Ranch California Loop On-Ramp to Ranch California Rd Slip On-Ramp	Basic	4	13,762			†	†	F*
Rancho California Rd Slip On-Ramp	1 Lane On	4	13,762	1,384		88.0	20.8	F*
Rancho California Rd Slip On-Ramp to Winchester Rd Off-Ramp	Basic	4	15,146			†	†	F*
Winchester Rd Off-Ramp	2 Lane Off	4	15,146		1,656	85.9	23.2	F*
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	13,490			†	†	F*
Winchester Rd Loop On-Ramp	1 Lane On	4	13,490	807		87.0	21.6	F*
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	14,297			†	†	F*
Winchester Rd Slip On-Ramp	2 Lane On	4	14,297	2,093		66.0	22.8	F*
Winchester Rd Slip On-Ramp to Lane Addition	Basic	4	16,390			†	†	F*
Lane Addition 1 to Lane Addition 2	Basic	5	16,390			†	†	F*
Lane Addition 2 On-Ramp to I-15/215 Split	Basic	6	16,390			†	†	F*
I-15/I-215 Split	Major Diverge	6	16,390		7,869			
I-15/215 Split to Lane Drop	Basic	4	8,520			88.9	24.9	E*
Lane Drop to Murrieta Hot Springs Rd Off-Ramp	Basic	3	8,520			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	3	8,520		591	90.3	17.6	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	7,929			†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	7,929	610		90.2	25.1	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	8,539			†	†	F*
Murrieta Hot Slip Springs Rd On-Ramp	1 Lane On	3	8,539	1,034		88.5	25.5	F*
Murrieta Hot Springs Rd On-Ramp to California Oaks Rd Off-Ramp	Basic	3	9,574			†	†	F*

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Table 2.22
Year 2030 No Action Alternative Freeway Volumes and Levels of Service in the PM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	PM PEAK HOUR					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
I-215 Northbound								
I-15/215 Split to Murrieta Hot Springs Rd Off-Ramp	Basic	2	7,869			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	2	7,869		674	89.9	38.3	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	7,196			†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	7,196	254			38.9	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	2	7,450			†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	7,450	552			41.8	F*
Murrieta Hot Springs Rd On-Ramp to Los Alamos Rd Off-Ramp	Basic	2	8,002			†	†	F*
I-15 Southbound								
Kalmia St On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	3	7,937			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	3	7,937		1,781	85.4	19.8	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	3	6,156			93.1	23.2	E*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	3	6,156	127		64.0	27.1	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip On-Ramp	Basic	3	6,283			90.7	24.3	E*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	3	6,283	680		81.0	23.7	F*
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction-Ramp	Basic	3	6,963			†	†	F*
I15/I215 Junction-Ramp	Major Merge	3	6,963					
I-15/215 Junction to Winchester Rd Off-Ramp	Basic	5	13,394			†	†	F*
Winchester Rd Off-Ramp	2 Lane Off	4	13,394		3,727	77.5	29.2	F*
Winchester Rd Off-Ramp to Winchester Rd Loop On-Ramp	Basic	4	9,667			†	†	F*
Winchester Rd Loop On-Ramp	1 Lane On	4	9,667	1,333		92.0	18.0	F*
Winchester Rd Loop On-Ramp to Winchester Rd Slip On-Ramp	Basic	4	11,001			†	†	F*
Winchester Rd Slip On-Ramp	1 Lane On	4	11,001	621		89.0	20.2	F*
Winchester Rd Slip On-Ramp to Rancho California Rd Off-Ramp	Basic	4	11,622			†	†	F*
Rancho California Rd Off-Ramp	2 Lane off	4	11,622		3,145	79.9	24.3	F*
Rancho California Rd Off-Ramp to Rancho California Rd On-Ramp	Basic	4	8,476			90.6	24.6	E*
Rancho California Rd On-Ramp	1Lane On	4	8,476	1,062		95.0	14.8	F*

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Table 2.22
Year 2030 No Action Alternative Freeway Volumes and Levels of Service in the PM Peak Hour
(Continued)

Segment	Type	Mainline Lanes	PM PEAK HOUR					
			Mainline Volume	Entering Volume	Exiting Volume	Speed (km/hr)	Density (pc/km/ln)	LOS
Rancho California Rd On-Ramp to Old Town Front St Off-Ramp	Basic	4	9,539			†	†	F*
I-215 Southbound								
Los Alamos Rd On-Ramp to Murrieta Hot Springs Rd Off-Ramp	Basic	2	7,454			†	†	F*
Murrieta Hot Springs Rd Off-Ramp	2 Lane Off	2	7,454		1,245	87.6	27.8	F*
Murrieta Hot Springs Rd Off-Ramp to Murrieta Hot Springs Rd Loop On-Ramp	Basic	2	6,209			†	†	F*
Murrieta Hot Springs Rd Loop On-Ramp	1 Lane On	2	6,209	77			33.7	F*
Murrieta Hot Springs Rd Loop On-Ramp to Murrieta Hot Springs Rd Slip	Basic	2	6,286			†	†	F*
Murrieta Hot Springs Rd Slip On-Ramp	1 Lane On	2	6,286	145			33.9	F*
Murrieta Hot Springs Rd Slip On-Ramp to I-15/215 Junction	Basic	2	6,431			†	†	F*

† Speed and density not defined for over-capacity segment
# No effective models of performance for major merge areas
* Exceeds LOS standards

Source: LSA Associates, Inc., January 2008.

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Table 2.23 provides a summary comparison of the number of locations that would operate at a deficient level of service in the AM and PM peak hour with the proposed project and the No Action Alternative.

Table 2.23
Comparison of Proposed Project and No Action Alternative

Time of Day and Roadway Segment	Number of Deficiencies	
	Proposed Project	No Action Alternative
Arterial Intersections 2012		
AM	0	2
PM	5	5
Freeway Ramps 2012		
AM	9	8
PM	23	31
Arterial Intersections 2030		
AM	5	6
PM	8	10
Freeway Ramps 2030		
AM	22	28
PM	44	55

Construction Impacts

As indicated in the project description, construction activities would be staged and would potentially require one or two brief, overnight freeway closures when falsework is constructed and removed. There are two construction detour scenarios. The first concept is that the collector/distributor (C/D) roadways would be constructed first. Traffic would continue to use the mainline facility when the falsework is erected and removed over the C/D roadways. Traffic would then be diverted to the C/D roadways and the mainline would be closed while erecting and removing the falsework over the mainline facility.

Should this approach not be feasible, the second detour concept would be to force the closure of the freeway at Murrieta Hot Springs Road, direct the traffic to Jefferson Avenue then allow traffic to access the freeway at Winchester Road. This area is primarily composed of commercial and light industrial uses, with scattered residential uses. Thus, noise impacts to residential areas would be minimal. Given the late night hours and short duration of the closures (only during the construction and removal of falsework), no improvements would be required to any of the facilities to accommodate the traffic using the detour. Consistent with the Department's requirements, a Detour Plan would be developed and adequate signage provided.

As with all construction work on the freeway, it is expected that traffic would slow due to the distraction factor of ongoing work. However, the ability to separate the work on the C/D system would reduce this potential impact. Implementation of a Traffic Management Plan (TMP) would further minimize the disruption that could occur during construction. The TMP would adhere to all Department specifications.

Avoidance, Minimization, and/or Mitigation Measures

The following is a standard provision that would be applicable to all projects requiring detouring or redirection of traffic.

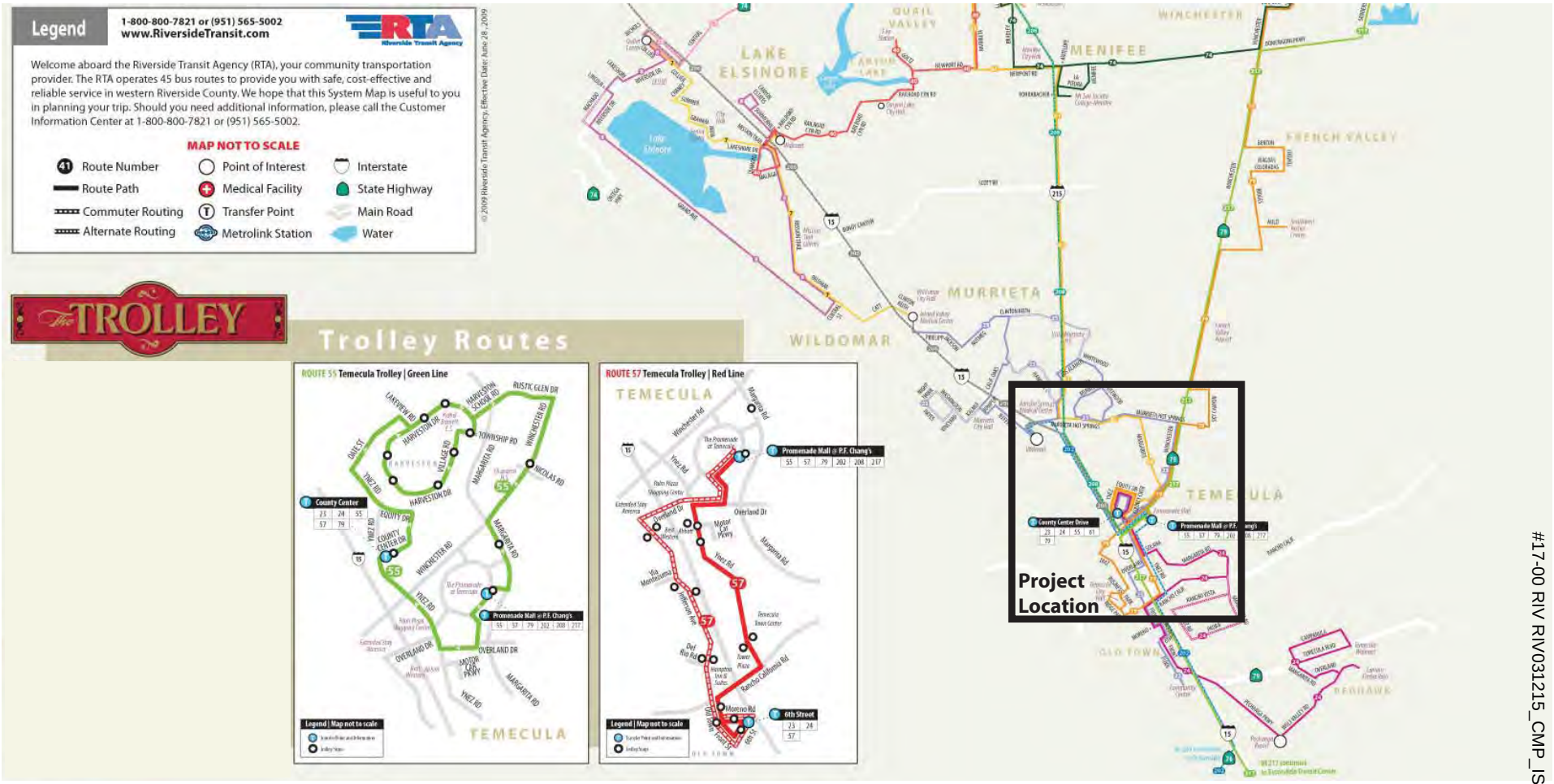
T-1 During the Final Design Phase, a Traffic Management Plan shall be developed to reduce potential delays and conflicts associated with construction activities. The Traffic Management Plan shall be approved by the Manager of the Department's Traffic Operations. The plan shall identify construction phasing and the associated Detour Plan and Signage Program to alert the public of ongoing construction activities.

Transit Facilities

The City of Temecula's General Plan Circulation Element provides goals and policies designed to reduce traffic congestion and to improve safety on roadways. These goals and policies encourage the development of alternative modes of transportation and better access to regional travel routes. The policies and programs in this Element emphasize maintenance of a balanced, multi-modal transportation system that responds to the demands of current and planned land uses, as set forth in the Land Use Element. The Element also addresses the high levels of pass-through traffic associated with development in surrounding areas that accesses I-15 through the city of Temecula.

The Riverside Transit Agency (RTA) is the transit provider that serves the project study area (www.riversidetransit.com). When determining transit routes, the transit agency takes into consideration multiple factors including locations of key attractions, such as shopping and employment centers. Multiple routes travel adjacent to or within the proposed project area. A bus transfer station is located on County Center Drive in the vicinity of Ynez Road. In addition to scheduled routes, the project study area is served by Dial-A-Ride and Greyhound Bus Service. These RTA-scheduled routes are depicted in Figure 2-8 and are indicated below:

- ***Route 23:*** This route serves Temecula, Murrieta, and Wildomar. Within the project study area, this route travels along Ynez Road in proximity to the proposed French Valley Parkway interchange and along Jefferson Avenue, south of Winchester Road (State Route [SR] 79).
- ***Route 24:*** This route serves the Temecula/Pechanga Resort and Vail Ranch. Within the project study area, this route travels along Ynez Road near the proposed French Valley Parkway interchange. Most of this route serves portions of Temecula south of the project study area.
- ***Route 55 Temecula Trolley/Green Line:*** This route serves the the Harveston development and provides connection to the Promenade Mall, located south of Winchester Road. This route travels along Ynez Road and Date Street (the extension of French Valley Parkway east of the project limits).
- ***Route 57 Temecula Trolley/Red Line:*** This route is predominately south of the project study area. It initiates at the Promenade Mall and provides a loop south to Ranch California Road.



Riverside Transit Agency System Map

Figure 2-8

French Valley Parkway Improvements Project

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R:/Projects/Moffatt/J024/Graphics/IS-ESA/Ex2-8_RTA_MAP.pdf

- ***Route 61:*** This route predominately serves the communities of Sun City and Menifee located north of the project study area. However, it does utilize Interstate 215 to provide a connection to Murrieta and Temecula ending at the transfer station on County Center Drive.
- ***Route 79:*** This route provides a connection between the cities of Hemet and Temecula via SR-79. This route does provide a loop along Ynez Road in the study area and continues south to Rancho California Road, south of the project study area.
- ***Route 202:*** This route serves to connect the cities of Murrieta and Temecula with the Oceanside Transit Center in San Diego County via the I-15 and SR-76. The route does not stop in the study area, but a stop is provided at the Promenade Mall south of Winchester Road.
- ***Route 206:*** This route provides a connection between the Metrolink Station in the city of Corona and the cities of Murrieta and Temecula via I-15. Stops are provided on Madison Avenue, south of Murrieta Hot Springs Road, and at the Promenade Mall.
- ***Route 208:*** This route provides a connection between the Metrolink Station in the city of Riverside and the cities of Perris, Murrieta, and Temecula via I-215. The route ends at Promenade Mall.
- ***Route 217:*** This route serves San Jacinto, Hemet, Temecula, and Escondido via SR-79. Stops are provided at Harveston Park and Promenade Mall.

Public bus service was first offered in the city of Temecula in 1991 when RTA established a local transit route within the city and initiated a pilot program providing commuter service between Temecula and Corona with stops in Murrieta and Lake Elsinore. The Temecula General Plan clearly identifies the City's commitment to working with RTA to enhance public transportation usage. All new mixed-use development proposals are reviewed to ensure transit accessibility as part of project design. The City has encouraged transit use through developing nine park-and-ride lots and maximizing opportunities for joint-use of existing parking facilities.

These policies have been effective in expanding transit use in the area. Transit ridership has increased as the Temecula Valley area has developed. In 2007, the Riverside Transit Agency added four buses to Routes 23 and 24. Those two routes enjoyed a 16 percent growth that year (Riverside Transit Agency, *2007 Annual Report*). The CommuterLink bus service, which also serves the Temecula Valley, handled 95 percent more boardings than the previous year (Riverside Transit Agency, *2008 Annual Report*). The regional circulation model assumes a transit component as part of the long-range traffic projections.

Transit operations help to support the City of Temecula's Trip Reduction Ordinance, which mandates the provision of carpool, bicycle, rideshare, vanpool, transit, child care, transportation system management, and/or telecommuting facilities for both new and current development projects within the city where 100 or more persons are employed (City of Temecula General Plan, 2005). On a policy level, the City supports vanpool programs by

providing links to CommuteSmart.info for new vanpools. The park-and-ride facilities throughout the city also facilitate these efforts.

Transit growth in the region is expected to continue to expand. The RTA has adopted a *Comprehensive Operations Analysis* that contemplates future bus routing with a ten-year horizon. Though this analysis reflects the long-term plan for the Agency, the operation of transit routes is based on available funding. Thus, even proposed transit routes may not ultimately become operational due to funding constraints or changes in demand.

Based on current information, no existing or proposed transit routes would be impacted by the completion of the French Valley Parkway Improvements Project. It is likely that transit routes could actually benefit from improved vehicle circulation resulting from the Project construction. In addition, the construction of French Valley Parkway would provide an additional continuous east-west route that offers a suitable travel way for additional local bus routes. The project would connect Cherry Street (located west of Jefferson Avenue), cross I-15, and connect to Date Street (located east of Ynez Road). Ultimately, the roadway is planned to extend to Murrieta Hot Springs Road. Having an additional east-west route would benefit transit planning efforts.

Other planned transit-oriented improvements for the area include the Temecula Multi-modal Transit Center and the California High Speed Rail. Both these projects are in the planning stages. Though within the general vicinity of the proposed project, neither would have direct impacts from the proposed project. The anticipated locations of these facilities have been depicted on Figure 2-1.

The Multi-Modal Transit Center is proposed on the southwest side of Jefferson Avenue at Sanborn Avenue. Funding for the Center will be a combination of federal funding and local funding, including funds from RTA revenue streams. The Transit Center, which is expected to be completed by 2012, will be a mixed-use, transit oriented development, providing shared parking and connectivity with adjacent uses.

Though the future Multi-Modal Center would be in close proximity to the French Valley Parkway Interchange, it would be sufficiently outside the impact area so that no direct impacts are anticipated. Improvements along Jefferson Avenue, south of French Valley Parkway, are expected to be minimal and would include a potential right-turn lane from northbound Jefferson Avenue to eastbound French Valley Parkway. Any modifications as far south as Sanborn Avenue would involve only roadway striping.

