RIVERSIDE COUNTY TRANSPORTATION COMMISSION

MEETING AGENDA

TIME/DATE: **9:30 a.m. / Wednesday, May 8, 2019**

LOCATION: **BOARD ROOM**
County of Riverside Administrative Center
4080 Lemon Street, First Floor, Riverside

COMMISSIONERS

Chair – Chuck Washington
Vice Chair – Ben J. Benoit
Second Vice Chair – Jan Harnik

Kevin Jeffries, County of Riverside, District 1
Karen Spiegel, County of Riverside, District 2
Chuck Washington, County of Riverside, District 3
V. Manuel Perez, County of Riverside, District 4
Jeff Hewitt, County of Riverside, District 5
Art Welch / Daniela Andrade, City of Banning
Lloyd White / Julio Martinez, City of Beaumont
Joseph DeConinck / Johnny Rodriguez, City of Blythe
Larry Smith / Jim Hyatt, City of Calimesa
Randall Bonner / Jeremy Smith, City of Canyon Lake
Raymond Gregory / Mark Carnevale, City of Cathedral City
Steven Hernandez / Megan Beaman Jacinto, City of Coachella
Wes Speake / Jim Steiner, City of Corona
Scott Matas / Russell Betts, City of Desert Hot Springs
Clint Lorimore / Todd Rigby, City of Eastvale
Linda Krupa / Russ Brown, City of Hemet
Dana Reed / To Be Appointed, City of Indian Wells
Waymond Fermon / Oscar Ortiz, City of Indio
Brian Berkson / Chris Barajas, City of Jurupa Valley
Kathleen Fitzpatrick / Robert Radi, City of La Quinta
Bob Magee / Natasha Johnson, City of Lake Elsinore
Bill Zimmerman / Dean Deines, City of Menifee
Victoria Baca / Carla Thornton, City of Moreno Valley
Scott Vinton / Randon Lane, City of Murrieta
Berwin Hanna / Ted Hoffman, City of Norco
Jan Harnik / Kathleen Kelly, City of Palm Desert
Lisa Middleton / Jon R. Roberts, City of Palm Springs
Michael M. Vargas / Rita Rogers, City of Perris
Ted Weill / Charles Townsend, City of Rancho Mirage
Rusty Bailey / Andy Melendrez, City of Riverside
Andrew Kotyuk / Russ Utz, City of San Jacinto
Michael S. Naggar / Maryann Edwards, City of Temecula
Ben J. Benoit / Joseph Morabito, City of Wildomar
Mike Beauchamp, Governor's Appointee Caltrans District 8

Comments are welcomed by the Commission. If you wish to provide comments to the Commission, please complete and submit a Speaker Card to the Clerk of the Board.

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

www.rctc.org

MEETING AGENDA*
****Actions may be taken on any item listed on the agenda***

9:30 a.m.
Wednesday, May 8, 2019

BOARD ROOM
County of Riverside Administrative Center
4080 Lemon Street, First Floor, Riverside, CA

In compliance with the Brown Act and Government Code Section 54957.5, agenda materials distributed 72 hours prior to the meeting, which are public records relating to open session agenda items, will be available for inspection by members of the public prior to the meeting at the Commission office, 4080 Lemon Street, Third Floor, Riverside, CA, and on the Commission's website, www.rctc.org.

In compliance with the Americans with Disabilities Act, Government Code Section 54954.2, and the Federal Transit Administration Title VI, please contact the Clerk of the Board at (951) 787-7141 if special assistance is needed to participate in a Commission meeting, including accessibility and translation services. Assistance is provided free of charge. Notification of at least 48 hours prior to the meeting time will assist staff in assuring reasonable arrangements can be made to provide assistance at the meeting.

1. CALL TO ORDER

2. ROLL CALL

3. PLEDGE OF ALLEGIANCE

4. PUBLIC COMMENTS – *Each individual speaker is limited to speak three (3) continuous minutes or less. The Commission may, either at the direction of the Chair or by majority vote of the Commission, waive this three-minute time limitation. Depending on the number of items on the Agenda and the number of speakers, the Chair may, at his/her discretion, reduce the time of each speaker to two (2) continuous minutes. In addition, the maximum time for public comment for any individual item or topic is thirty (30) minutes. Also, the Commission may terminate public comments if such comments become repetitious. Speakers may not yield their time to others without the consent of the Chair. Any written documents to be distributed or presented to the Commission shall be submitted to the Clerk of the Board. This policy applies to Public Comments and comments on Agenda Items.*

Under the Brown Act, the Commission should not take action on or discuss matters raised during public comment portion of the agenda that are not listed on the agenda. Commission members may refer such matters to staff for factual information or to be placed on the subsequent agenda for consideration.

5. ADDITIONS / REVISIONS – *The Commission may add an item to the Agenda after making a finding that there is a need to take immediate action on the item and that the item came to the attention of the Commission subsequent to the posting of the agenda. An action adding an item to the agenda requires 2/3 vote of the Commission. If there are less than 2/3 of the Commission members present, adding an item to the agenda requires a unanimous vote. Added items will be placed for discussion at the end of the agenda.*

6. APPROVAL OF MINUTES – JANUARY 31 WORKSHOP AND APRIL 10, 2019

7. PUBLIC HEARING – ADOPT TWO RESOLUTIONS OF NECESSITY FOR THE ACQUISITION OF FEE AND TEMPORARY CONSTRUCTION EASEMENT INTERESTS IN ALL OR PORTIONS OF CERTAIN REAL PROPERTY, BY EMINENT DOMAIN, MORE PARTICULARLY DESCRIBED AS ASSESSOR PARCEL NOS. 305-050-051 AND 305-050-055 (CPNS 1009 AND 1010), AND ASSESSOR PARCEL NO. 305-060-010 (CPN 1012), LOCATED IN PERRIS, RIVERSIDE COUNTY, CALIFORNIA, FOR THE CONSTRUCTION OF AN INTERCHANGE AT THE INTERSECTION OF INTERSTATE 215 AND PLACENTIA AVENUE, IN RIVERSIDE COUNTY, CALIFORNIA

Page 1

Overview

This item is for the Commission to:

1) Conduct a hearing to consider the adoption of resolutions of necessity, including providing all parties interested in the affected properties and their attorneys, or their representatives, an opportunity to be heard on the issues relevant to the resolutions of necessity;
2) Make the following findings as hereinafter described in this report:
   a) The public interest and necessity require the proposed project;
   b) The project is planned or located in a manner that will be most compatible with the greatest public good and the least private injury;
   c) The real property to be acquired is necessary for the project; and
   d) The offer of just compensation has been made to the property owner.
3) Adopt Resolutions of Necessity Nos. 19-005 and 19-006, "*Resolutions of Necessity for the Acquisition of Fee and Temporary Construction Easement Interests in All or Portions of Certain Real Property, by Eminent Domain, More Particularly Described as Assessor Parcel Nos. 305-050-051 and 305-050-055 (CPNs 1009 and 1010), and Assessor Parcel No. 305-060-010 (CPN 1012), located in Perris, Riverside County, California*," for the construction of an interchange at the intersection of Interstate 215 and Placentia Avenue, in Riverside County, California.

8. PUBLIC HEARING – PROPOSED BUDGET FOR FISCAL YEAR 2019/20

Page 31

Overview

This item is for the Commission to:

1) Discuss, review, and provide guidance on the proposed Fiscal Year 2019/20 Budget; and
2) Open the public hearing in order to receive input and comments on the proposed FY 2019/20 Budget on May 8 and on June 12, 2019, and thereafter close the public hearing.

9. CONSENT CALENDAR – *All matters on the Consent Calendar will be approved in a single motion unless a Commissioner(s) requests separate action on specific item(s). Items pulled from the Consent Calendar will be placed for discussion at the end of the agenda.*

9A. QUARTERLY SALES TAX ANALYSIS

Page 53

Overview

This item is for the Commission to receive and file the sales tax analysis for Quarter 3, 2018 (3Q 2018).

9B. SINGLE SIGNATURE AUTHORITY REPORT

Page 62

Overview

This item is for the Commission to receive and file the Single Signature Authority report for the third quarter ended March 31, 2019.