In 2005, the California High-Speed Rail Authority completed a Tier 1 environmental review for the High Speed Train System. With this document, a statewide High-Speed Train System was approved for intercity travel between major metropolitan areas. The Murrieta/Temecula area has been identified as the location of a future station for the High Speed Train. The alignment for the High Speed Rail has not been finalized; however, the California High-Speed Rail Authority and the Federal Railroad Authority identified the I-15/I-215 corridor as the anticipated location of the Los Angeles

to San Diego segment. A station is tentatively identified in the city of Temecula in the vicinity of Jefferson Avenue and Sanborn Avenue, across from the Temecula Multi-Modal Transit Center. Based on information from the California High Speed Rail Authority website (www.cahighspeedrail.ca.gov), the preliminary engineering and project-level environmental document will be initiated in 2009. Based on information from the California High Speed Rail Authority website (www.cahighspeedrail.ca.gov), the preliminary engineering and project-level environmental document has been initiated for this segment of the High Speed Rail System. The review period for the Notice of Preparation, which solicits input on the scope of the environmental document, ended on November 20, 2009, and the environmental document is expected to be completed in 2013. The segment of the High Speed Rail that would serve this area is not identified as part of the first phase of the system and funding for its construction is not programmed (i.e., funds have not been allocated).

Bicycles and Pedestrians

The City of Temecula would have jurisdiction over the designation of bikeways and pedestrian paths along French Valley Parkway and Winchester Road, the local arterials with direct interface with the proposed project. Policies in both the Circulation Element and the Open Space/Conservation Element of the City of Temecula General Plan include measures to increase the use of alternative modes of transportation by improving its bikeway and trail system.

The City has placed a high priority on the development of trails that provide loops wherever possible and follow creeks and utility easements where feasible. In an effort to provide connectivity with County bikeways, the City's General Plan reflects the Class I bike paths designated on the County of Riverside General Plan along Murrieta and Temecula Creeks.

The City's Circulation Plan is designed to promote the use of alternative modes such as transit, bicycling, and walking. The benefits cited in the General Plan for increasing use of alternative modes include "reduced traffic, less need for costly roadway improvement projects, and improved air quality. Facilities constructed for biking or walking provide important recreational opportunities as well. Crossings of Interstate 15 that do not include on- or off-ramps should incorporate additional bikeway and pedestrian facilities." The concern associated with the placement of bikeways on roadways with on- or off-ramps is the increased potential conflict of vehicles and bicyclists.

In addition to the General Plan, the City of Temecula has developed a Multi-Use Trails and Bicycles Master Plan. The Temecula Multi-Use Trails and Bikeways Master Plan is a separate document from the General Plan that provides a number of options to implement the general policy direction established by the General Plan. Key aspects of the adopted Master Plan are incorporated within the Circulation and Open Space/Conservation Elements of the General Plan. However, due to changes to the standard roadway cross-sections, the location and feasibility of providing future bike lanes may need to be re-evaluated.

There are no designated bikeways or sidewalks that cross I-15 at the Winchester Road Interchange. As the portion of the French Valley Parkway in the project area

has yet to be constructed, transport over the I-15 is also not currently available to pedestrian or bicycle traffic. A multi-purpose off-road trail, which crosses the I-15, is designated north of Winchester Road, in the vicinity of Santa Gertrudis Creek. Additionally, the Murrieta Creek Trail, a pedestrian/bicycle trail with possible pedestrian crossings and other amenities is located along Murrieta Creek. This trail runs parallel to I-15, approximately 5 km (3.1 mi) west of the I-15.

Build Alternative "Proposed Project" (Preferred Alternative)

As the proposed project includes on- and off-ramps at the I-15/French Valley Parkway Interchange, the City of Temecula policy would be not to construct bicycle lanes on this facility. By encouraging bicyclists to use routes without on- and off-ramps, potential conflict with vehicle turning movements and bicyclists are minimized. However, the French Valley Parkway overpass does provide for shoulders that could be used by bicyclists and sidewalks on both sides that would facilitate safe passage over the I-15 for bicyclists and pedestrians.

In all locations where the improvements interface with pedestrian facilities, the proposed project would be in compliance with Americans with Disabilities Act (ADA) requirements, and design standards would be met. This would allow wheelchairs to be accommodated on the sidewalks on French Valley Parkway.

No Action Alternative

Under the No Action Alternative, without the French Valley Parkway overcrossing, the lack of movement of pedestrian and bicycle traffic over I-15 would remain.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

Visual Resources

Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 U.S.C. 4331[b][2]). To further emphasize this point, the Federal Highway administration in its implementation of NEPA (23 U.S.C. 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities." (CA Public Resources Code Section 21001[b])

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Congested Management Process – Overriding Statement

Project RIV151001

Project Description:

IN EASTERN RIVERSIDE COUNTY FOR THE CITY OF INDIO - RECONSTRUCT AND IMPROVE HIGHWAY 111 FROM 760 FT WEST OF MADISON ST TO RUBIDOUX ST INCLUDING UPDATING ALL TRAFFIC SIGNALS AND UPDATE ALL SIDEWALKS, RAMPS AND DRIVEWAYS TO CURRENT ADA STANDARDS. WIDEN OF HIGHWAY 111 FROM 4 LANES (2 IN EACH DIR) TO 6 LANES (3 IN EACH DIR).

Riverside County Transportation Commission

4080 Lemon Street, 3rd Floor • Riverside, CA
Mailing Address: P. O. Box 12008 • Riverside, CA 92502-2208
(951) 787-7141 • Fax (951) 787-7920 • www.rctc.org

June 6, 2016

Maria Lopez
Federal Transportation Improvement Program Manager
Southern California Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 130017

Subject: 2017 Federal Transportation Improvement Program (FY 2016/2017–2021/2022)
Congestion Management Plan - Statement of Overriding Consideration for RIV151001

Dear Ms. Lopez:

RIV151001 is a local highway widening project included in the 2017 Federal Transportation Improvement Program (FTIP) for the City of Indio in the Coachella Valley. Through the review of the 2017 FTIP, RIV151001 was identified as a Congestion Management Plan (CMP) project because it increases road capacity and is one mile in length. As required by federal law, any project one mile or greater in length utilizing federal funds is required to include CMP elements. According to the City of Indio's approved Preliminary Environmental Study (PES) and its FY 15/16 Senate Bill 821 (SB821) application to RCTC, RIV151001 satisfies the CMP due to the following elements:

- Adds missing sidewalk segments within project limits;
- Updates all ADA ramps to current standards;
- Improves access to transit; and
- Improves traffic flow for vehicles and transit buses within project limits.

Based on the elements provided, RIV151001 satisfies all CMP requirements for the project.

Please feel free to contact me if you have any questions.

Sincerely,

Grace Alvarez
Planning and Programming Manager

cc: Shirley Medina, RCTC Planning and Programming Director

Congested Management Process – Overriding Statement

Project RIV151216

Project Description:

IN WESTERN RIVERSIDE COUNTY IN THE CITY OF RIVERSIDE - WIDENING OF MAGNOLIA AVENUE WITHIN EXISTING R/W FROM 4 TO 6 LANES (2 EA DIR TO 3 EA DIR) FROM BUCHANAN ST TO BANBURY DRIVE.

Widening of Magnolia will be accomplished utilizing existing median - bicycle and pedestrian facilities are already in place. Magnolia Traffic Signal interconnect is being implemented under RIV151205

3.33 Magnolia Avenue Traffic Signal Technology Upgrade

Implementing Agency: City of Riverside

Project Description: This project will upgrade the traffic signal coordination technology along Magnolia Avenue from Buchanan to Third Street by removing existing interconnect copper wires and replacing them with fiber optic interconnects.

Air Quality Analysis:

ROG Emission Benefits (kg/day)	CO Emission Benefits (kg/day)	NO_x Emission Benefits (kg/day)	PM_{10} Emission Benefits (kg/day)	$PM_{2.5}$ Emission Benefits (kg/day)	CO_2E Emission Benefits (kg/day)
4.357	34.927	5.498	0.168	0.155	4,513.52

Benefit Cost Analysis Results:

The applicant provided a detailed Benefit Cost assessment that quantified the benefit ratio as **11.5:1**. There is not enough raw data in the application to replicate this value; however, it appears reasonable relative to similar projects in this category.

Congested Management Process – Preliminary Environmental Study

Project RIV151217

Project Description:

IN EASTERN RIVERSIDE COUNTY IN THE CITY OF COACHELLA - WIDENING OF AVENUE 48 FROM 2 TO 6 LANES (1 LN EA DIR TO 3 LNS EA DIR) FROM JACKSON RD TO VAN BUREN ST INCLUDING TRAFFIC SIGNAL MODIFICATIONS, STREET LIGHTING, DRAINAGE IMPROVEMENTS INCLUDING SIDEWALK AND BICYCLE LANES AND LANDSCAPING

EXHIBIT 6-A PRELIMINARY ENVIRONMENTAL STUDY (PES)

Federal Project No.: RSTPL – 5294 (014)
(Federal Program Prefix-Project No., Agreement No.)

Final Design: TBD
(Expected Start Date)

To: Sean Yeung
(District Local Assistance Engineer)
District 8
(District)
464 W. 4th Street 7th floor, San Bernardino, CA
(Address)
sean.yeung@dot.ca.gov
(Email Address)

From: City of Coachella
(Local Agency)
Oscar Espinoza, P.E.
(Project Manager's Name and Telephone No.)
1515 Sixth St., Coachella, Ca 92236
(Address)
oespinoza@coachella.org
(Email Address)

Is this Project "ON" the State Highway System? ☐ Yes ☒ No

IF YES, STOP HERE and contact the District Local Assistance Engineer regarding the completion of other environmental documentation.

Federal State Transportation Improvement Program (FSTIP) http://www.dot.ca.gov/hq/transprog/fedpgm.htm: 2013 *(Currently Adopted Plan Date)* 17 *(Page No._3/30_ attach to this form)*

Programming for FSTIP:

Preliminary Engineering		Right of Way		Construction	
2013/2014 *(Fiscal Year)*	$ $95,000 *(Dollars)*	N/A *(Fiscal Year)*	$ 0 *(Dollars)*	2015/2016 *(Fiscal Year)*	$ 3,505,000 *(Dollars)*

Project Description as Shown in RTP and FSTIP: In Eastern Riverside County in the City of Coachella-Widening of Avenue 48 from 2 to 6 lanes from Jackson to Van Buren St. including Traffic Signal Modification and offsite improvmts

Detailed Project Description: *(Describe the following, as applicable: purpose and need, project location and limits, required right of way acquisition, proposed facilities, staging areas, disposal and borrow sites, construction activities, and construction access.)*

In Eastern Riverside County in the City of Coachella-Widening of Avenue 48 from 2 to 6 lanes (1 LN EA DIR to 3 LNS EA DIR) from Jackson Rd to Van Buren Street, including traffic signal modifications, street lighting, drainage (cont.)

(Continue description on "Notes" sheet, last page of this Exhibit, if necessary)

Preliminary Design Information:

Does the project involve any of the following? Please check the appropriate boxes and delineate on an attached map, plan, or layout including any additional pertinent information.

Yes	No		Yes	No		Yes	No	
☒	☐	Widen existing roadway	☒	☐	Ground disturbance	☐	☒	Easements
☒	☐	Increase number of through lanes	☒	☐	Road cut/fill	☐	☒	Equipment staging
☐	☒	New alignment	☒	☐	Excavation: anticipated maximum depth 24 inches	☐	☒	Temporary access road/detour
☒	☐	Capacity increasing—other (e.g., channelization)				☐	☒	Utility relocation
						☐	☒	Right of way acquisition (if yes, attach map with APN)
			☐	☒	Drainage/culverts			
☐	☒	Realignment	☐	☒	Flooding protection			
☐	☒	Ramp or street closure	☐	☒	Stream channel work	☐	☒	Disposal/borrow sites
☐	☒	Bridge work						
			☐	☒	Pile driving	☐	☒	Part of larger adjacent project
☐	☒	Vegetation removal						
☐	☒	Tree removal	☐	☒	Demolition	☐	☒	Railroad

Required Attachments:

☒ Regional map ☒ Project location map ☒ Project footprint map (existing/proposed right of way)
☐ Engineering drawings (existing and proposed cross sections), if available ☐ Borrow/disposal site location map, if applicable
(Note: all maps (except project location map and regional maps) should be consistent with the project description (minimum scale: 1" = 200').)

☒ Notes to support the conclusions of this checklist/project description continuation page (attached)

Notes:

continue from front page: drainage improvements including sidewalk and bicycle lanes and landscaping.

Examine the project for potential effects on the environment, direct or indirect and answer the following questions. The "construction area," as specified below, includes all areas of ground disturbance associated with the project, including staging and stockpiling areas and temporary access roads.

Each answer must be briefly documented on the "Notes" pages at the end of the PES Form.

A. Potential Environmental Effects	Yes	To Be Determined	No
General			
1. Will the project require future construction to fully utilize the design capabilities included in the proposed project?	☐	☐	☒
2. Will the project generate public controversy?	☐	☐	☒
Noise			
3. Is the project a Type I project as defined in 23 CFR 772.5(h); "construction on new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes"?	☒	☐	☐
4. Does the project have the potential for adverse construction-related noise impact (such as related to pile driving)?	☐	☐	☒
Air Quality			
5. Is the project in a NAAQS non-attainment or maintenance area?	☒	☐	☐
6. Is the project exempt from the requirement that a conformity determination be made? (If "Yes," state which conformity exemption in 40 CFR 93.126, Table 2 applies): Other-Transportation	☒	☐	☐
7. Is the project exempt from regional conformity? (If "Yes," state which conformity exemption in 40 CFR 93.127, Table 3 applies): _____	☐	☐	☐
8. If project is not exempt from regional conformity, (If "No" on Question #7)			
Is project in a metropolitan non-attainment/maintenance area?	☐	☐	☐
Is project in an isolated rural non-attainment area?	☐	☐	☐
Is project in a CO, PM10 and/or PM2.5 non-attainment/maintenance area?	☐	☐	☐
Hazardous Materials/Hazardous Waste			
9. Is there potential for hazardous materials (including underground or aboveground tanks, etc.) or hazardous waste (including oil/water separators, waste oil, asbestos-containing material, lead-based paint, ADL, etc.) within or immediately adjacent to the construction area?	☐	☐	☒
Water Quality/Resources			
10. Does the project have the potential to impact water resources (rivers, streams, bays, inlets, lakes, drainage sloughs) within or immediately adjacent to the project area?	☐	☐	☒
11. Is the project within a designated sole-source aquifer?	☐	☐	☒
Coastal Zone			
12. Is the project within the State Coastal Zone, San Francisco Bay, or Suisun Marsh?	☐	☐	☒
Floodplain			
13. Is the construction area located within a regulatory floodway or within the base floodplain (100-year) elevation of a watercourse or lake?	☐	☐	☒
Wild and Scenic Rivers			
14. Is the project within or immediately adjacent to a Wild and Scenic River System?	☐	☐	☒
Biological Resources			
15. Is there a potential for federally listed threatened or endangered species, or their critical habitat or essential fish habitat to occur within or adjacent to the construction area?	☐	☐	☒
16. Does the project have the potential to directly or indirectly affect migratory birds, or their nests or eggs (such as vegetation removal, box culvert replacement/repair, bridge work, etc.)?	☐	☐	☒
17. Is there a potential for wetlands to occur within or adjacent to the construction area?	☐	☐	☒

18. Is there a potential for agricultural wetlands to occur within or adjacent to the construction area?	☐	☐	☒
19. Is there a potential for the introduction or spread of invasive plant species?	☐	☐	☒
Sections 4(f) and 6(f)			
20. Are there any historic sites or publicly owned public parks, recreation areas, wildlife or waterfowl refuges (Section 4[f]) within or immediately adjacent to the construction area?	☐	☐	☒
21. Does the project have the potential to affect properties acquired or improved with Land and Water Conservation Fund Act (Section 6[f]) funds?	☐	☐	☒
Visual Resources			
22. Does the project have the potential to affect any visual or scenic resources?	☐	☐	☒
Relocation Impacts			
23. Will the project require the relocation of residential or business properties?	☐	☐	☒
Land Use, Community, and Farmland Impacts			
24. Will the project require any right of way, including partial or full takes? Consider construction easements and utility relocations.	☐	☐	☒
25. Is the project inconsistent with plans and goals adopted by the community?	☐	☐	☒
26. Does the project have the potential to divide or disrupt neighborhoods/communities?	☐	☐	☒
27. Does the project have the potential to disproportionately affect low-income and minority populations?	☐	☐	☒
28. Will the project require the relocation of public utilities?	☐	☐	☒
29. Will the project affect access to properties or roadways?	☐	☐	☒
30. Will the project involve changes in access control to the State Highway System (SHS)?	☐	☐	☒
31. Will the project involve the use of a temporary road, detour, or ramp closure?	☐	☐	☒
32. Will the project reduce available parking?	☐	☐	☒
33. Will the project construction encroach on state or federal lands?	☐	☐	☒
34. Will the project convert any farmland to a different use or impact any farmlands?	☐	☐	☒
Cultural Resources			
35. Is there National Register listed, or potentially eligible historic properties, or archaeological resources within or immediately adjacent to the construction area? *(Note: Caltrans PQS answers question #35)*	☐	☐	☒
36. Is the project adjacent to, or would it encroach on Tribal land?	☐	☐	☒

For Sections B, C, and D, check appropriate box to indicate required technical studies, coordination, permits, or approvals.

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☐ **Traffic**		
Check one:		
☐ Traffic Study	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Noise**		
Check as applicable:		
☐ Traffic Related		
☐ Construction Related		
Check one:		
☐ Noise Study Report	☐ Caltrans	☐ Approval
☐ NADR	☐ Caltrans	☐ Approval

☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Air Quality** ***Check as applicable:*** ☐ Traffic Related ☐ Construction Related ***Check one:*** ☐ Air Quality Report	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
	☐ FHWA	☐ Conformity Finding (23 USC 327 CEs, EAs, EISs)
	☐ Caltrans	☐ Conformity Finding (23 USC 326 CEs)
	☐ Regional Agency	☐ PM10/PM2.5 Interagency Consultation
☐ **Hazardous Materials/ Hazardous Waste** ***Check as applicable:*** ☐ Initial Site Assessment (Phase 1)	☐ Caltrans	☐ Approval
☐ Preliminary Site Assessment (Phase 2)	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
	☐ Cal EPA DTSC	☐ Review Database
	☐ Local Agency	☐ Review Database
☐ **Water Quality/Resources** ***Check as applicable:*** ☐ Water Quality Assess. Report	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Sole-Source Aquifer (Districts 5, 6 and 11)**	☐ EPA (S.F. Regional Office)	☐ Approval of Analysis in ED
☐ **Coastal Zone**	☐ CCC	☐ Coastal Zone Consistency Determination

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☐ **Floodplain**		
Check as applicable:		
☐ Location Hydraulic Study	☐ Caltrans	☐ Approval
☐ Floodplain Evaluation Report	☐ Caltrans	☐ Approval
☐ Summary Floodplain Encroachment Report	☐ Caltrans	☐ Approval
	☐ Caltrans	☐ Only Practicable Alternative Finding
	☐ FHWA	☐ Approves significant encroachments and concurs in Only Practicable Alternative Findings
☐ **Wild and Scenic Rivers**	☐ River Managing Agency	☐ Wild and Scenic Rivers Determination
☐ **Biological Resources**		
Check as applicable:		
☐ NES, Minimal Impact	☐ Caltrans	☐ Approval
☐ NES		
☐ BA	☐ Caltrans	☐ Approves for Consultation
	☐ USFWS ☐ NOAA Fisheries	☐ Section 7 Informal/Formal Consultation
☐ EFH Evaluation	☐ NOAA Fisheries	☐ MSA Consultation
☐ Bio-Acoustic Evaluation	☐ NOAA Fisheries	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ **Wetlands**		
Check as applicable:		
☐ WD and Assessment	☐ Caltrans	☐ Approval
	☐ ACOE	☐ Wetland Verification
	☐ NRCS	☐ Agricultural Wetland Verification
	☐ Caltrans	☐ Wetlands Only Practicable Alternative Finding
☐ **Invasive Plants**		
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Section 4(f)**		
Check as applicable:		
	☐ Caltrans	☐ Determine Temporary Occupancy
☐ De minimis	☐ Caltrans	☐ De minimis finding
☐ Programmatic 4(f) Evaluation Type: _____	☐ Caltrans	☐ Approval
☐ Individual 4(f) Evaluation	☐ Caltrans	☐ Approval
	☐ Agency with Jurisdiction ☐ SHPO ☐ DOI ☐ HUD ☐ USDA	

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☐ **Section 6(f)**	☐ Agency with Jurisdiction ☐ NPS	☐ Determines Consistency with Long-Term Management Plan
	☐ NPS	☐ Approves Conversion
☐ **Visual Resources**		
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Minor VIA	☐ Caltrans	☐ Approval
☐ Moderate VIA	☐ Caltrans	☐ Approval
☐ Advance/Complex VIA	☐ Caltrans	☐ Approval
☐ **Relocation Impacts**		
Check one:		
☐ Relocation Impact Memo	☐ Caltrans	☐ Approval
☐ Relocation Impact Study	☐ Caltrans	☐ Approval
☐ Relocation Impact Report	☐ Caltrans	☐ Approval
☐ **Land Use and Community Impacts**		
Check one:		
☐ CIA	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Construction/Encroachment on State Lands**		
Check as applicable:		
☐ SLC Jurisdiction	☐ SLC	☐ SLC Lease
☐ Caltrans Jurisdiction	☐ Caltrans	☐ Encroachment Permit
☐ SP Jurisdiction	☐ SP	☐ Encroachment Permit
☐ **Construction/Encroachment on Federal Lands**	☐ Federal Agency with Jurisdiction	☐ Encroachment Permit
☐ **Construction/Encroachment On Indian Trust Lands**	☐ Bureau of Indian Affairs	☐ Right of Way Permit
☐ **Farmlands**		
Check one:		
☐ CIA	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
Check as applicable:		
☐ Form AD 1006	☐ NRCS	☐ Approves Conversion
	☐ CDOC	☐ Approves Conversion
☐ Conversion to Non-Agri Use	☐ ACOE	

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/ Approvals
☐ **Cultural Resources** (PQS completes this section) ***Check as applicable:***	☐ Caltrans PQS	☐ Screened Undertaking
☐ APE Map	☐ Caltrans PQS and DLAE	☐ Approves APE Map
	☐ Local Preservation Groups and/or Native American Tribes	☐ Provides Comments Regarding Concerns with Project
☐ HPSR ☐ ASR ☐ HRER	☐ Caltrans	☐ Approves for Consultation
☐ Finding of Effect Report	☐ Caltrans	☐ Concurs on No Effect, No Adverse Effect with Standard Conditions
	☐ SHPO	☐ Letter of Concurrence on Eligibility, No Adverse Effect without Standard
☐ MOA	☐ Caltrans	☐ Approves MOA
	☐ SHPO	☐ Approves MOA
	☐ ACHP (if requested)	☐ Approves MOA
☐ **Permits** Copies of permits and a list of mitigation commitments are mandatory submittals following NEPA approval.	☐ ACOE	☐ Section 404 Nationwide Permit
	☐ ACOE	☐ Section 404 Individual Permit
	☐ Caltrans/ACOE/EPA ☐ USFWS ☐ NOAA Fisheries	☐ NEPA/404 Integration MOU
	☐ ACOE	☐ Rivers and Harbors Act Section 10 Permit
	☐ USCG	☐ USCG Bridge Permit
	☐ RWQCB	☐ Section 401 Water Quality Certification
	☐ CDFG	☐ Section 1602 Streambed Alteration Agreement
	☐ RWQCB	☐ NPDES Permit
	☐ CCC ☐ Local Agency	☐ Coastal Zone Permit
	☐ BCDC	☐ BCDC Permit

Notes: Additional studies may be required for other federal agencies.

ACHP = Advisory Council on Historic Preservation
ACOE = U.S. Army Corps of Engineers
ADL = Aerially Deposited Lead
APE = Area of Potential Effect
APN = Assessor Parcel Number
ASR = Archaeological Survey Report
BA = Biological Assessment
BCDC = Bay Conservation and Development Commission
BE = Biological Evaluation
BO = Biological Opinion
Cal EPA = California Environmental Protection Agency
CCC = California Coastal Commission
CDFG = California Department of Fish and Game
CDOC = California Department of Conservation
CE = Categorical Exclusion
CIA = Community Impact Assessment
CWA = Clean Water Act
DLAE = District Local Assistance Engineer
DOI = U.S. Department of Interior
DTSC = Department of Toxic Substances Control
EA = Environmental Assessment
ED = Environmental Document
EFH = Essential Fish Habitat
EIS = Environmental Impact Statement
EPA = U.S. Environmental Protection Agency
FEMA = Federal Emergency Management Agency
FHWA = Federal Highway Administration
FONSI = Finding of No Significant Impacted
FTIP = Federal Transportation Improvement Program
HPSR = Historic Property Survey Report
HRER = Historical Resources Evaluation Report
HUD = U.S. Housing and Urban Development
MOA = Memorandum of Agreement
MSA = Magnuson-Stevens Fishery Conservation and Management Act
NEPA = National Environmental Policy Act
NADR = Noise Abatement Decision Report
NES = Natural Environment Study
NHPA = National Historic Preservation Act
NOAA = National Oceanic and Atmospheric Administration
NMFS National Marine Fisheries Service
NPDES = National Pollutant Discharge Elimination System
NPS = National Park Service
NRCS = Natural Resources Conservation Service
PM10 = Particulate Matter 10 Microns in Diameter or Less
PM2.5 = Particulate Matter 2.5 Microns in Diameter or Less
PMP = Project Management Plan
PQS = Professionally Qualified Staff
ROD = Record of Decision
RTIP = Regional Transportation Improvement Program
RTP = Regional Transportation Plan
RWQCB = Regional Water Quality Control Board
SER = Standard Environmental Reference
SEP = Senior Environmental Planner
SHPO = State Historic Preservation Officer
SLC = State Lands Commission
SP = State Parks
TIP = Transportation Improvement Program
USCG = U.S. Coast Guard
USDA = U.S. Department of Agriculture
USFWS = U.S. Fish and Wildlife Service
WD = Wetland Delineation

E. Preliminary Environmental Document Classification (NEPA)

Based on the evaluation of the project, the environmental document to be developed should be:

Check one:

- ☐ Environmental Impact Statement (*Note: Engagement with participating agencies in accordance with 23 USC 139 required)*
  - ☐ Compliance with 23 USC 139 regarding Participating Agencies required
- ☐ Complex Environmental Assessment
- ☐ Routine Environmental Assessment
- ☒ Categorical Exclusion without required technical studies.
- ☐ Categorical Exclusion with required technical studies

  (if Categorical Exclusion is selected, check one of the following):
  - ☐ Section 23 USC 326
    - ☐ 23 CFR 771 activity ()()
    - ☒ 23 CFR 771 activity (d) (1)
    - ☐ Activity _____ listed in the Section 23 USC 326
  - ☐ Section 23 USC 327

F. Public Availability and Public Hearing

Check as applicable:

- ☒ Not Required
- ☐ Notice of Availability of Environmental Document
- ☐ Public Meeting
- ☐ Notice of Opportunity for a Public Hearing
- ☐ Public Hearing Required

G. Signatures

Local Agency Staff and/or Consultant Signature

(Signature of Preparer)	10/2/14 *(Date)*	760-398-5744 *(Telephone No.)*

Oscar Espinoza, P.E.
(Name)

Local Agency Project Engineer Signature

This document was prepared under my supervision, according to the *Local Assistance Procedures Manual,* Exhibit 6-B, "Instructions for Completing the Preliminary Environmental Study Form."

Jonathan Hoy, P.E. *(Signature of Local Agency)*	10-2-14 *(Date)*	760-398-5744 *(Telephone No.)*

Caltrans District Professionally Qualified Staff (PQS) Signature

☐ Project does not meet definition of an "undertaking"; no further review is necessary under Section 106 ("No" Section A, #35).

☐ Project is limited to the type of activity listed in Attachment 2 of the Section 106 PA and based on the information provided in the PES Form, the project does not have the potential to affect historic properties ("No" Section A, #35).

☐ Project is limited to the type of activity listed in Attachment 2 of the Section 106 PA, but the following additional procedures or information is needed to determine the potential for effect ("To Be Determined" Section A, #35):
☐ Records Search ☐ _____ ☐ _____ ☐ _____

☐ Project meets the definition of an "undertaking"; all properties in the project area are exempt from evaluation per Attachment 4 of the Section 106 PA ("No" Section A, #35).

☐ The proposed undertaking is considered to have the potential to affect historic properties; further studies for 106 compliance are indicated in Sections B, C, and D of this PES Form ("Yes" Section A, #35).

_____ _____ _____
(Signature of Professionally Qualified Staff) *(Date)* *(Telephone No.)*

The following signatures are required for all CEs, routine and complex EAs, and EISs:

Caltrans District Senior Environmental Planner (or Designee) and DLAE Signatures

I have reviewed this Preliminary Environmental Study (PES) Form and determined that the submittal is complete and sufficient. I concur with the studies to be performed and the recommended NEPA Class of Action.

_____ _____ _____
(Signature of Senior Environmental Planner or Designee) *(Date)* *(Telephone No.)*

_____
(Name)

_____ _____ _____
(Signature of District Local Assistance Engineer or Designee) *(Date)* *(Telephone No.)*

_____
(Name)

☐ HQ DEA Environmental Coordinator concurrence _____. Email concurrence attached.
(*date*)

Preliminary Environmental Investigation
Notes to Support the Conclusions of the PES Form
(May Also Include Continuation of Detailed Project Description)

Brief Explanation of How Project Complies, or Will Comply with Applicable Federal Mandate (Part A):

1. No, this is complete construction.

2. No public controversy is expected.

3. The project is in accordance with the Mobility Element of the 2013 General Plan by the City. The plan accommodates 3 through lanes in each direction. Includes improvements as sidewalk, bicycle lanes and landscape.

4. No, only potential noise source is from regular construction equipment, ie. asphalt machine, asphalt delivery trucks, saw-cutting curb and gutter in the construction of offsite improvements, nailing forms together for concrete pours.

5. Yes, per www.dot.ca.gov/hq/env/air/pages/conftable.htm

6. Yes, the project is under Table 2-Exempt Projects-Other- Transportation Enhancement Activities.

7. N/A

8. N/A

9. Project not likely to encounter hazardous waste as widening work is at previously agricultural fields.

10. No. The project sites are not located within or adjacent to a water resource

11. Compliance is not invoked; the project is not located in a U.S.EPA-designated sole source aquifer area.

12. Nearest coastal zone is over 100 miles away.

13. The project is not located within a 100-yer flood plain as identified by FEMA Map Panel #06065C2262G and 06065C2270G dated September, 26, 2008

14. The City of Coachella is not located within one mile of a listed Wild and Scenic River. SOURCE: City of Coachella-General Plan Land Use Element 2035.

15. The project will not affect any federally listed threatened or endangered species.

16. No migratory birds present in the area.

17. Project locations do not involve new construction within or adjacent to a wetland.

18. The project locations are in the general suburban residential area. Source: General Plan Land Use Element 2035

19. No. The project include a landscape median, and will be limited to hardscape and approved plants by City of Coachella Planning Department.

20. The project site is not adjacent to a public park, recreation area, or wildlife or waterfowl refuges.

21. No lands acquired with Land and water Conservation Fund Act

22. No potential to affect visual or scenic resources. Project is with-in fully developed area.

23. No relocations required for residential or business properties. Maximum improvements along the north side are existing housing development. South side is undeveloped property; right of way in this section of the road has been dedicated to the City.

24. No right of way required.

25. Not inconsistent with goals.

26. No potential to disrupt neighborhoods.

27. No potential to disrupt neighborhoods.

28. No utilities to be relocated.

29. No access will be affected.

30. The project will not affect access control to the State Highway System.

31. No temporary roads or detours will occur. If detours used, will be with-in same roadway or traffic limited to one lane controlled by flaggers.

32. Will not reduce parking. No geometric changes.

33. Construction work will not encroach on state highway R/W.

34. No farmland will be affected.

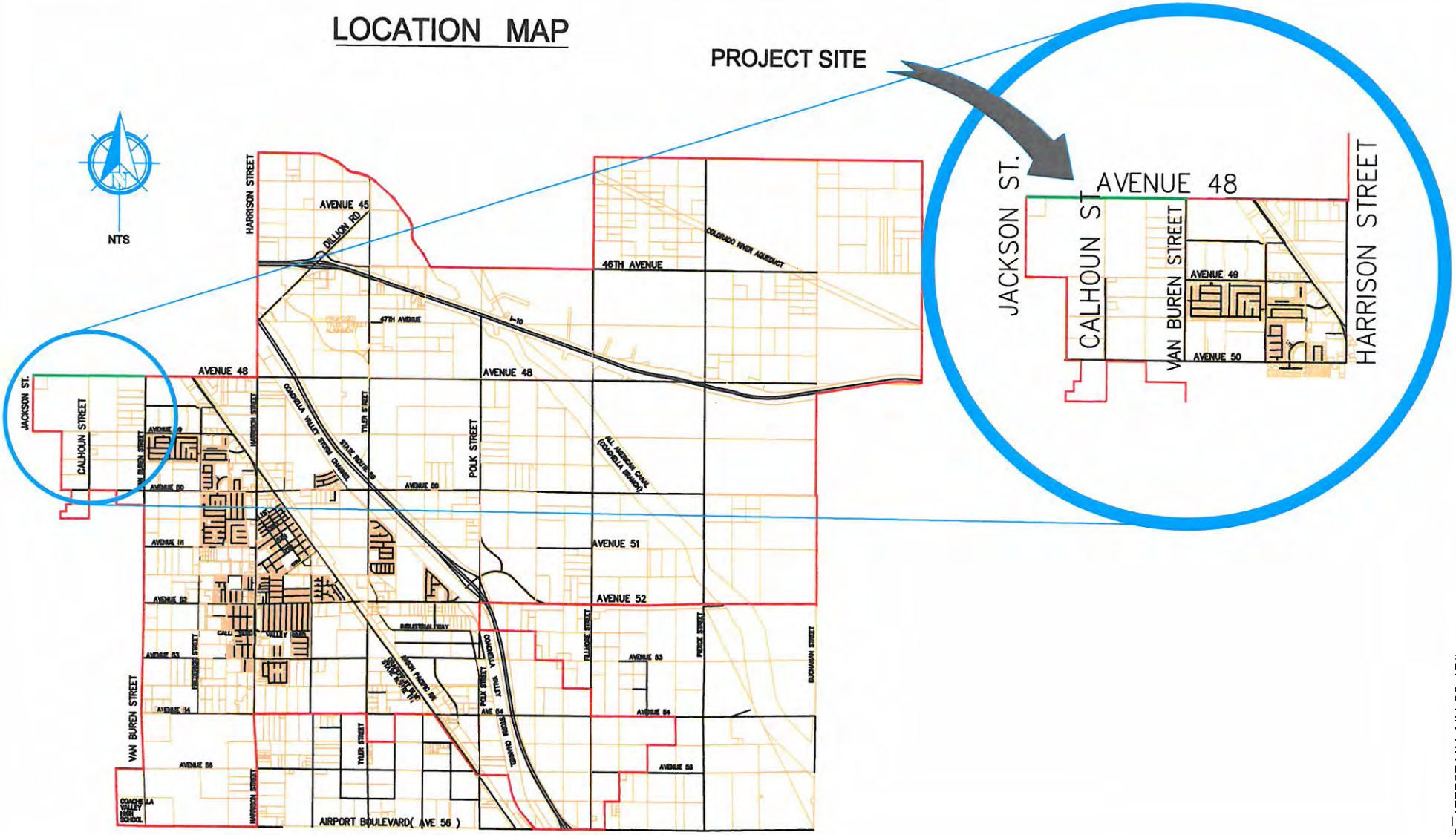
35. N/A

36. City of Coachella does indeed have 3 tribal land areas within or adjacent to city boundaries. However, the proposed location do not encroach onto nor are they adjacent to these tribal lands.