9C. STATE AND FEDERAL LEGISLATIVE UPDATE

Page 64

Overview

This item is for the Commission to:

1) Adopt the following bill position:
   a) AB 456 (Chiu, Bonta, Low) – Oppose; and
2) Receive and file an update on state and federal legislation.

9D. AGREEMENT WITH HDR ENGINEERING, INC. FOR THE COMPLETION OF PROJECT APPROVAL/ENVIRONMENTAL DOCUMENT FOR THE INTERSTATE 15 EXPRESS LANES PROJECT-SOUTHERN EXTENSION

Page 67

Overview

This item is for the Commission to:

1) Award Agreement No. 19-31-025-00 to HDR Engineering, Inc. (HDR) to provide preliminary engineering and environmental analysis services for the Interstate 15 Express Lanes Project - Southern Extension (I-15 ELPSE), in the amount of $26,320,011, plus a contingency amount of $2,632,001, for a total amount not to exceed $28,952,012;
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement on behalf of the Commission; and
3) Authorize the Executive Director, or designee, to approve contingency work as may be required for the Project.

9E. AGREEMENT WITH THE ORANGE COUNTY TRANSPORTATION AUTHORITY FOR THE 15/91 EXPRESS LANES CONNECTOR PROJECT DESIGN-BUILD PHASE

Page 172

Overview

This item is for the Commission to:

1) Approve Agreement No. 19-31-067-00 with Orange County Transportation Authority (OCTA) for reimbursement for closure of the OCTA 91 Express Lanes in support of the Interstate 15/State Route 91 Express Lanes Connector Project (15/91 ELC) in the amount of $398,000, plus a contingency amount of $39,000, for a total amount not to exceed $437,000;
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement on behalf of the Commission;
3) Authorize the Executive Director or designee to approve contingency work up to the total amount not to exceed as required for the project; and
4) Authorize the Executive Director or designee to approve future non-funding amendments to this agreement.

9F. ADOPT RESOLUTION NO. 19-007 FOR FISCAL YEAR 2018/19 LOW CARBON TRANSIT OPERATIONS PROGRAM FUNDS FOR EXPANDED PERRIS VALLEY LINE SERVICE

Page 183

Overview

This item is for the Commission to adopt Resolution No. 19-007, "*Resolution of the Riverside County Transportation Commission Regarding Authorization for the Execution of the Certifications and Assurances and Authorized Agent Forms for the Low Carbon Transit Operations Program for the Expanded Perris Valley Line Fiscal Year 2018/19 Funds Project in the Amount of $1,496,728.*"

9G. FUNDING AGREEMENT WITH THE CALIFORNIA HIGHWAY PATROL FOR FREEWAY SERVICE PATROL SUPERVISION

Page 187

Overview

This item is for the Commission to:

1) Approve Agreement No. 19-45-063-00 with the California Highway Patrol (CHP) to provide supervision and operation of the Freeway Service Patrol (FSP) program in Riverside County for a three-year term in an amount not to exceed $3,002,629; and
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement on behalf of the Commission.

10. QUARTERLY PUBLIC ENGAGEMENT METRICS REPORT, JANUARY – MARCH 2019

Page 203

Overview

This item is for the Commission to receive and file the Quarterly Public Engagement Metrics Report for January – March 2019.

11. STATE ROUTE 60 TRUCK LANES PROJECT PUBLIC OUTREACH UPDATE

Page 210

Overview

This item is for the Commission to oral report on the public outreach efforts for the State Route 60 Truck Lanes project.

12. APPROVAL OF THE LOGISTICS MITIGATION FEE NEXUS STUDY

Page 211

Overview

This item is for the Commission to approve the Logistics Mitigation Fee Nexus Study

13. ITEM(S) PULLED FROM CONSENT CALENDAR AGENDA

14. COMMISSIONERS / EXECUTIVE DIRECTOR REPORT

Overview

This item provides the opportunity for the Commissioners and the Executive Director to report on attended meetings/conferences and any other items related to Commission activities.