Distribution 1) Original - DLAE, 2) Local Agency Project Manager, 3) DLA Environmental Coordinator 4) Senior Environmental Planner (or designee), 5) District PQS

Updated: 05/15/08

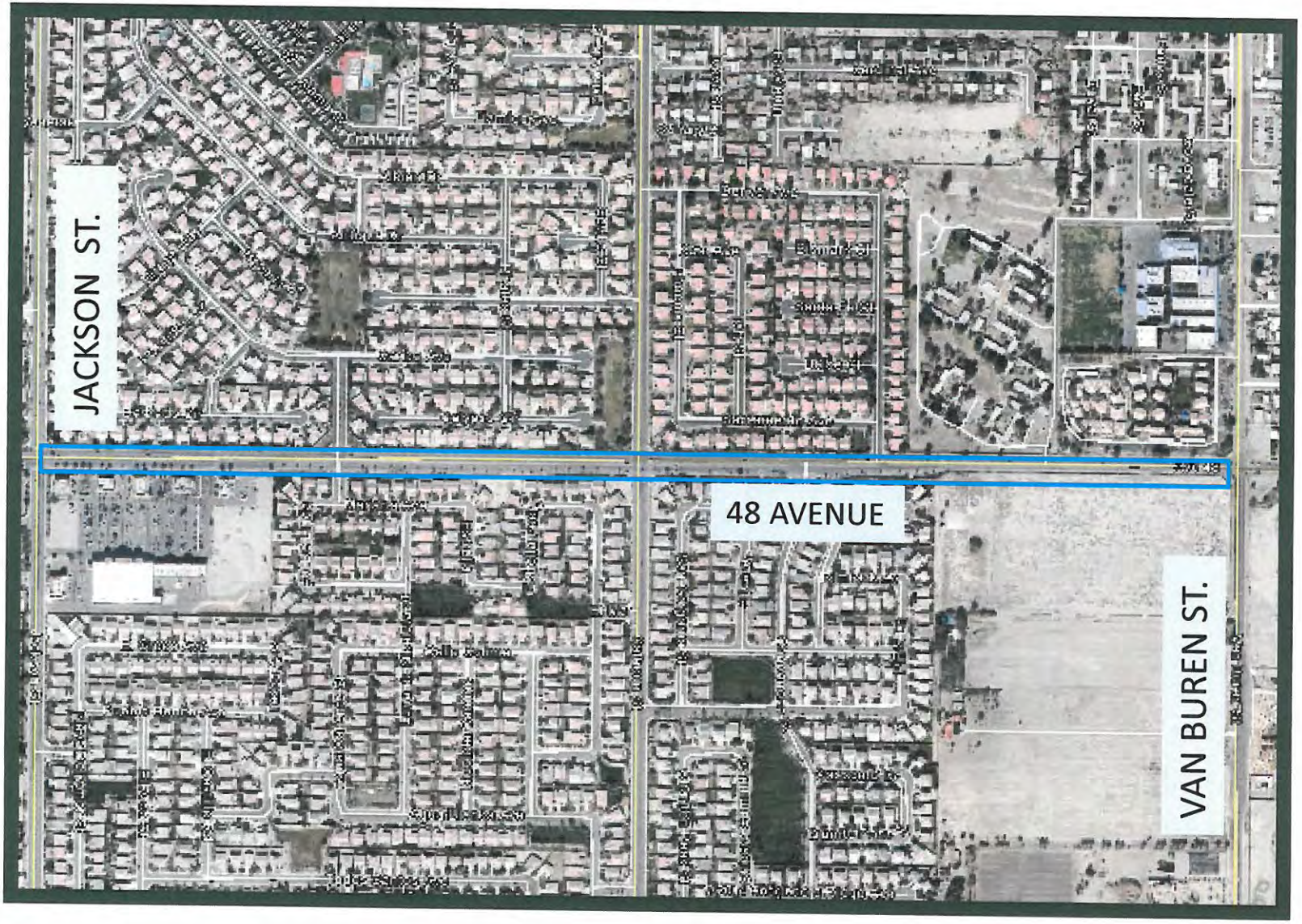
LOCATION MAP



CITY OF COACHELLA MAP

#17-00 RIV RIV151217_CMP_PES

PROJECT LIMITS



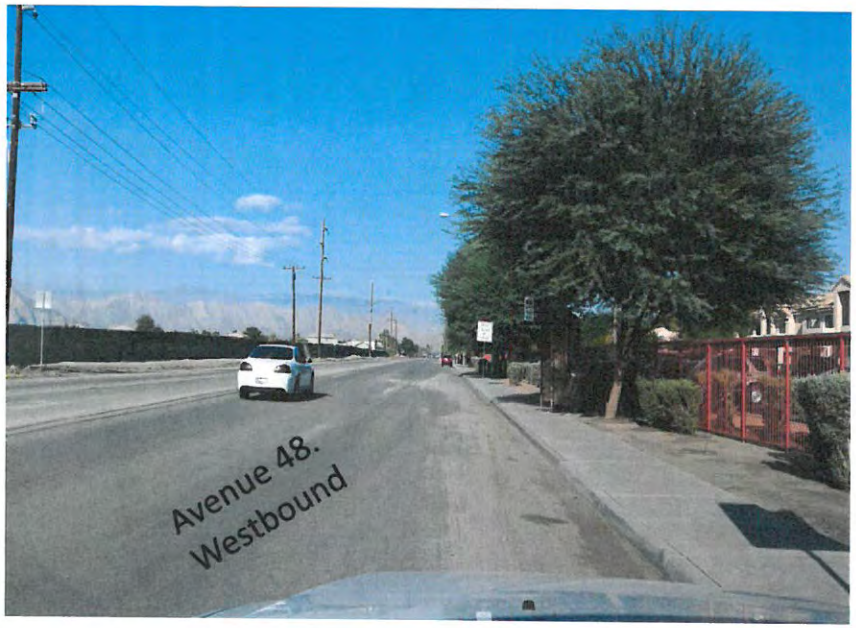
#17-00 RIV RIV151217_CMP_PES

CALHOUN ST.
48 AVENUE
JACKSON ST.

VAN BUREN ST.
48 AVENUE
CALHOUN ST.

WIDENING OF AVENUE 48

Avenue 48 looking West from Van Buren St.



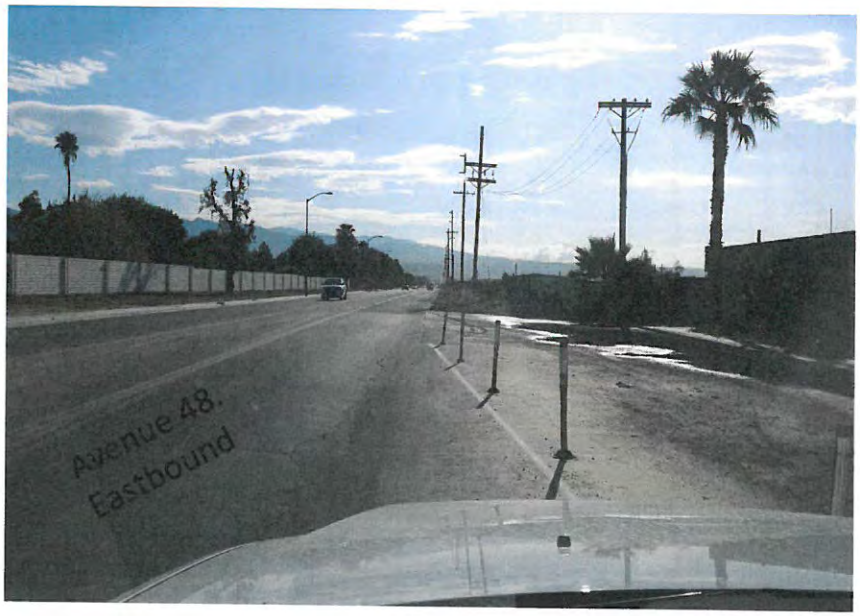
Avenue 48 looking West 2 lanes

#17-00 RIV RIV151217_CMP_PES

GRAPEFRUIT BLVD. PAVEMENT REHABILITATION

Avenue 48 looking eastbound one lane

Avenue 48 looking eastbound one lane



Congested Management Process – Project Report (Partial Pages 1-8)

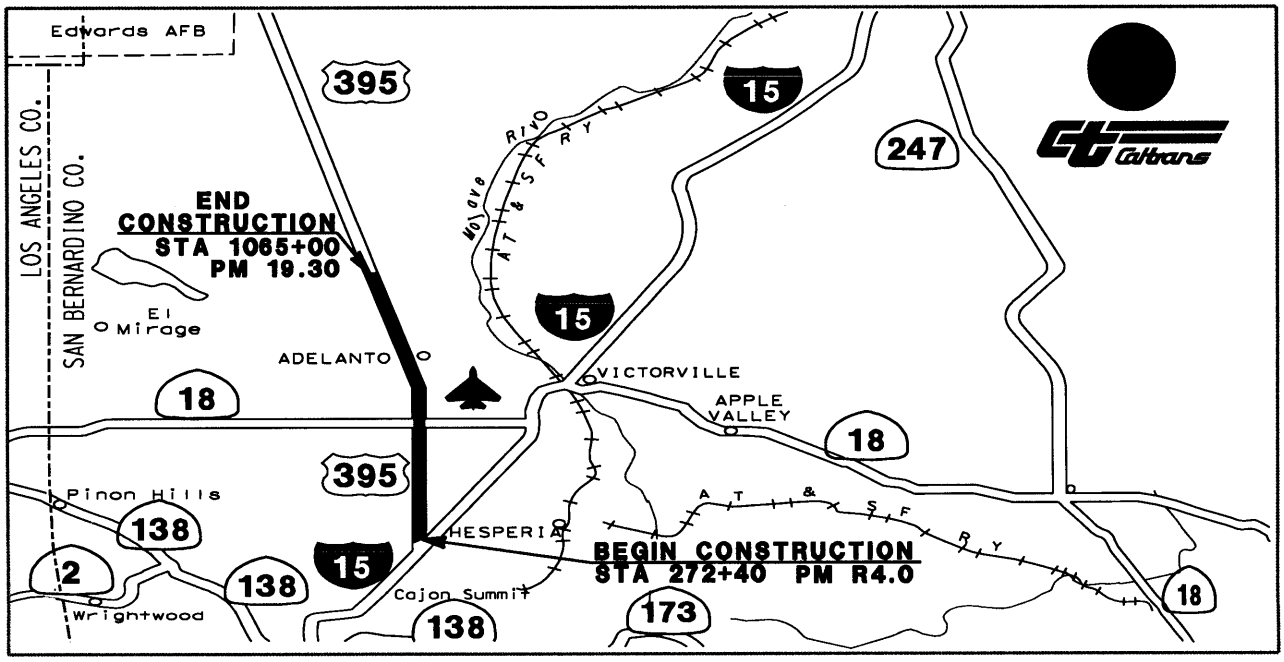
Project 200451

Project Description:

US-395 (HESPERIA, VICTORVILLE, & ADELANTO) FROM SR18 TO CHAMBERLAINE WAY -INTERIM WIDENING-WIDEN FROM 2-4 LANES AND ADD LEFT TURN CHANNELIZATION AT INTERSECTIONS(EA OF631)(Toll Credits: FY14/15 $72 for DEMO, FY15/16 $683 for STP, FY17/18 $2,217 for STP)

08-SBd-395, PM R4.0/19.3
08-236-0F6300
HE-13(STIP)
20.20.025.700

PROJECT REPORT



VICINITY MAP

In San Bernardino County, On United States Route 395
From 0.16 mi North Of Interstate Route 15 Junction
To 1.80 mi South Of Desert Flower Road

I have reviewed the right of way information contained in this Project Report and the R/W Data Sheet attached hereto, and find the data to be complete, current, and accurate:

BASEM MUALLEM – ACTING DEPUTY DISTRICT DIRECTOR
RIGHT OF WAY

APPROVAL RECOMMENDED:

for **DAVID BRICKER** – DEPUTY DISTRICT DIRECTOR
ENVIRONMENTAL PLANNING

JIM ROBINSON – PROJECT MANAGER

GAM **CHRISTY CONNORS** – DEPUTY DISTRICT DIRECTOR DESIGN
FOR

APPROVED: 12/31/09

for **RAYMOND W. WOLFE, PHD** - DISTRICT DIRECTOR Date

08-SBd-395, PM R4.0/19.3
08-236-0F6300
HE-13(STIP)
20.20.025.700

This Project Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

REGISTERED CIVIL ENGINEER — *DATE* 12/21/09

REGISTERED PROFESSIONAL ENGINEER
REFAAT M. ELSHERIF
C 67382
EXP. 9/30/10
CIVIL
STATE OF CALIFORNIA

SUPERVISING ENGINEER — *DATE* 12/21/09

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08-SBd-395 PM R4.0/19.3
08-236-0F6300
Widen Highway and
Improve Intersections
HE-13 (STIP)
20.20.025.700

PROJECT REPORT

1. INTRODUCTION

It is proposed to improve the operational efficiency of United States Highway 395 (US-395) from 0.16 mi north of the junction of US-395 and Interstate 15(I-15) PM R4.0, in the City of Hesperia to PM 19.3, approximately 1.80 mi south of Desert Flower Road in the City of Adelanto, in San Bernardino County. This project was initiated at the request of the Cities of Hesperia, Victorville and Adelanto, in an effort to improve the operational efficiency of the facility by increasing the carrying capacity of the facility. The existing highway within the project limit varies from 2 to 4 lanes. Along the existing 2-lane segments passing opportunities are severely restricted due to the large volume of traffic and the high percentage of truck traffic.

This project is classified as a Category 4A project as defined in the Project Development Procedures Manual (7th Edition, Part 2, Chapter 8, Section 5) because it will substantially increase the traffic capacity of the highway. The total estimated construction cost including right of way and structures for the proposed alternative is $109,215,000. Funding for the Project Approval and Environmental Document (PA/ED) phase of the project will be provided by San Bernardino Associated Government (SANBAG) under the terms of the approved cooperative agreement (No. 08-1250), dated May 4, 2005. Additional funding for subsequent phases of the project is anticipated from Federal, State, and local governments. This project is eligible for programming under the State Transportation Improvement Program (STIP) under the HE-13 (20.20.025.700) – Highway Widening Program. This project is included in the 2008 Regional Transportation Plan (RTP). There is strong support for the proposed improvements from local governments and there is no known opposition.

2. RECOMMENDATION

It is recommended that this Project be approved using the Preferred Alternative and that project proceed to the design phase.

3. BACKGROUND

A. Project History

The District 8 Pre-Program Engineering Studies, via Project Initiation Proposal (PIP) number 2728, initiated the project. The PIP 2728 combined PIP 2659 and 2660 that recommended widening US-395 from Post Mile (PM) 3.98 to 19.30. It is proposed to combine both locations into a single project under one Expenditure Authorization to

facilitate the project development process and improve efficiency. A Project Study Report/Project Development Support was approved on August 1, 2005.

B. Existing Facility

The segment of US-395 within District 08 is divided into five (5) segments as described in the 2002 Route Concept Report. This project report focuses on Segment one from Jct. I-15 to Jct. SR-18, Segment two Jct. SR-18 to El Mirage Rd., and a small portion of Segment three from El Mirage Rd. to Calleja Rd. Within the project limits, the existing facility is in general a two-lane road with some segments that have been widened at intersections and other locations to accommodate rapid urbanization along this corridor. The existing lanes are 12 feet wide and shoulder widths vary from five to eight feet. The structural section of the existing roadbed consists of asphalt concrete pavement. The horizontal alignment of the existing facility consists of long tangent sections with horizontal curves. The vertical alignment of the existing roadbed is essentially flat, except for a significant dip between Hollister Road and Phelan Rd. /Main St. There are two major bridge structures within the project limits. The California Aqueduct Bridge (Br. No. 54-0829) located at PM6.83 is a single span reinforced concrete box girder structure. The Joshua Wash Bridge (Br. No. 54-0524) located at PM14.58 is a double reinforced concrete box culvert.

4. NEED AND PURPOSE

A. Problem, Deficiencies, Justification

Within the project limits, US-395 is generally a two-lane conventional highway with one 12 ft-lane and shoulder that varies from five to eight feet in each direction. Large volumes of traffic with high percentages of truck traffic that circulate along these segments of US-395 restrict passing opportunities. Operating conditions within the project limits are expected to continue to deteriorate as traffic demand increases owing to growth and development currently taking place along the corridor. Without significant and timely improvements, regional and inter-regional travel along this corridor will be severely compromised.

Approaches to several major intersections have already been improved to provide exclusive left turn lanes; two lanes for through traffic, and dedicated right turn lanes. However, the unimproved segments between these intersections are still major impediments to the efficient flow of traffic.

Widening between the segments to accommodate 2 lanes in each direction with a continuous 14-foot wide median consisting of left turn pockets will increase the operational capacity and will enhance the operational efficiency of the corridor by improving passing opportunities.

B. Regional and System Planning

US-395 in San Bernardino County begins at the junction with Interstate 15 (I-15) (PM R3.98) in Hesperia and ends at the Kern County Line (PM 73.51). The route segment within District 08 is approximately 70 mi. US-395 is classified as a Rural Principal Arterial, and is included in the Surface Transportation Assistance Act (STAA) as a route for the movement of extra legal permits loads. It is also classified as a High Emphasis, Focus and Gateway route as part of the California Interregional Road System (IRRS), providing access to and links between economic centers, recreational areas, urban and rural regions. It is also part of the Strategic Highway Network (STRAHNET) serving the Naval Air Weapons Station at China Lake and Edwards Air Force Base. The proposed project is consistent with statewide, regional, and local planning goals, and is being coordinated with impacted governmental, regulatory and private agencies in the area to ensure consistency with their specific goals and objectives. The proposed improvements are consistent with the Route Concept Report.

C. Traffic

Current and Forecasted Traffic

The existing and projected traffic data for US-395 within the project limits are as shown in Table 1 below.

Table 1

LOCATION	ADT		DHV		Trucks (%)		Directional Split	
	2006	2035	2006	2035	2006	2035	2006	2035
PM R4.0/11.18	27,700	33,700	1,548	2,865	12	12	60/40	60/40
PM 11.18/19.36	16,800	25,800	822	3,241	10	10	60/40	60/40

Existing and projected LOS and Volume Capacity Ratios have been developed and analyzed to existing operating conditions and impact of the proposed improvements. This data is presented in Table 2.

Table 2

LOCATION	LOS			Volume Capacity Ratio (V/C)		
	2006	2035 (No-build)	2035 (Alt 2&3)	2006	2035 (No-build)	2035 (Alt 2&3)
PM R4.0/11.18	E	F	B	0.53	0.98	16.5
PM 11.18/19.36	C	F	C	0.28	1.11	18.6

At the current rate of growth, traffic is expected to increase by 30% by year 2035. As a result, levels of service are expected to deteriorate rapidly to breakdown conditions. The proposed widening improvements would restore the facility to its desirable level of service and would also enhance the overall operational safety of these segments along US-395.

Accident Rates

Accident data from the Traffic Accident Surveillance and Analysis System (TASAS) for US-395 for this project limits from January 1, 2006 through December 31, 2008 are shown in Table 3.