15. CLOSED SESSION

15A. CONFERENCE WITH REAL PROPERTY NEGOTIATORS

Pursuant to Government Code Section 54956.8
Agency Negotiator: Executive Director or Designee

Item	APN(s)	Property Owner	Buyer(s)
1	117-070-032	RCTC	Pravin Kumar
2	117-122-001 and 117-122-002	RCTC	Pravin Kumar
3	117-270-009	RCTC	Maple Associates

16. ADJOURNMENT

The next meeting of the Commission is scheduled to be held on **Wednesday, June 12, 2019**, Board Room, First Floor, County Administrative Center, 4080 Lemon Street, Riverside.

AGENDA ITEM 6

MINUTES

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

MINUTES

Thursday, January 31, 2019

The Riverside County Transportation Commission Workshop was called to order by Chair Chuck Washington at 1:06 p.m., at the Temecula Creek Inn, 44501 Rainbow Canyon Road, Temecula, California.

Commissioners/Alternates Present		**Commissioners Absent**
Rusty Bailey	Scott Matas	Victoria Baca
Ben J. Benoit	Lisa Middleton	Clint Lorimore
Brian Berkson	Michael Naggar	Ted Weill
Randall Bonner	V. Manuel Perez*	Bill Zimmerman
Joseph DeConinck	Catalino Pining	City of Cathedral City
Waymond Fermon	Dana Reed	
Kathleen Fitzpatrick	Wes Speake	
Jan Harnik	Karen Spiegel	
Berwin Hanna	Chuck Washington	
Steven Hernandez*	Art Welch	
Jeff Hewitt	Lloyd White	
Jim Hyatt	Michael M. Vargas	
Kevin Jeffries	Scott Vinton	
Andrew Kotyuk		
Linda Krupa		
Bob Magee		

*Arrived after meeting was called to order

WELCOME AND WORKSHOP OVERVIEW

Chair Washington welcomed and thanked the Commissioners for their attendance and provided an overview of the January 31 workshop.

Anne Mayer, Executive Director, presented the workshop overview, highlighting the following areas:

- The Commission needs a vision and to change the transportation network system
- The RCTC team under the Commission's leadership has the talent and responsibility to provide recommendations on the strategy and specific projects that will fulfill the long term vision
- A map depicting priorities: project delivery in Riverside County
- A photo depicting the highways for National Defense when the Interstate system was originally envisioned by President Eisenhower

- Challenges and opportunities – the challenge today and the requirement of modern infrastructure is to move our $20 trillion national economy; which includes one of its fastest growing regions in Riverside County:
  - Economic factors: International trade at the Ports and the Borders; retail commerce both brick and mortar and on line; affordability in housing; and employment
- We're Growing – Riverside County is the fastest growing County in California in 2018
- A Press-Enterprise photo depicting heavy traffic on the freeway – It shifts the conversation to how can the Commission build a transportation system that grows jobs here
- Before and after SB 1 Local Streets and Roads (LSR) Revenues in Riverside County, which is approximately a 90 percent increase in every cities in the County for LSR funding
- Coachella and Palo Verde Valleys cities funding received before and after SB 1
- Western Riverside County cities funding received before and after SB 1
- A Riverside County map for the 2018 State Highway Operation and Protection (SHOPP) Program Caltrans will be investing $840 million over the next six years in rehabilitation and operation improvements

Anne Mayer expressed this Commission made the right request last year making a difficult decision to oppose Proposition 6 and protect this investment. She stated SB 1 and Measure A are strong foundations upon which the Commission can build towards the future, however, the Commission cannot build its way out of congestion. Anne Mayer expressed building for the future and focusing on an overarching goal of bringing jobs and keeping jobs here. She then listed the topics for discussion at the workshop and expressed needing the Commissions leadership to achieve that goal for 2019.

At this time, Chair Washington requested a moment of silence in honor of Commissioner Greg Pettis who passed away.

DISADVANTAGE COMMUNITIES AND ITS IMPACT ON STATE GRANTS

At this time, Anne Mayer welcomed and introduced Coachella Valley Association of Government's (CVAG) Executive Director Tom Kirk to present disadvantaged communities and its impact on state grants.

Tom Kirk presented transportation and transportation that benefited disadvantaged communities, highlighting the following areas:

- Transportation and the linkage to affordable housing objectives are not met as the SB 1 dollars are being held by the state
- The Desert Sun Article – Newsom leaps headfirst into state housing crisis
- Legislative Platform: Support maintaining the legislative intent behind SB 1, including, but not limited to: Opposing efforts to tie distribution of transportation funding to ancillary policy matters, such as housing

- Cap & Trade – The Commission and CVAG linking to affordable housing and Sustainable Communities Program:
  - So how is Riverside County in this housing-transport linked program relationship and funding: $667 million statewide; Riverside County's fair share would be $41 million; Riverside County's actual share is $6 million; and the Coachella Valley's actual share is $0
- Cap & Trade Transformative Climate Communities (TCC): Fresno received $70 million and Los Angeles and Ontario received $35 million
- TCC targets disadvantage communities, which CVAG believed was great for the Coachella Valley
- Between Coachella Valley and Blythe there are 126 census tracts 86 of them are at or below the federal poverty level
- A long spreadsheet was displayed with the new math for disadvantaged communities in the state of California of the top 25 percent
- How is the CalEnvironscreen Scored: Pollution burden x population characteristics = Environscreen score – CalEnviroscreen only says part of Indio one census tract, part of Coachella and the North Shore one census tract in Blythe are disadvantaged
- TCC Planning gave $170,000 grant money in Coachella to plan for the bigger dollars, however the state said they cannot compete as it is not bad enough and only goes to the top five percent
- Although there are disadvantaged communities in Indio, Palm Desert, and in La Quinta and they cannot apply for those grant funds as these cities do not do poorly enough with new math in the state of California
- A map that depicts the six interchanges in the Coachella Valley that CVAG funded in partnership with the Commission, Caltrans, and local cities none of those are what the state would consider disadvantaged communities
- A map depicting the areas if CalEnvironscreen used or affordable housing for people that live in Coachella Valley
- Why is this a pressing issue – Certainly Riverside County is not getting the money that is deserved; CVAG is working with Assemblyman Edward Garcia to make some fixes and to focus also on income

THE FIRST HALF OF 2019 – WHAT'S ON THE HORIZON?

John Standiford, Deputy Executive Director, presented the RCTC look ahead for the first half of 2019 and what's on the horizon, highlighting the following:

- January 2019 – I-215 Placentia Interchange project; approval of Legislative Platform; one year anniversary of the start of Route 200; and Active Transportation Grant awards
- February 2019 – Sound walls on I-15; State Grant decision on Coachella Valley Rail; Riverside/La Sierra Metrolink station improvement; and Short Range Transit Plan (SRTP) Workshop

- March 2019 - #rebootmyCOMMUTE; 91 Express Lanes 2nd anniversary; 91 Express Lanes new customer service office; Truck Study update; Infrastructure for Rebuilding America (INFRA) Grant submittal seeking $75 million in Federal funding
- April 2019 – RCTC VanClub 1st anniversary
- May 2019: Rebuilding California SB 1 – Environmental work begins: I-15 Express Lanes Project Southern Extension; I-15 Railroad Canyon Interchange projects
- May 2019 – Complete Long Range Transportation Plan (LRTP)
- June 2019 – Adoption of FY 2019/20 Budget; adoption of SRTPs; launch design-build procurement process 15/91 Express Lanes Connector; updating transponder technology; 91 Implementation Plan update
- Summer 2019 – Call Box optimization; 60 Truck Lanes project construction begins; Pachappa Bridge project construction bids opening; and I-15 Express Lanes project – 50 percent construction milestone

Commissioner Michael Naggar explained how the city of Temecula (Temecula) put in an application for the INFRA Grant and it was turned down and Temecula is submitting again as is the Commission. He stated that Temecula and the Commission has the same goals and asked if there has been any consideration to collaborate on that grant.

Anne Mayer explained when there has been a federal or a statewide grant opportunity the Commission puts forward the projects that are much larger, more regionally focused and the most competitive, which is the Commission's primary focus. She discussed why the agencies could not combine all submittals in Riverside County for the grant proposals and how the Commission will continue to submit its project priorities per Measure A.