Table 3

LOCATION	ACTUAL RATES (Million vehicle miles)			AVERAGE RATES (Million vehicle miles)		
	F	F + I	TOT	F	F+I	TOT
PM R4.0/19.36	0.019	0.25	1.14	0.019	0.48	1.17

The accident data for the period from January 1, 2006 through December 31, 2008, indicates that the total accident rate within this segment was higher than average rates for similar type facilities. The accidents involved Rear End, Broadside, Sideswipe, Head On, Overturn and Hit Object due to excessive speed, failure to yield, and unsafe turning

movement. Providing additional capacity and median is expected to improve passing opportunities, minimize traffic conflicts, and reduce the number of accidents.

5. ALTERNATIVES

A. Viable Alternatives

This Project Report assesses the three alternatives as follows:

- Alternative 1: No-Build.
- Alternative 2: Widening the highway on existing alignment.
- Alternative 3: Widening the highway on realigned alignment.

Alternative 1 (rejected) - No-Build

This alternative consists of no physical improvements or modification at this time. There are no capital costs associated with this alternative. Under this scenario, the existing operational deficiencies will not improve and could potentially result in an increase in the number of accidents. Also, with the No-Build alternative, maintenance costs can be expected to increase. Therefore, this is not an acceptable alternative.

Alternative 2 (preferred) - Widening the highway on existing alignment

The existing centerline alignment would be maintained and the roadbed would be widened approximately 22 feet in each direction. This alternative would provide two 12-ft lanes with 8-ft outside shoulders in each direction, and a 14-ft median with rumble strips. The median would provide a buffer between opposing traffic flows and the necessary pockets for left-turn maneuvers, thereby, enhancing the safety of the traveling public. A key highlight of this proposal features existing intersections previously widened, seamlessly matching this alternative's cross section with no further widening or realignment necessary. Right of way acquisitions and utility relocations would be necessary with this alternative but no exceptions to current design standards would be needed. This alternative would meet the projected traffic demands.

- **Proposed Engineering Features**

  The existing single span California Aqueduct Bridge No. 54-0829 L/R and the Joshua Wash Bridge No. 54-0524 would also need to be widened to accommodate the proposed roadway improvements. In addition, the following five intersections are proposed for improvement: Holly Road/Hopland Street, Seneca Road, Air Base Road, Auburn Avenue and El Mirage Road.

Congested Management Process – Initial Study

Project 20111625

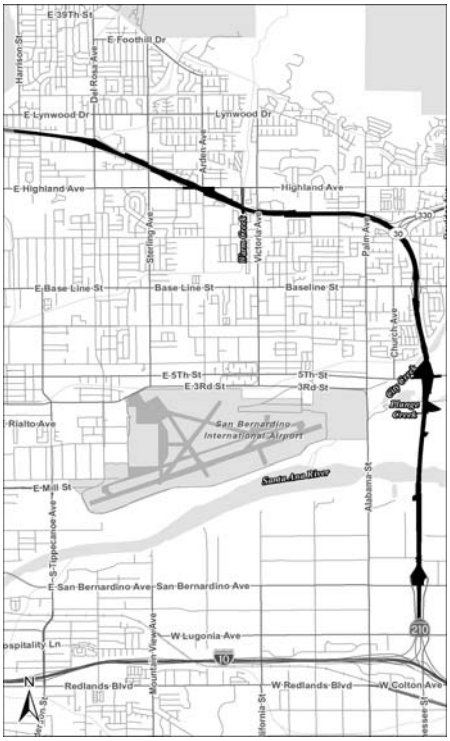
Project Description:

SR210 LANE ADDITION - ADD 1 MIXED FLOW LANE IN EACH DIRECTION FROM HIGHLAND AVE. TO SAN BERNARDINO AVE (REDLANDS) INCLUDES AUX. LANES BETWEEN BASE LINE AND 5TH STS AND AN ACCELERATION LANE AT 5TH ST. E/B ON RAMP AND DECELRATION LANE AT HIGHLAND AVE E/B OFF RAMP EXTENDING TO STERLING AVENUE (Under 1/4 miles length)

State Route 210 Mixed Flow Lane Addition from Highland Avenue to San Bernardino Avenue Project

CITIES OF HIGHLAND, SAN BERNARDINO, AND REDLANDS
SAN BERNARDINO COUNTY, CALIFORNIA
DISTRICT 8– SBD – 210 (PM R25.0/R33.2)
EA 0C700/PN 08-12000164

Initial Study [with Proposed Mitigated Negative Declaration]



Prepared by the
State of California Department of Transportation and in cooperation with the San Bernardino Associated Governments and City of Highland

May 2016

SCH # _____
08-SBd-210-PM R25.0/R33.2
PN 08-12000164/EA 0C700

Add one mixed flow lane eastbound and one mixed flow land westbound along SR-210 from Sterling Avenue to San Bernardino Avenue (post mile R25.0 to post mile R33.2) in the cities of Highland, San Bernardino, and Redlands, and portion of unincorporated San Bernardino County, California.

INITIAL STUDY with (Proposed) Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation
and the San Bernardino Associated Governments

5/11/16
Date of Approval

DAVID BRICKER
Deputy District Director
District 8 Division of Environmental Planning
California Department of Transportation

The following persons may be contacted for more information about this document:

Mr. Kurt Heidelberg, Senior Environmental Planner
Environmental Studies "D" Branch Chief
California Department of Transportation, District 8
464 West 4th Street, 6th Floor, MS 820
San Bernardino, CA 92401-2841

Tim Watkins, Chief of Legislative and Public Affairs
San Bernardino Associated Governments
1170 W. 3rd Street, 2nd Floor
San Bernardino, CA 92410-1715
(909) 884-8276 x139

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APPENDICES

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Chapter 1 Proposed Project

1.1 Project Location

The San Bernardino Associated Governments (SANBAG), in cooperation with the California Department of Transportation (Caltrans) and the City of Highland, proposes to widen State Route (SR) 210 from Sterling Avenue to San Bernardino Avenue in the cities of Highland, San Bernardino, and Redlands, as well as a portion of unincorporated San Bernardino County, California. The widening would occur between post miles (PM) Revised (R) 26.3 and R32.4, for a distance of 6.1 miles. The total length of the proposed project limits is approximately 8.2 miles, from PM R25.0 to R33.2, which includes transition striping and signage. Figures 1-1 and 1-2 (on pages 1-9 and 1-11) show the regional vicinity map and the project location map, respectively. The project is on the *Redlands* and *Harrison Mountain* U.S. Geological Survey 7.5-minute topographic maps, in Township 1 North, Range 3 West, in Sections 30, 31, 32, 33 and 34, and in Township 1 South, Range 3 West, in Sections 4, 9, and 16. The land uses surrounding the proposed project corridor are urban and moderately to densely developed primarily with residential, public facilities, open space, and general commercial uses. There are four service interchanges within the proposed project limits—Highland Avenue, Base Line, 5th Street/Greenspot Road, and San Bernardino Avenue—and one freeway-to-freeway interchange at SR-330. Undercrossings occur at Victoria Avenue, Access Road, and Pioneer Avenue. There are existing water-crossing bridges at Sand Creek, City Creek, Plunge Creek, and the Santa Ana River.

1.2 Project Description

This section describes the proposed action and the design alternatives that were developed to meet the identified need through accomplishing the defined purpose(s), while avoiding or minimizing environmental impacts. The alternatives are “Build Alternative” and “No Build Alternative.”

The proposed project would widen SR-210 from Sterling Avenue to San Bernardino Avenue in the cities of Highland, San Bernardino, and Redlands, as well as a portion of unincorporated San Bernardino County, California, to add a mixed flow lane in each direction. The widening would occur between PM R26.3 and R32.4, for a distance of 6.1 miles. The total length of the proposed project limits is approximately 8.2 miles, from PM R25.0 to R33.2, which includes transition striping and signage. Within the limits of the proposed project, SR-210 is a four-lane divided freeway with two 12-foot lanes, flanked by 10-foot left shoulders and 10-foot right shoulders. The purpose of the proposed project is to reduce congestion and improve operational efficiency by providing lane continuity with the existing segments of freeway to the west and east of the project limits.

1.2.1 Purpose and Need

The purpose of the proposed project is to eliminate an existing bottleneck caused by the reduction in the number of mixed flow lanes within the project limits to:

- Provide continuity with the number of mixed flow lanes west and east of this freeway segment along SR-210 between Highland Avenue and San Bernardino Avenue.
- Increase the efficiency of this segment of SR-210 by minimizing weaving conflicts at the termini of the third mixed flow lane east and west of this freeway segment.
- Reduce congestion and improve operational efficiency along SR-210 within the project limits.

The proposed project is needed to eliminate an existing bottleneck, which would reduce congestion and improve operational efficiency by providing lane continuity with the existing segments of SR-210 to the west and east of the project limits. Currently, SR-210 consists of a six-lane facility (three lanes in each direction) to the west of Highland Avenue. To the east of Highland Avenue, the facility is four lanes (two in each direction) to approximately San Bernardino Avenue, where the existing freeway widens to four lanes in each direction at the terminus of SR-210 at Interstate 10 (I-10). This results in a lane imbalance condition and bottleneck within the corridor. In addition, capacity and operating conditions on SR-210 between Highland Avenue and San Bernardino Avenue are projected to operate at Level of Service (LOS)[1] F during the AM and PM peak hours by the year 2040 (see Tables 1-1 and 1-2), which is considered unacceptable to Caltrans. Freeway congestion has potential negative impacts such as increased air pollution, longer commuter and emergency vehicle delays, increased energy consumption, extended commute periods, increased driver frustration, and reduced safety, as well as adverse impacts on the regional and local economy.

[1] The ability of a highway to accommodate traffic is typically measured in terms of Level of Service (LOS). Traffic flow is classified by LOS, ranging from LOS A (free-flow traffic with low volumes and high speeds) to LOS F (traffic volume exceeds design capacity, with forced-flow and substantial delays).

Table 1-1. Existing (2012) and Horizon Year (2040)
SR-210 Eastbound Mainline and Ramp Operation Level of Service

Freeway Mainline Segment/ Ramp Connection	AM Peak Hour LOS		PM Peak Hour LOS	
	Existing 2012	Future Year 2040 No Build	Existing 2012	Future Year 2040 No Build
SR-210 between Sterling Avenue and Highland Avenue-Arden Avenue	B	D	C	D
SR-210 Highland Avenue off-ramp	N/A*	N/A*	N/A*	N/A*
SR-210 Arden Avenue on-ramp	C	**F**	C	**F**
SR-210 between Highland Avenue-Arden Avenue and SR-330	C	**F**	C	**F**
SR-210/SR-330 connector	B	D	C	D
SR-210 between SR-330 and Base Line	B	D	B	C
SR-210 Base Line on-ramp	D	**F**	D	**E**
SR-210 between Base Line and 5th Street-Greenspot Road	D	**F**	D	**E**
SR-210 5th Street off-ramp	D	**F**	C	**E**
SR-210 5th Street on-ramp	**E**	**F**	D	**F**
SR-210 between 5th Street-Greenspot Road and San Bernardino Avenue	**E**	**F**	D	**F**
SR-210 San Bernardino Avenue off-ramp	D	D	C	D
SR-210 San Bernardino Avenue on-ramp	B	C	B	C
SR-210 between San Bernardino Avenue and I-10	B	C	B	C

Shaded cells indicate (LOS E or F).
"Highland Avenue-Arden Avenue" refers to SR-210 off-ramps to Highland Avenue and SR-210 on-ramps from Arden Avenue (eastbound) and both Arden Avenue and Highland Avenue (westbound).
"5th Street-Greenspot Road" refers to SR-210 off-/on-ramps to 5th Street (eastbound) and SR-210 off-/on-ramps to Greenspot Road (westbound).
*Ramp junction analysis is not applicable for lane drop (trap) lane or lane addition connection to freeway.
Ramp junction analysis is not applicable for ramp connections in weave segments.
Source: Caltrans 2014h.

Table 1-2. Existing (2012) and Horizon Year (2040)
SR-210 Westbound Mainline and Ramp Operation Level of Service

Freeway Mainline Segment/ Ramp Connection	AM Peak Hour LOS		PM Peak Hour LOS	
	Existing 2012	Future Year 2040 No Build	Existing 2012	Future Year 2040 No Build
SR-210 between I-10 and San Bernardino Avenue off-ramp	B	C	C	D
SR-210 San Bernardino off-ramp	C	C	C	D
SR-210 San Bernardino Avenue on-ramp	C	**F**	D	**F**
SR-210 between San Bernardino Avenue and 5th Street-Greenspot Road	D	**F**	D	**F**
SR-210 Greenspot Road off-ramp	D	**F**	E	**F**
SR-210 Greenspot Road on-ramp	C	D	C	D
SR-210 between Greenspot Road and Base Line	C	**E**	C	**E**
SR-210 Base Line off-ramp	C	D	C	D
SR-210 between Base Line and SR-330	B	D	B	D
SR-210/SR-330 connector	D	**F**	C	**E**
SR-210 between SR-330 and Highland Avenue	D	**F**	C	**E**
SR-210 Highland Avenue off-ramp	D	**F**	D	**F**

Shaded cells indicate (LOS E or F).
"Highland Avenue-Arden Avenue" refers to SR-210 off-ramps to Highland Avenue and SR-210 on-ramps from Arden Avenue (eastbound) and both Arden Avenue and Highland Avenue (westbound).
"5th Street-Greenspot Road" refers to SR-210 off-/on-ramps to 5th Street (eastbound) and SR-210 off-/on-ramps to Greenspot Road (westbound).
*Ramp junction analysis is not applicable for lane drop (trap) lane or lane addition connection to freeway.
Ramp junction analysis is not applicable for ramp connections in weave segments.
Source: Caltrans 2014h

1.2.2 Alternatives

Build Alternative

The proposed Build Alternative would widen SR-210 from four mixed flow lanes (two lanes in each direction) to six mixed flow lanes (three lanes in each direction) from Sterling Avenue to San Bernardino Avenue by adding a mixed flow lane in each direction within the existing median (see Figures 1-3 and 1-4 on pages 1-13 and 1-51).

The proposed Build Alternative includes the following design features and elements.

- The existing segment of SR-210 from Sterling Avenue to San Bernardino Avenue would be widened from four mixed flow lanes (two lanes in each direction) to six mixed flow lanes (three lanes in each direction) with the addition of one mixed flow lane in each direction. The third lane would be added within the existing SR-210 median. Each of the six resulting mainline lanes would be 12 feet wide. Both directions (eastbound and westbound) would have 10-foot-wide left and right shoulders.
- An auxiliary lane would be created in each direction between the Base Line and 5th Street interchanges.

- A deceleration lane would be constructed on eastbound SR-210 from Sterling Avenue undercrossing to the proposed two-lane exit at Highland Avenue. Proposed permanent striping would start from Del Rosa Avenue in the eastbound direction.
- A new acceleration lane would be added at the 5th Street eastbound on-ramp.
- The existing SR-210 median would be re-graded and generally remain unpaved.
- The following existing bridges would be widened to accommodate the new mixed flow lanes: Highland Avenue/Arden Avenue, Sand Creek, Victoria Avenue, 5th Street/Greenspot Road, City Creek, Plunge Creek, Access Road, Santa Ana River, and Pioneer Avenue.
- The proposed project would not require the acquisition of new permanent right of way. Temporary Construction Easements (TCE) would likely be needed during the construction period for construction of noise barriers and construction access.
- Scour and pier protection would be installed at the drainages as needed to protect bridge foundations.
- Drainage system improvements would be constructed to carry runoff away from the traveled lanes and into traditional drainage courses.
- Stormwater treatment best management practice (BMP) features would be included at select locations where identified benefits outweigh impacts. To the fullest extent possible, roadside swales and bio-filtration strips would be used to convey both stormwater quantity flows and peak flows.
- A new fiber optic backbone system would be constructed within the existing median with branch connections linking the backbone system to existing traffic management system elements along the corridor, including wireless vehicle detection stations, ramp metering systems, and a Changeable Message Sign.
- Ramp metering systems would be installed on the existing on-ramps at the 5th Street/ Greenspot Road interchange.
- An existing weigh-in-motion system approximately 0.5 mile north of San Bernardino Avenue would be reconstructed to accommodate the additional lanes on the freeway.
- Utilities would be relocated, as needed, to accommodate the widened facility.
- Retaining walls would be constructed as needed by changes in elevation that cannot be accommodated by regrading.
- An existing sound wall between Base Line and 5th Street in the eastbound direction would be reconstructed to accommodate the proposed auxiliary lane. Additional noise barriers would be constructed where noise abatement is required and where they are determined to be feasible and reasonable (see Figure 1-3).

The ultimate corridor for SR-210 within the project limits would be an eight-lane freeway facility (six mixed flow lanes and two high occupancy vehicle lanes). Improving the facility to six mixed flow lanes would be compatible with the Route Concept Fact Sheet planning and

would not preclude future improvements or make these future improvements more costly to implement.

The proposed project is included in Southern California Association of Governments (SCAG) 2012 Regional Transportation Plan (RTP) Amendment 1, which was adopted by SCAG on June 12, 2013 and approved by the Federal Highway Administration (FHWA) on July 15, 2013. The proposed project is also included in the 2015 Federal Transportation Improvement Program (FTIP) adopted by SCAG on September 11, 2014 and approved by FHWA on December 15, 2014. Both the SCAG 2012 RTP Amendment 1 and SCAG 2015 FTIP include the proposed project as project numbers 4M01005 and 20111625, respectively. The proposed project is being funded with San Bernardino Sales Tax Measure I funds.

The total estimated cost for the project is $102.3 million, which includes right of way and construction costs.

Alternative 2 (No Build Alternative)

Under the No Build Alternative, no additional lanes would be constructed along SR-210 between Sterling Avenue and San Bernardino Avenue. This alternative, however, does not preclude the construction of future improvements.

The No Build Alternative provides a baseline for comparing impacts with the Build Alternative. It is used to compare the relative impacts and benefits of the proposed project improvements, but would not meet the identified purpose and need.

Congested Management Process – Project Report (Partial Pages 1-24)

Project SBD31850

Project Description:

IN GRAND TERRACE @ I-215 BARTON RD I/C RECONSTRUCT OC & RAMPS W/ PARTIAL CLOVERLEAF CONFIG. NW OF I-215 WORK INCL ADD OF NB AUX LN.LOCAL ST WORK TO INCL WIDENING OF BARTON RD, REMOVAL OF LA CROSSE AVE. B/W VIVENDA AVE & BARTON RD, RPLCMT W/ NEW LOCAL RD, IMPRVMTS TO BARTON RD & MICHIGAN WAY/VIVENDA AVE INTERSEC & REALIGNMT OF COMMERCE WY (Toll Credits used to match DEMO: ENG & ROW)

08-SBd-215-PM 0.58/1.66
I-215/Barton Road Interchange Improvements
0800000282 (08-0J0700)
400.146 / 075.600
March 2014

PROJECT REPORT

On Interstate Route 215 in City of Grand Terrace
from 0.73 miles south of Barton Road to 0.35 miles north of Barton Road

I have reviewed the right-of-way information contained in this Project Report and the R/W Data Sheet attached hereto, and have found the data to be complete, current, and accurate:

Robert So
DEPUTY DISTRICT DIRECTOR
RIGHT OF WAY

APPROVAL RECOMMENDED:

for Joseph Meraz
PROJECT MANAGER

CONCURRED BY:

for David Bricker
DEPUTY DISTRICT DIRECTOR,
ENVIRONMENTAL PLANNING

CONCURRED BY:

for Christy Connors
DEPUTY DISTRICT DIRECTOR, DESIGN

APPROVED:

for Basem Muallem
DISTRICT DIRECTOR

3/5/14
DATE

This Project Report has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

REGISTERED PROFESSIONAL ENGINEER
GREGORY W. HEFTER
No. 46655
Exp. 06/30/15
CIVIL
STATE OF CALIFORNIA

2-27-14

GREGORY HEFTER
REGISTERED CIVIL ENGINEER
AECOM

DATE

Concurred by:

3/5/14

Mahmuda Akhter
ACTING SENIOR TRANSPORTATION ENGINEER
CALTRANS DISTRICT 8 - DESIGN J OVERSIGHT

DATE

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1. INTRODUCTION

The San Bernardino Associated Governments (SANBAG), in cooperation with the California Department of Transportation (Caltrans), the City of Grand Terrace, and the City of Colton, proposes to improve the Interstate 215 (I-215)/Barton Road interchange (Bridge No. 54-0528, PM 1.31).

This Project Report (PR) is prepared to address the needs of the interchange improvements. The project proposes to implement roadway improvements consistent with the circulation element of the City of Grand Terrace General Plan, to implement improvements that will enhance traffic operations, and to reduce existing traffic congestion on Barton Road, specifically at the ramp intersections.

The proposed project would include the following improvements:

- Replacement of the existing Barton Road Overcrossing (Bridge No. 54-0528)
- Reconstruction/Widening of Barton Road
- Realignment of the existing entrance and exit ramps to enhance turning maneuverability and storage capacity
- Roadway Improvements on local streets
- Traffic signal modifications
- Roundabout at intersection of Barton Road/southbound ramps/La Crosse Avenue.

On Barton Road, the project construction limits extend from 0.3 miles to 0.4 miles west and east of the I-215 centerline, respectively. The project construction limits on I-215 begin at 0.73 miles and end at 0.35 miles south and north of Barton Road centerline, respectively.

As the owner/operator of the State Highway System (SHS), Caltrans has statutory obligation to maintain and operate the SHS, and is the California Environmental Quality Act (CEQA) Lead Agency for all improvement projects on the SHS.

Section 6005(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), P.L. 109-59, codified as Section 327 of amended Chapter 3 of Title 23, United States Code (23 U.S.C. 327), established a Surface Transportation Project Delivery Pilot Program that allowed the Secretary of the United States Department of Transportation (USDOT) to assign, and a State to assume, the USDOT Secretary's responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.), and all or part of the USDOT Secretary's responsibilities for environmental review, consultation, or other action required under any Federal environmental law with respect to one or more highway projects within the State. In conjunction with implementation of Section 6005 of SAFETEA-LU, a Section 6005 Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans was prepared, which became effective on July 1, 2007.

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007 and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6th, 2012, amended 23 USC 327 to establish a revised and permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a memorandum of understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012 and terminates eighteen months from the effective date of FHWA regulations developed to clarify amendments to 23 USC 327 or on January 1, 2017.

The NEPA Assignment MOU incorporates by reference the terms and conditions of the Pilot Program MOU. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the United States

Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

Caltrans is the lead agency in conjunction with completion of all NEPA compliance requirements and associated documentation for this project

Caltrans has determined for this project that the appropriate environmental documentation for CEQA compliance is an Initial Study (IS) and for NEPA compliance an Environmental Assessment (EA). Caltrans will adopt a Negative Declaration (ND) for the IS and a Finding of No Significant Impact (FONSI) for the EA.

The project has been assigned Project Development Processing Category of 3 because it requires new right of way and a superseding freeway agreement. A signed Category Determination Letter is attached herewith as Attachment I. The program code is 400.146 for SANBAG funding for Measure I and 075.600 from the State Transportation Improvement Program (STIP).

Below is a summary of the estimated project cost for the identified Preferred Alternative, as the project nears completion of the Project Approval/Environmental Document (PA/ED) phase:

CONSTRUCTION COST:	**Modified Alternative 7 (Preferred Alternative)**
Roadway	$26,140,000
Structures	$9,818,000
Right of way	$18,617,000
Total Project Capital Outlay:	**$54,575,000**
SUPPORT COST:	
PS&E	$3,596,000
Construction Management	$4,315,000
TOTAL PROJECT COST:	**$62,486,000**

The cost estimate includes $3,250,000 for landscaping construction and support costs. Landscaping construction will be a separate contract.

The project is scheduled to begin construction in mid-2016. The opening year of the project is 2018. Traffic analyses are based on an opening year of 2016, but with a current opening year of 2018, traffic volumes were reviewed and, due to a decrease in volumes, determined to be appropriate for a 2018 opening year (see Attachment O).

2. RECOMMENDATION

This Project Report recommends that the project be approved using the Preferred Alternative, Modified Alternative 7, and that the project proceed to the plans, specifications and estimate phase.

The affected local agencies have been consulted with respect to the recommended plan, the identified Preferred Alternative, Modified Alternative 7. Their views have been considered and they are in general accord with the plan as presented.

3. BACKGROUND

3.1 Project History

A Project Study Report (Project Development Support) [PSR (PDS), refer to Attachment B] was initiated in response to the economic, industrial, and population growth, which has led to a significant increase in the traffic demand on Barton Road within the vicinity of the project. The PSR (PDS), which was approved on April 3, 2007 by Caltrans District 8, identified the need of improving the I-215/Barton Road interchange to be essential.

This PR carries the same scope as the PSR (PDS). This report documents the project development efforts expanded to focus on the process selecting the Preferred Alternative, Modified Alternative 7 (refer to Attachment C).

There was one no-build alternative and four build alternatives presented in the approved PSR (PDS). It was determined by the Project Development Team (PDT) that the PSR build alternatives were not feasible due to the impact to Grand Terrace Elementary School in the northeast quadrant of the interchange. Four more build alternatives (a new Alternative 3 that removed the directional entrance ramp proposed in the PSR (PDS) iteration of Alternatives 3 and 5, a new Alternative 5 that replaced the iteration of Alternative 5 identified in the PSR(PDS), a new Alternative 6 and a new Alternative 7), were subsequently developed and further examined after the start of the PA/ED phase. The new iteration of Alternative 5 developed after the start of PA/ED was later dropped from further consideration and the new Alternative 7 was also later dropped from further consideration, replaced with Modified Alternative 7, prior to the approval and circulation of the Draft Initial Study with Proposed Negative Declaration/Environmental Assessment (Draft Environmental Document).

3.2 Community Interaction

A Project Development Team (PDT)—including representatives from the City of Grand Terrace, Caltrans, and SANBAG—was established to ensure collaborative communication among the stakeholders. The representatives have actively participated in conjunction with the development, progress, and approval of engineering and environmental studies, as well as the public outreach efforts for the project through the completion of the PA/ED phase of this project.

To date, there has been limited negative feedback from the local community in response to this project. The feedback that was received generally centered on the right-in/right-out proposal at the Barton Road/La Crosse Avenue intersection in Alternative 7. Alternative 7 was modified to include a roundabout intersection of the I-215 southbound ramps with Barton Road, which would provide full access to La Crosse Avenue. Public Feedback regarding the project since the development of Modified Alternative 7 has been predominantly supportive. Modified Alternative 7 in particular, and the project in general has received only limited negative feedback. Some property owners have approached the City of Grand Terrace and City of Colton and have had discussions with them regarding the proposed project and its impacts to potential access and right of way. There have been no contacts from special interest groups.

The public review and comment period for the Draft Environmental Document was well advertised, and occurred between November 27, 2013 and December 30, 2013. An Open Forum Public Hearing was held on December 12, 2013, to provide an opportunity for attendees to ask questions, raise concerns, and provide formal comments on the project.

3.3 Existing Facility

I-215 is a major north-south freeway facility that begins at the southerly junction of Interstate 15 (I-15) in the city of Murrieta in Riverside County, and terminates at the northerly junction with I-15, near Devore in San Bernardino County. The entire route varies from three to four lanes in each direction.

I-215 provides interregional mobility within the cities in both the counties of San Bernardino and Riverside. I-215 is functionally classified as a principal arterial and an extension of a rural Principal Arterial into urban areas. The entire route is included in the State Interregional Road System and is further classified as a "High Emphasis" and "Gateway" route. The entire length of I-215 within District 8 is included in the National Highway System. I-215 is part of the Federal Surface Transportation Assistance Act (STAA) "National Network" route for oversized trucks.

The portion of the I-215 corridor within the project limits is a six-lane freeway with a paved median. The I-215/Iowa Avenue interchange (Modified Type L-8, Bridge No. 54-0527, PM 0.40) is located approximately 0.9 miles to the south, and the I-215/Washington Street interchange (Type L-6/L-8, Bridge No. 54-0530, PM 2.69) is approximately 1.6 miles to the north.

Barton Road is an east-west primary arterial in Grand Terrace and San Bernardino County. It extends from La Cadena Drive in the City of Colton west of the freeway and continues as Brookside Avenue east of San Mateo Street in the City of Redlands. Barton Road is a two-lane roadway with varying curb-to-curb width west of I-215. On the east, it is a four-lane facility that has a 72-foot curb-to-curb width with turn lanes at various intersections. Within the project limits, there are several intersections:

- Grand Terrace Road (unsignalized T-intersection)
- Southbound Ramps and La Crosse Avenue Intersection (signalized)
- Northbound Ramps Intersection (signalized)
- Michigan Avenue Intersection (signalized T-intersection)
- Vivienda Avenue Intersection (unsignalized T-intersection)

The existing I-215/Barton Road interchange is a compact diamond (Type L-1) interchange with a single-lane entrance and exit ramps. Both the exit ramps expand to two lanes at the intersection to accommodate turning traffic. The existing northbound ramp intersection and southbound ramp intersection are spaced approximately 350 feet apart. The existing overcrossing carries a single lane in each direction with back-to-back left turn pockets for the entrance ramps.

Existing Structures

There are four structures within the project limits:

- Highgrove Underpass (PM 0.60, Bridge Number 54-0518) was constructed in 1959. The bridge was constructed as a series of four simple spans and carries two Burlington Northern Santa Fe (BNSF) tracks. Each span consists of two steel through-plate girders constructed of steel plates and angle sections. The posted vertical clearance is 15'-2". The structure will be replaced as part of the Bi-County HOV Lane Gap Closure project (EA 08-0M940). The new structure is designed to accommodate the I-215/Barton Road interchange project.

- Grand Terrace Underpass (PM 0.80, Bridge Number 54-0519) was constructed in 1959. The bridge was constructed as a series of four simple spans, and carries one Union Pacific Railroad (UPRR) track. Each span consists of two steel through-plate girders constructed of steel plates and angle sections. The posted vertical clearance is 14'-9". The structure will be removed as part of the Bi-County HOV Lane Gap Closure project (EA 08-0M940).

- Barton Road Overcrossing (PM 1.31, Bridge Number 54-0528) is a four-span CIP conventionally reinforced concrete T-girder superstructure constructed in 1959. It carries a single lane in each direction with a reversing left-turn lane. A Type 26R concrete barrier provides a sidewalk along the north side of the overcrossing and a Type 7 chain link fence lines both the north and south edges of the structure. The posted vertical clearance is 14'-6". The structure will be replaced by the I-215/Barton Road interchange project.

- Newport Avenue Overcrossing (PM 1.78, Bridge Number 54-0529) is a four-span CIP conventionally reinforced concrete T-girder superstructure constructed in 1959. It carries a single lane in eastbound and westbound directions with a five-foot sidewalk on the southern edge and a two-foot sidewalk on the northern edge. Type 25 concrete barriers line both edges of the bridge. The posted vertical clearance is 14'-7". A separate stand-alone State Highway Operation and Protection Program (SHOPP) project was developed through completion of the Project Approval & Environmental Document phase to replace this overcrossing with a structure providing higher clearance over I-215, however, subsequently the replacement of the Newport Avenue Overcrossing was incorporated into part of the I-215 Bi-County HOV Lane Gap Closure Project (EA 08-0M9404, PN 0800000506), currently under construction. The Newport Avenue Overcrossing has already been removed, and it is planned to be re-opened in mid-2014. The new structure has been designed to accommodate the proposed I-215/Barton Road IC Improvement Project.

4. PURPOSE AND NEED

4.1 Problem, Deficiencies, Justification

Purpose

The purpose of the proposed project is to improve the operation, increase the capacity, and reduce the existing and future congestion at the I-215/Barton Road interchange, and improve access to facilities served by the interchange.

Need

Based on traffic projections and the existing and planned land uses in the vicinity, the facility is forecast to degrade to level of service (LOS) F (breakdown condition) by 2040 without improvements.

Capacity and Transportation Demand. The study area intersections currently operate at LOS B or C during the a.m. and p.m. peak hours. Without improvements, the Barton Road/Grand Terrace Road intersection would operate at LOS F during the a.m. and p.m. peak hour by 2016. Because of the projected demand, without improvements, by 2040 all seven study area intersections would operate at LOS F during both the a.m. and p.m. peak hours, with the exception of Barton Road/La Cadena Drive during the a.m. peak hour, which would operate at LOS C. Traffic projections for 2040 indicate that the peak-hour volumes on I-215 will double in most segments. The 2009 Barton Road interchange ramp volumes are forecast to double by 2040 as well. Additional capacity is needed to accommodate projected traffic volumes and to improve LOS at the study area intersections.

Roadway Deficiencies. The existing I-215 southbound exit ramp at Barton Road is nonstandard because it intersects with a local street (La Crosse Avenue) before reaching Barton Road (per *Caltrans Highway Design Manual (6th Edition)* Index 504.8, access rights shall be acquired along interchange ramps to their junction with the nearest public road). In addition, the left-turn lane on westbound Barton Road to the I-215 southbound on-ramp does not have sufficient vehicle capacity during the a.m. and p.m. peak hours. As a result, although the Barton Road/Southbound ramps intersection currently operates at LOS B and C in the a.m. and p.m. peak hours, respectively, because turning movement delays are averaged to calculate LOS, delays at this intersection are excessive due to the long queue of vehicles waiting to turn left and also blocking the through lane. According to calculations for 2016, the a.m. peak hour queue length would be more than double (4 times existing capacity) and would increase even more in 2040 without interchange improvements. Additional turn-pocket capacity is needed in order to reduce excessive delays at the interchange.

Social Demand and Economic Development. The I-215/Barton Road interchange is the primary regional access in the City of Grand Terrace. It also serves the southwestern portion of the City of Colton and provides direct access to the City of Loma Linda. The build-out of the area in accordance with the City of

Grand Terrace General Plan and the Barton Road Specific Plan will result in increased traffic congestion on the freeway and the local street networks leading to the interchange. Reconstruction of the interchange is needed to relieve additional congestion.

4.2 Regional and System Planning

4.2.1 Identify System

The proposed interchange is located on I-215, PM 1.31. I-215, which is part of the State Interregional Road System (IRRS), serves as a major north-south freeway facility that links counties of Riverside and San Bernardino from its southerly junction with I-15 in Murrieta in Riverside County to the northerly junction with the I-15 near Devore in San Bernardino County.

4.2.2 State Planning

A District System Management Plan, dated September 2012, designates the ultimate I-215 as a 10-lane freeway with eight mixed-flow lanes and two high-occupancy-vehicle (HOV) lanes. The District's Division of Planning and Local Assistance is currently developing an updated comprehensive corridor plan.

SANBAG, in cooperation with the RCTC, is planning to improve I-215 that will enhance mobility in the Inland Empire. The I-215 Bi-County Improvement Project encompasses 7.5 miles of corridor widening that extends from south of the SR-60/SR-91/I-215 interchange in the City of Riverside to Orange Show Road in the City of San Bernardino. The widening would require reconstruction of a few local street interchanges within the project limits. The affected interchanges include Columbia Avenue interchange, Center Street interchange, Iowa Avenue interchange, Barton Road interchange, Washington Street interchange, I-215/I-10 interchange, and Orange Show Road interchange. Several other structures, which include Newport Avenue overcrossing, BNSF railroad underpass and UPRR underpass, would also be affected.

Due to budget constraints and to provide for an immediate need of connecting the HOV lanes in the City of San Bernardino on I-215 (recently completed EA 08-00717, RTP ID 713) and the HOV lane project under construction on SR-91 in the City of Riverside (EA 08-44840, RTP ID 010212), an HOV lane Gap Closure Project (EA 08-0M940, RTP ID 200614) has been initiated to complete in advance of the ultimate widening of I-215. The HOV Gap Closure Project will add an HOV lane in each direction with minimal outside widening, and will replace one railroad underpass and remove another. Final design documents are complete and the HOV Lane Gap Closure Project is now in the construction phase.

The Barton Road interchange was initially a part of the I-215 Bi-County Corridor Improvement Project; however, the City of Grand Terrace has seen the need to also accelerate the interchange improvement (relative to the I-215 Bi-County Corridor Improvement Project). The proposed overcrossing structure for the I-215/Barton Road interchange project is designed to accommodate the ultimate mainline section.

A Project Study Report-Project Development Study (PSR-PDS) was approved on March 6, 2013 for the I-215/Washington Street Interchange Improvement Project (EA 08-0M630). This PSR-PDS project proposes to replace the existing Washington Street overcrossing and reconfigure the interchange ramps.

The opening year for the HOV Lane Gap Closure project, the I-215/Barton Road interchange project and the I-215/Washington Street interchange project are 2015, 2018 and 2020, respectively.

4.2.3 Regional Planning

The I-215/Barton Road interchange project is included in the SCAG's 2013 Federal Transportation Improvement Program (FTIP), ID SBD31850 with the description being " *IN GRAND TERRACE @ I-215 BARTON RD I/C RECONSTRUCT OC & RAMPS W/PARTIAL CLOVERLEAF CONFIG. NW OF I-215 WORK INCL ADD OF NB AUX LN LOCAL ST WORK TO INCL WIDENING OF BARTON RD, REMOVAL OF LA CROSSE AVE. BETWN VIVIENDA AVE & BARTON RD, REPLACEMT W/ NEW*

LOCAL RD, IMPROVEMTS TO BARTON RD & MICHIGAN WAY/VIVIENDA AVE INTERSECTION & REALIGNMT OF COMERCE WY".

4.2.4 Local Planning

The proposed improvements are consistent with the City of Grand Terrace General Plan and Barton Road Specific Plan, and with the City of Colton General Plan. These plans identify the needs of providing adequate transportation networks to accommodate the projected growth in the region.

The City of Grand Terrace General Plan Circulation Element (2010) includes goals and policies to improve transportation corridors, provide adequate infrastructure, maintain efficient traffic operations on City streets, work with Caltrans and SANBAG to find solutions for transportation problems in the I-215 corridor area, and support the City's bikeway network and other alternative modes of transportation.

In the City of Grand Terrace General Plan Circulation Element, Barton Road is defined as a Major Highway (100-ft right-of-way with a 72-ft improved section). As discussed in the Circulation Element: "Major Highways provide service to non-local through trips as well as limited local access. They often provide direct service to major commercial and industrial areas. Typically, Major Highways are characterized with four travel lanes, minimal curb cuts, and signalized intersections."

The City of Colton's General Plan Mobility Element was adopted on August 20, 2013. The Project is consistent with the applicable City of Colton General Plan Mobility Element goals and policies to provide an integrated and balanced multi-modal transportation network, provide appropriate access and adequate capacity at freeway interchanges, and coordinate with other jurisdictions and agencies on regional transportation projects.

There are several land development proposals and local street projects surrounding the project site in varying stages of progress. These include:

Project Name/Type	Location	Proposed Use/Description	Status
City of Grand Terrace			
Town Square Master Development Plan	South side of Barton Road between Michigan Street/Gage Canal	209,611 sf over 5 development units; commercial, retail, and restaurant/fast food uses	Development Unit 1 (65,737 sf) approved with 45,000 sf already constructed. Auto Zone is moving one lot east to the Town Square project. An application for a 7,842 sf building has been submitted to the City.
Barton Plaza	Northwest corner of Barton Road and Mount Vernon Avenue	40,000 sf commercial	10,000 sq ft building constructed in Phase 1. Phases 2 and 3 have not started.
Techno-dynamics	21910 Vivienda Avenue	Single-family residential, 3 lots	Project approved. Project is not moving forward.
Greystone Group	11830 Mount Vernon Avenue	Single-family residential, 35 units	Project approved and map recorded. No construction has started.
Karger Pico Tract	North Side of Pico Street, E/O Kingfisher Road	Single-family residential, 18 lots	Tentative tract map valid until 8/10/2016

Project Name/Type	Location	Proposed Use/Description	Status
SCE Office Building	22200 Newport Avenue (SCE Vista Substation)	12,257 sf office building	Approved by Planning Commission on 11/07/13.
Residential	12156 Preston Street	12 townhomes	Pending Planning Commission meeting for approval. Anticipate meeting before the end of 2013.
The West Barton Road Connection	West Barton Road Bridge across the UPRR	Connection will provide for the ultimate design width for Barton Road of a 100 ft right-of-way.	Reprogramming funding. Planned for completion by 2015.
City of Colton			
Pellisier Ranch Specific Plan	Pellisier Ranch Road	1,448 ac; 2,101 units residential, commercial, schools, parks	This plan has been suspended indefinitely.
La Cadena Bridge over Santa Ana River Bridge Replacement Project	La Cadena Drive at the Santa Ana River	Reconstruct bridge	Preliminary Engineering. Planned for completion by 2017.
Washington Street Extension to La Cadena Drive Project	On Washington Street	Street extension and bridge over BNSF Railway	Project Study Phase. Planned for completion by 2030.

The City of Grand Terrace has been an active member of the PDT and has provided input regarding future development in the project area. The City of Grand Terrace's Community Development Department has also reviewed development plans of properties located in the vicinity of the I-215 Barton Road interchange. These reviews have enabled PDT members to plan the project more accurately and to match the local planning efforts of the City with those of the state and federal freeway facility. Funding of the interchange project is not tied to local development.

The project is not a pre-condition contingency for other improvements. Traffic projections are based on the SCAG RTP model that was adjusted using results from Riverside County Transportation Analysis Model (RIVTAM).

4.2.5 Transit Operator Planning

The Project site and its vicinity are served by Omnitrans and the Riverside Transit Agency (RTA). Omnitrans and the RTA provide extensive fixed-route bus systems that include bus routes in the interchange area. Omnitrans Route 325, which starts at the corner of Barton Road and Michigan Avenue within the Project area, runs east along Barton Road, and connects Grand Terrace residents to locations such as the Grand Terrace Senior Center, Loma Linda Hospital, City Hall, and the VA Hospital. Omnitrans Route 19 connects to Route 325 near Washington Street and provides access to areas west of I-215, including the City of Colton and the Fontana Metrolink Station. RTA Route 14 connects downtown Riverside with Omnitrans Route 325 at Michigan Avenue and Center Street near the Highgrove Library. Bus routes located within the project improvements will be coordinated and incorporated into the staging during final design. Routes are expected to remain in service during construction.

Opportunities to enhance other transit related services include the installation of HOV preferential lanes at the entrance ramps and ramp metering. HOV preferential lanes are planned at the southbound entrance ramp but for the northbound entrance ramp of Modified Alternative 7. A fact sheet for the exception was prepared and approved by the Department. Ramp meters will be installed on each entrance ramp within the interchange.

4.3 Traffic Volumes and Operational Analysis

A *Traffic Forecast Volumes Report* (PB, December 2007) for the I-215 Bi-County Improvement Project was approved by Caltrans in 2008. The report presented future traffic demand for the corridor in year 2040. Long-term traffic growth rate in the corridor (growth from year 2000 to 2030) was projected using the I-215 corridor forecast model. A 14% growth rate was used to extrapolate the 2040 volumes. A *Traffic Operation Analysis* (Iteris, July 2009 and revised on December 2011, and approved in January 2012) was subsequently prepared to analyze the traffic impacts of the proposed I-215/Barton Road Interchange Project by utilizing the 2040 forecast volumes. 2009 traffic counts were obtained and the 2016 volumes were linearly interpolated between the existing volumes and the forecast 2040 volumes. Detailed methodologies and analysis results can be found in the traffic reports.

As stated above, the existing year traffic counts utilized in the approved TOA were collected in 2009. In 2012, the 2009 traffic counts were reevaluated since three years had elapsed from the 2009 traffic counts. New traffic counts were conducted in June, 2012 and these counts revealed that the peak period movements decreased between 2009 and 2012 for a majority of the intersection movements. The reductions were modest for movements to and from the I-215 freeway ramps and were more pronounced for movements along Barton Road. Discussions with City of Grand Terrace staff revealed that decreases in the volumes along Barton Road were attributable to several factors including:

1) The major economic recession that began in late-2008 and lasted into 2012 affected traffic patterns. The recession resulted in reduced traffic volumes due to fewer motorists traveling to and from work. Also, trips to and from businesses in and around the project area decreased as consumer spending slowed through the recession. The commercial property located on the northwest corner of Barton Road/La Crosse Avenue has many vacant suites throughout the center providing further indication of the recession's effects. Other sites in the vicinity of the interchange are also now vacant.

2) Stater Bros Markets relocated from a large distribution center that was located southwest of the project site. The relocation reduced trips through the interchange area. The distribution center was subsequently taken over by Castle & Cook Cold Storage, and in July, 2012 Castle & Cooke was acquired by Lineage Logistics. Since the acquisition, traffic has increased according to City of Grand Terrace staff and volumes continue to increase as the new tenants expand their operations at the site.

3) The traffic counts in 2009 and 2012 were taken in different months of the year – the 2009 traffic counts were conducted in February whereas the 2012 traffic counts were taken in June. The 2009 counts were conducted during the school year and the 2012 counts were taken when school was not in session. Grand Terrace Elementary school is located west of I-215 and generates trips along Barton Road from both sides of I-215. With 710 students, the school generates trips that were not accounted for with the 2012 counts since the school year ends in May.

Levels of service values were recalculated using the 2012 counts to determine whether the lower values affected the Need & Purpose of the Project. The LOS values remained the same under either condition (i.e., using 2009 counts and 2012 counts) in all locations except for one, the intersection of I-215 Southbound Ramps and Barton Road. At this location the PM peak LOS changed from C to B for 2009 and 2012 respectively. This change in LOS is attributable to the fact that Stater Bros relocated from its major distribution center near interchange. The site was subsequently taken over by Castle & Cook Cold Storage, but in July, 2012 Castle & Cooke was acquired by Lineage Logistics. Since the acquisition, traffic has

increased markedly at the site according to City of Grand Terrace staff and this increase should push the volumes and the LOS back toward those of 2009 (see Attachment M).

Given the circumstances stated above, the 2009 traffic counts were determined to be adequate and appropriate for the project without adjustment. In July of 2013 Department (District 8) staff from the Traffic Operations and Traffic Forecasting branches approved the conclusion as stated in a memorandum dated July 16, 2012.

As discussed above, the *Traffic Operations Analysis* dated December 21, 2011 was approved for the Project in January 2012. A supplemental traffic operations analysis focusing on operational results of replacing the planned traffic signal at the southbound I-215 off-ramp intersection with Barton Road, with a roundabout, was initiated in Fall 2012. The analysis and conclusions were presented in a Memorandum on August 20, 2013 which was approved October 8, 2013. The analysis concluded that the inclusion of a roundabout at the southbound ramps intersection would result in a LOS of D or better at each of the intersections along Barton Road between Grand Terrace Road and Commerce Way. In addition, it was also noted that the queue lengths between the intersections would not exceed the distance between the intersections and therefore a roundabout would be an acceptable alternative to the signal.

A *Traffic Volume Comparison Memorandum* (AECOM, November 2013), prepared to address whether previously approved 2016 traffic volumes (in conjunction with when 2016 was the planned Opening Year for the Project) are appropriate for use as the basis for traffic analysis for the Project's revised planned opening year changing to 2018, concluded:

> Based on the traffic count comparison conducted in June of 2012, traffic volumes were slightly lower than those collected in 2009. The decrease in the existing volumes would be offset by the Project's revised opening year of 2018. Therefore, the "opening" year 2016 volumes in the Traffic Operations Analysis are appropriate to use as the updated 2018 opening year volumes.

The *Traffic Volume Comparison Memorandum* (AECOM, November 2013) received concurrence on November 22, 2013 (see Attachment O).

4.3.1 Current and Forecasted Traffic

Table 1 summarizes the design designation information for I-215 and for Barton Road.

Table 1: Design Designations

Traffic Info	**I-215**	**Barton Road**
2009 AADT =	140,500	---
2016 ADT =	194,400	22,438
2040 ADT =	332,800	39,625
DHV =	21,530 (PM)	3,170 (PM)
D =	53% (PM)	57% (PM)
V =	75 mph	45 mph
T =	7% (AM)	7% (AM)

AADT=annual average daily traffic; ADT=average daily traffic; DHV=two-way design hourly volume; D=percentage of the DHV in the direction of heavier flow; V=design speed; T=truck traffic volume

Table 2 shows the a.m. and p.m. peak hour traffic volumes for the freeway mainline and the interchange ramps for 2009, 2016, and 2040. Truck percentages of 7% in the AM peak hour and 4% in the PM peak

hour were used for the intersection level of service analysis.

Table 2: Mainline Segment and Ramp Volumes for 2009, 2016 and 2040

Location	2009		2016*		2040	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Northbound						
Iowa Avenue Exit Ramp	241	289	349	380	720	692
Iowa Avenue Entrance Ramp	1004	909	1074	1100	1312	1754
Freeway Segment from Iowa Avenue Entrance Ramp to Barton Road Exit Ramp	4876	5685	5987	6979	9798	11416
Barton Road Exit Ramp	365	414	442	553	706	935
Barton Road Entrance Ramp	370	406	544	549	1095	922
Freeway Segment from Barton Road Entrance Ramp to Washington St Exit Ramp	4881	5677	6089	6975	10188	11402
Mt Vernon Ave/Washington Street Exit Ramp	847	826	1047	954	1731	1391
Mt Vernon Avenue/Washington Street Entrance Ramp	663	653	670	655	1678	1338
Washington Street Entrance Ramp	761	491	811	533	**	**
Southbound						
Freeway Segment from Iowa Avenue Exit Ramp to Barton Road Entrance Ramp	6198	5346	7144	6487	10207	10122
La Cadena Drive Entrance Ramp	354	285	531	438	1136	964
La Cadena Drive Exit Ramp	188	291	410	583	1169	1582
Freeway from Barton Road Exit Ramp to Washington Street Entrance Ramp	6069	5276	6926	6372	9863	10128
Barton Road Entrance Ramp	462	431	639	618	1074	883
Barton Road Exit Ramp	333	361	421	503	703	890
Mt Vernon Avenue/Washington Street Entrance Ramp	613	973	686	1077	935	1432
Mt Vernon Ave/Washington Street Exit Ramp	1018	1316	1062	1415	1212	1755

** As noted in the discussion included on page 10 of this Project Report, a Traffic Volume Comparison Memorandum (November 2013), prepared to address whether previously approved 2016 traffic volumes (in conjunction with when 2016 was the planned Opening Year for the Project) are appropriate for use as the basis for traffic analysis for the Project's revised planned opening year changing to 2018, concluded:*

> Based on the traffic count comparison conducted in June of 2012, traffic volumes were slightly lower than those collected in 2009. The decrease in the existing volumes would be offset by the Project's revised opening year of 2018. Therefore, the "opening" year 2016 volumes in the Traffic Operations Analysis are appropriate to use as the updated 2018 opening year volumes.

*** this on-ramp will be removed as part of the I-215/Washington Street interchange improvement project.*

4.3.2 Intersection Level of Service (LOS) Analysis

Table 3 shows the LOS and delay at the intersections during the a.m. and p.m. peak hours for 2009.

Table 3: Intersection Levels of Service for 2009

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay (Sec)	V/C	LOS	Delay (Sec)	V/C
Barton Road/La Cadena Drive	B	14.0	0.35	B	16.0	0.53
Barton Road/Grand Terrace Road*	B	14.8	-	C	15.8	-
Barton Road/La Crosse Avenue*	B	13.1	-	B	14.5	-
Barton Road/ I-215 SB Ramps	B	15.1	0.66	C	25.0	0.82
Barton Road/I-215 NB Ramps	B	12.9	0.52	B	11.8	0.52
Barton Road/Michigan Street	B	12.5	0.52	B	10.0	0.50
Barton Road/Vivienda Avenue*	B	14.0	-	B	14.5	-

** Delay for stop-controlled approach; V/C not applicable*
LOS = Level of Service
Delay = Average control delay in seconds
V/C = Volume-to-Capacity Ratio

Table 4 summarizes the analysis results without the project for 2016.

Table 4: Intersection Levels of Service 2016* without PROJECT

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay (Sec)	V/C	LOS	Delay (Sec)	V/C
Barton Road/La Cadena Drive	B	11.4	0.52	C	24.3	0.86
Barton Road/Grand Terrace Road**	**F**	69.1	-	**F**	54.4	-
Barton Road/La Crosse Avenue**	B	13.9	-	C	18.7	-
Barton Road/ I-215 SB Ramps	C	26.8	0.83	**F**	98.9	1.02
Barton Road/I-215 NB Ramps	B	15.1	0.65	C	28.4	0.86
Barton Road/Michigan Street	B	14.6	0.59	B	17.2	0.69
Barton Road/Vivienda Avenue**	C	19.1	-	C	18.0	-
Barton Road/Terrace Avenue**	C	16.5	-	C	17.2	-

***** *See note included at bottom of Table 2 above, on page 11.*

*** Delay for stop-controlled approach; V/C not applicable*
LOS = Level of Service
Delay = Average control delay in seconds
V/C = Volume-to-Capacity Ratio

Table 5 summarizes the results for 2040 assuming there is no improvement. All the intersections would operate at an unacceptable level of service due to the increased traffic demand with the exception of Barton Road//La Cadena Drive intersection in the AM peak hour.

Table 5: Intersection Levels of Service 2040 without PROJECT

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay (Sec)	V/C	LOS	Delay (Sec)	V/C
Barton Road/La Cadena Drive	C	31.4	0.94	**F**	169.3	1.51
Barton Road/Grand Terrace Road*	**F**	>500	-	**F**	>500	-
Barton Road/La Crosse Avenue*	**F**	223.4	-	**F**	>500	-
Barton Road/ I-215 SB Ramps	**F**	184.8	1.40	**F**	290.6	1.70
Barton Road/I-215 NB Ramps	**F**	99.7	1.31	**F**	251.3	1.66
Barton Road/Michigan Street	**F**	101.7	1.20	**F**	135.7	1.32
Barton Road/Vivienda Avenue*	**F**	434.9	-	**F**	>500	-

** Delay for stop-controlled approach; V/C not applicable*
LOS = Level of Service
Delay = Average control delay in seconds
V/C = Volume-to-Capacity Ratio

4.4 Collision Analysis

Traffic Accident Surveillance and Analysis System (TASAS)-Transportation System Network (TSN) data were provided by Caltrans District 8. The data includes accidents that occurred on the I-215 freeway from PM 0.58 to PM 1.66 and the interchange ramp areas over a period of three years (10/01/08 to 09/30/11).

Table 6: TASAS Accident Rate from 10/01/08 to 09/30/11

Location	Actual			Statewide Average for Similar Facilities		
	Fatal	F+I*	Total	Fatal	F+I*	Total
Northbound						
Barton Exit Ramp	0.000	0.37	1.28	0.003	0.35	1.01
Barton Entrance Ramp	0.000	0.15	0.29	0.002	0.22	0.63
Mainline	0.011	0.23	0.70	0.005	0.33	1.06
Southbound						
Barton Rd Exit Ramp	0.000	0.00	0.00	0.001	0.17	0.54
Barton Rd Entrance Ramp	0.000	0.00	0.55	0.002	0.22	0.75
Mainline	0.000	0.26	0.88	0.005	0.33	1.06

** F+I = Fatal+Injury*
Accident rates for mainline expressed as: number of accidents/million vehicle miles
Accident rates for ramps expressed as: number of accidents/million vehicles

The accident rate data for the I-215 Barton Road interchange and I-215 near the interchange indicate that the total accident rate is lower than the statewide average rate at each ramp with one exception, the northbound exit ramp. At this location the total accident rate per million vehicle miles is 1.28 as compared to a statewide average of 1.01 and the fatal plus injury (F+I) accident rate is 0.37 as compared to a statewide

average of 0.35 during the three year period between 2008 and 2011. The accident data reveal that of the total accidents 57.1 percent were 'hit objects', 28.6 percent were 'rear ends', and 14.3 percent were 'not stated'. Further, the primary collision factors were 42.9 percent as 'driving under the influence', 28.6 percent as 'speeding', 14.3 percent as 'improper turn', and 14.3 percent as 'other violations'. Given the variety of contributing factors, it does not appear that access from the I-215 has been a factor in the accident rate and there is no concentration of a primary collision factor on the ramp. Modified Alternative 7 would provide a longer tangent as vehicles exit the freeway which would provide more distance for motorists to reduce speed before entering a curve or nearing the intersection.

Accident data for the I-215 northbound mainline show that of the total accidents 61.3 percent were 'rear ends', 22.6 percent were 'sideswipes', and 14.5 percent were 'hit object'. The primary collision factors were 54.8 percent 'speeding', 19.4 percent 'other violations', 12.9 percent 'improper turn', 6.5 percent 'influence alcohol', and 3.2 percent 'following too close'.

Accident data for the I-215 southbound mainline show that 59.0 percent of the total accidents were 'rear ends', 23.1 percent were 'hit object', 10.3 percent were sideswipes, 3.8 percent were 'overturn', 2.6 percent were 'broadside', and 1.3 percent were 'other'. The primary collision factors were 47.4 percent 'speeding', 25.6 percent 'other violations', 15.4 percent 'improper turn', 7.7 percent 'influence alcohol', and 3.8 percent 'following too close'. Given the variety of contributing factors, it does not appear that the improvements being considered for this project have been a factor in the accident rate or the primary collision factors on either direction of the mainline.

It is noted that no accident data for Barton Road is available either from the City of Grand Terrace Public Works or the San Bernardino County Sheriff's Department. The increased capacity of the interchange and Barton Road, in particular at the ramp intersections, is expected to relieve the existing congestion, thus reducing congestion related accidents. The features in this document are not anticipated to have an adverse effect on the safety of this facility.

5. ALTERNATIVES

5.1 Alternative 1 (No-Build)

The no-build alternative proposes to retain its existing configuration. This alternative would not accommodate the anticipated growth in the area or alleviate traffic congestion and is therefore not selected as the preferred alternative. The interchange is currently operating at an acceptable LOS but traffic congestion would worsen with the LOS becoming unacceptable by 2016 and continuing to worsen through 2040.

5.2 Alternative 3 (Type L-7, Partial Cloverleaf Interchange)

Alternative 3 is not selected as the preferred alternative due to the large right-of-way impacts imposed on the City and the high cost of the project. This alternative would also have a large impact to businesses within the City of Grand Terrace and would result in a high number of business relocations along Barton Road and other areas within the project limits.

Alternative 3 would provide a conventional partial cloverleaf interchange with the northbound entrance- and exit-ramps on the southern side of Barton Road and the southbound on and off-ramps on the northern side. This alternative would widen Barton Road from one through lane to two through lanes in each direction and add turning lanes onto the southbound and northbound loop on-ramps. The existing overcrossing would be replaced with a new structure with four through lanes and right-turn lanes at the on-ramps. This alternative also includes the following improvements:

- The existing ramps would be removed.

- The Barton Road Overcrossing would be reconstructed.
- New northbound and southbound entrance- and exit-ramps would be constructed.
- Barton Road would be widened to four through lanes approximately between Grand Terrace Road and Vivienda Avenue.
- A new two-lane road between La Crosse Avenue and Grand Terrace Road would be constructed adjacent to Vivienda Avenue.
- The new southbound exit-ramp would make a connection at Barton Road with one right-turn lane, one shared right-/left-turn lane, and one left-turn lane.
- The new southbound loop entrance-ramp would provide three lanes at Barton Road. This would accommodate the dual left-turn lanes on eastbound Barton Road and the right-turn lane on westbound Barton Road.
- The new northbound exit-ramp would provide three lanes (two right-turn lanes and one left-turn lane) at the Barton Road intersection.
- The new northbound loop entrance-ramp would provide three lanes at the Barton Road intersection. This would accommodate the dual left-turn lanes on westbound Barton Road and the right-turn lane on eastbound Barton Road.
- Most of La Crosse Avenue north of Barton road would be removed and all of La Crosse Avenue south of Barton Road would be removed.
- The intersection of Michigan Avenue at Barton Road would be eliminated; Michigan Avenue would form a T-intersection with Commerce Way.
- Drainage facilities would be modified consistent with other Project improvements. The concrete channel parallel to the existing northbound off-ramp would be enclosed.
- The segment of Vivienda Avenue west of I-215 would be converted into a cul-de-sac.
- Grand Terrace Road would be extended southwest of Barton Road to tie into East De Berry Street.
- Grand Terrace Road and the Grand Terrace Road/Barton Road intersection would be realigned to allow adequate distance between the ramps and the local intersection.
- A portion of the I-215 Bi-County HOV Lane Gap Closure Project sound barrier in the northwest quadrant would be modified to accommodate the new southbound exit-ramp.
- Standard sidewalks and a Class II bicycle lane would be provided on both sides of Barton Road within the Project limits.
- Bioswales would be constructed to treat storm water runoff.
- New landscaping would be provided consistent with the I-215 Bi-County Aesthetic Concept.
- Utilities would be relocated or protected in-place during construction.
- Traffic signal modifications would be made at the Barton Road/Grand Terrace Road/De Berry Street, I-215 northbound ramps/Barton Road, I-215 southbound ramps/Barton Road, and Commerce Way/Vivienda Avenue/Barton Road intersections.

5.3 Alternative 6 (Type L-6/L-7 Interchange)

Alternative 6 is not selected as the preferred alternative due to several geometric considerations. Access to and from La Crosse Avenue south of Barton Road would be a right-in/right-out configuration which is heavily opposed by landowners along La Crosse Avenue and by the City. The inability to access the southbound I-215 ramps directly from La Crosse Avenue was expressed as one of the primary issues with

the configuration. Another issue with the alternative was the overall layout of the interchange with the northbound hook ramps placed far away from the southbound ramps requiring motorist to travel over City streets to reach the other ramps. Access to the northbound ramps would be via Commerce Way rather than Barton Road adding to the difficulty in navigating the area to and from the freeway.

Alternative 6 proposes a modified cloverleaf interchange with the southbound on- and off ramps directly connected to Barton Road; the northbound on- and off-ramps would be constructed to an extension of Commerce Way, which would be realigned to connect to Barton Road at the location of the existing Vivienda Avenue intersection to the east. Barton Road would be widened to two through lanes in each direction plus one left-turn and one right-turn lane. The existing overcrossing would be replaced with a new structure with four through lanes, right-turn lanes at the on-ramps, a median, and a left-turn lane to Vivienda Avenue. This alternative also includes the following improvements:

- The existing ramps would be removed.
- The Barton Road Overcrossing would be reconstructed.
- A bridge would be constructed over the Riverside Canal on the northbound exit-ramp to span the canal.
- New northbound and southbound entrance- and exit-ramps would be constructed.
- Barton Road would be widened to four through lanes approximately between Grand Terrace Road and Vivienda Avenue.
- A new two-lane road between La Crosse Avenue and Grand Terrace Road would be constructed adjacent to Vivienda Avenue.
- The new southbound loop entrance-ramp would provide two lanes at Barton Road. This would accommodate one left-turn lane on eastbound Barton Road and a right-turn lane on westbound Barton Road.
- The new southbound exit-ramp would make a new connection at Barton Road with one right-turn lane, one left-turn lane, and one shared right-/left-turn lane.
- The new northbound exit-ramp would tie in to Commerce Way and provide for dual left-turn lanes and a single right-turn lane.
- The new northbound hook entrance-ramp would be provided in the southeast quadrant. The access to the ramp would be through the proposed extension of the Commerce Way.
- Most of La Crosse Avenue north of Barton road would be removed and all of La Crosse Avenue south of Barton Road would be removed.
- La Crosse Avenue south of Barton Road would be reconfigured to a right-in/right-out layout at the Barton Road/La Crosse Avenue intersection.
- Commerce Way would be reconfigured to intersect with Barton Road at Vivienda Avenue.
- The intersection of Michigan Avenue at Barton Road would be eliminated; Michigan Avenue would form a T-intersection with Commerce Way.
- Drainage facilities would be modified consistent with other Project improvements.
- A portion of the I-215 Bi-County HOV Lane Gap Closure Project sound barrier in the northwest quadrant would be modified to accommodate the new southbound exit-ramp.
- Standard sidewalks and a Class II bicycle lane would be provided on both sides of Barton Road within the Project limits.
- Bioswales would be constructed to treat storm water runoff.
- New landscaping would be provided consistent with the I-215 Bi-County Aesthetic Concept.

- Utilities would be relocated or protected in-place during construction.
- Traffic signal modifications would be made at the Barton Road/Grand Terrace Road, I-215 northbound ramps/Commerce Way, I-215 southbound ramps/Barton Road and Commerce Way/Vivienda Avenue/Barton Road intersections.

5.4 Preferred Alternative - Modified Alternative 7 (mod. Type L-7/L-1 Interchange)

Modified Alternative 7 is selected as the Preferred Alternative. This alternative impacts right of way less than the other build alternatives and meets the need and purpose of the project. Also, full access to La Crosse Avenue south of Barton Road was viewed as an attractive feature of this alternative in comments received during the circulation period.

Modified Alternative 7 would provide a tight diamond configuration for the northbound ramps. The southbound ramps have a similar configuration to that proposed under Alternative 6, except with a roundabout at the southbound ramp intersection with Barton Road/La Crosse Avenue. The proposed roundabout would have two lanes in the east-west direction and one lane in the north-south direction. Barton Road would be widened to two through lanes in each direction plus one left- turn and one right-turn lane. The existing overcrossing would be replaced with a new structure with four through lanes and a left-turn lane to the northbound on-ramp. This alternative also includes the following improvements:

- The existing ramps would be removed.
- The Barton Road Overcrossing would be reconstructed.
- New northbound and southbound entrance- and exit-ramps would be constructed.
- Barton Road would be widened to four through lanes approximately between Grand Terrace Road and Vivienda Avenue.
- A new two-lane road between La Crosse Avenue and Grand Terrace Road would be constructed parallel to Vivienda Avenue.
- The new southbound entrance- and exit-ramps would intersect Barton Road and La Crosse Avenue south of Barton Road in a roundabout configuration with no traffic signals.
- The southbound exit-ramp would have a right-turn bypass lane onto westbound Barton Road.
- The new northbound exit-ramp would terminate at Barton Road with one left-turn lane, one shared through/right-turn lane, and one dedicated right-turn lane.
- The new northbound entrance-ramp would have two lanes at the Barton Road intersection. This would accommodate one left-turn lane on eastbound Barton Road and a right-turn lane on westbound Barton Road.
- The concrete channel parallel to the existing northbound off-ramp would be enclosed.
- Commerce Way would be reconfigured to intersect with Barton Road at Vivienda Avenue.
- The intersection of Michigan Avenue at Barton Road would be eliminated; Michigan Avenue would form a T-intersection with Commerce Way.
- A portion of the I-215 Bi-County HOV Lane Gap Closure Project sound barrier in the northwest quadrant would be modified to accommodate the new southbound off-ramp.
- Standard sidewalks and a Class II bicycle lane would be provided on both sides of Barton Road within the Project limits.
- Bioswales would be constructed to treat storm water runoff.
- New landscaping would be provided consistent with the I-215 Bi-County Aesthetic Concept.

- Utilities would be relocated or protected in-place during construction.
- Drainage facilities would be modified consistent with other Project improvements.
- Traffic signal modifications would be made at the Barton Road/Grand Terrace Road, I-215 northbound ramps/Barton Road, and Commerce Way/Vivienda Avenue/Barton Road intersections.

5.5 Analysis of Alternatives

5.5.1 Intersection Levels of Service

Table 7 through Table 12 summarizes the LOS at the intersections studied for the Project, for year 2016 and for year 2040, 2040 analyzed as the design horizon year. In comparison with Table 4 - without project condition (Alternative 1) for 2016 - it is evident that the proposed project will not only improve the operational efficiency at I-215/Barton Road interchange, it will also alleviate the congested conditions at the adjacent intersections and interchanges.

The intersections noted as 'does not exist' refer to existing intersections that will be eliminated by the given alternative. In addition, the intersection of Barton Road and La Crosse on the south side of Barton Road will be replaced during the life of the interchange under Alternatives 6 and Modified 7. This change is reflected in the traffic operations analysis and accounts for the incorporation of the I-215 Bi-County Widening Project in the future.

Table 7 and Table 8 show the intersection LOS for Alternative 3 for 2016 and 2040. The LOS is shown to be level "F" in 2040 at the Barton Road/La Cadena Drive intersection. For reference, the intersection is calculated to be better than LOS "F" until the year 2028.

Table 7: Intersection Levels of Service 2016* with PROJECT (Alternative 3)

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
Barton Road/La Cadena Drive	B	12.1	0.51	C	20.8	0.87
Barton Road/Grand Terrace Road	A	6.0	0.33	A	2.9	0.30
Barton Road/ La Crosse Avenue	Does not exist (eliminated)[1]			Does not exist (eliminated)[1]		
Barton Road/ I-215 SB Ramps	A	6.4	0.35	A	6.8	0.33
Barton Road/I-215 NB Ramps	A	6.7	0.38	A	8.9	0.46
Barton Road/Michigan Street	Does not exist (eliminated)[2]			Does not exist (eliminated)[2]		
Barton Road/Vivienda Avenue	B	15.2	0.52	B	13.9	0.51

LOS = Level of Service
Delay = Average control delay in seconds
V/C = Volume-to-Capacity Ratio

***** *See note included at bottom of Table 2 above, on page 11.*

[1] *This intersection is eliminated, only with Alternative 3. As noted in the discussion included on page 10 of this Project Report, a Traffic Volume Comparison Memorandum (November 2013), prepared to address whether previously approved 2016 traffic volumes (in conjunction with when 2016 was the planned Opening Year for the Project) are appropriate for use as the basis for traffic analysis for the Project's revised planned opening year changing to 2018, concluded, "…opening" year 2016 volumes in the Traffic Operations Analysis are appropriate to use as the updated 2018 opening year volumes." To confirm, the "Does Not Exist" condition would not occur until the project opened in 2018, and would only occur as referenced in this Table, if Alternative 3 were constructed. However, as discussed in Section 5.4 of this Project Report, Modified Alternative 7 has been identified as the Project Preferred Alternative, and accordingly, will be the basis for the Project's Design and Construction.*

[2] *This intersection is replaced by the new Commerce Way/Barton Road intersection. To confirm, as noted above, the "Does Not Exist" condition would not occur until the Project opened in 2018. As discussed in*

Section 5.4 of this Project Report, Modified Alterative 7 has been identified as the Project Preferred Alternative, and accordingly, will be the basis for the Project's Design and Construction. The Barton Road/Michigan Street intersection will be replaced by the new Commerce Way/Barton Road intersection when the Project opens in 2018.

Table 8: Intersection Levels of Service 2040 with PROJECT (Alternative 3)

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
Barton Road/La Cadena Drive	D	35.5	0.97	**F**	163.7	1.49
Barton Road/Grand Terrace Road	A	6.3	0.60	A	5.4	0.60
Barton Road/ La Crosse Avenue	Does not exist (eliminated)			Does not exist (eliminated)		
Barton Road/ I-215 SB Ramps	B	14.6	0.68	B	12.9	0.61
Barton Road/I-215 NB Ramps	A	9.5	0.71	B	13.7	0.83
Barton Road/Michigan Street	Does not exist (eliminated)			Does not exist (eliminated)		
Barton Road/Vivienda Avenue	D	45.7	0.91	D	38.8	0.90

LOS = Level of Service
Delay = Average control delay in seconds
V/C = Volume-to-Capacity Ratio

Table 9 and Table 10 show the intersection LOS for Alternative 6 for 2016 and 2040. The LOS is shown to be level "F" in 2040 at the Barton Road/La Cadena Drive intersection. For reference, the intersection is calculated to be better than LOS "F" until the year 2028.

Table 9: Intersection Levels of Service 2016* with PROJECT (Alternative 6)

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
Barton Road/La Cadena Drive	B	11.8	0.51	C	22.4	0.88
Barton Road/Grand Terrace Road	A	6.4	0.31	A	3.2	0.50
Barton Road/ La Crosse Avenue	Does not exist (eliminated)[1]			Does not exist (eliminated)[1]		
Barton Road/ I-215 SB Ramps/ La Crosse Avenue	B	14.1	0.39	C	21.2	0.39
Barton Road/I-215 NB Ramps	B	12.7	0.39	B	12.8	0.44
Barton Road/Michigan Street	Does not exist (eliminated)[2]			Does not exist (eliminated)[2]		
Barton Road/Vivienda Avenue	B	19.9	0.50	B	19.2	0.55
Barton Road/Terrace Avenue*	**C**	**18.9**	**-**	**C**	**20.9**	**-**

** Delay for stop-controlled approach; V/C not applicable*
LOS = Level of Service
Delay = Average control delay in seconds
V/C = Volume-to-Capacity Ratio

***** *See note included at bottom of Table 2 above, on page 11.*

[1] *This intersection would be modified such that only the southern segment of La Crosse Avenue would remain. As noted in the discussion included on page 10 of this Project Report, a Traffic Volume Comparison Memorandum (November 2013), prepared to address whether previously approved 2016 traffic volumes (in conjunction with when 2016 was the planned Opening Year for the Project) are appropriate for use as the basis for traffic analysis for the Project's revised planned opening year changing to 2018, concluded, "…opening" year 2016 volumes in the Traffic Operations Analysis are appropriate to use as the updated 2018 opening year volumes." To confirm, the "Does Not Exist" condition would not occur until the project opened in 2018, and would only occur as referenced in this Table, if Alternative 6 were constructed. However, as discussed in Section 5.4 of this Project Report, Modified Alterative 7 has been identified as the Project Preferred Alternative, and accordingly, will be the basis for the Project's Design and Construction.*

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