In response to Commissioner Naggar's inquiry if the French Valley Parkway is included in the INFRA Grant, Anne Mayer replied no. She stated the INFRA Grant proposal the Commission is going forward with is a bundle related to the 91 Corridor and the Commission is asking for $75 million to compliment an overall program of $400 million. She discussed the last round that was formerly called Build Discretionary Grant when the 71/91 interchange was submitted for funding and discussed the debrief from the U.S. Department of Transportation. She noted the bundle of projects related to the 91 Corridor the Commission is submitting is geographically focused, they are projects ready to go and has a huge sum of power money as a part of the package. She discussed the status of the French Valley Parkway project as Phase II is fully funded and encouraged city staff to submit Phase III as part of the cities' proposal. She stated staff is not asking the Commissioners to establish priorities, but to set the path forward so staff can establish all those priorities for the next 10 years of the sales tax measure.

In response to Commissioner Naggar's inquiry about the workshop agenda, Anne Mayer replied from 4:00 p.m. – 5:00 p.m. the Commission will be discussing priorities for 2019 and beyond and staff has a presentation that will layout the challenges over the next 10 years and there will be a proposed path to identify the next steps.

In response to Commissioner Naggar's inquiry in John Standiford's presentation on the projects that are about to start as the French Valley Parkway project was left out, Anne Mayer replied the calendar Mr. Standiford provided was only a snap shot of the first six months of this year.

Commissioner Rusty Bailey noted there are a couple active transportation projects that connect a number of cities. The bottom line is the Santa Ana River Trail connects a number of cities and the Commission has assisted with project management at the start to suffice at least five or six cities. Commissioner Bailey stated OCTA should be part of 91 corridor discussions and or plan since there is so much opportunity there with electric scooters and electric bikes, which is something the Commission has not had an update on in a while. He suggested having more updates even for CV Link and keep watching the active transportation feature as it was mentioned there are grants out there and the Commission needs to continue on that route.

Commissioner Karen Spiegel expressed gratitude when Anne Mayer was talking about a vision and the change in conversation. She took focus on John Standiford's presentation and in going through the Commission briefing book and the staff insider, she suggested it does not address the change of that conversation or at least the beginning stages and this is the first six months of the year. Commissioner Spiegel expressed the Commission needs to jump on this whether it is to create an ad hoc committee, which she wants to be a member.

Anne Mayer stated clearly staff should have started with the last presentation first. She expressed being delighted with the enthusiasm and desire to discuss this and her comments at the beginning were to provide an overview of some of the conversations to come. Anne Mayer explained staff is trying to share with the Commissioners enough background information so there is a full understanding of what is being discussed. She suggested getting through the next couple of agenda items and then the Commission can have that conversation.

Commissioner Spiegel stated she will be listening closely since she wants to discuss the Measure A and hopes there will be something different, as that is not the kind of vision the Commission should necessarily focus on. Anne Mayer noted the voter mandate that the Commission must review Measure A. Commissioner Spiegel suggested having a bigger vision on changing the vision of how the Commission looks at transportation and time it into economic development, which is a conversation not being addressed for the sales tax increase. Anne Mayer clarified there will be a presentation at 4:00 p.m. about the Priorities for 2019 & Beyond.

PUBLIC TRANSIT ISSUES TODAY AND WHAT IS THE FUTURE

At this time, Commissioner Kevin Jeffries left the meeting and Commissioner V. Manuel Perez joined the meeting.

Lorelle Moe-Luna presented the public transit today and opportunities for the future, highlighting the following areas:

- Pop quiz – 1) Who is the oldest Transit Operator in the County? 2) What percent of the population utilizes public transit in Riverside County? 3) Why were the STA, LTF, and

Measure A funding formulas established? 4) What did the SCAG/UCLA study determine to be the main reason for the decline in ridership in recent years? 5) What is the average subsidy per passenger for fixed-route bus and demand response? 6) Which mode/category has seen the highest increases in ridership?

- RCTC's role in Public Transit – Development and approval of short-range transportation improvement program; and coordination and approval of public transit service within the County
- Transportation Development Act of 1971 – Approve allocations to claimants based on analysis and evaluation of anticipated amounts and relative needs of each claimant; and Identify, analyze and recommend potential productivity improvements
- Eight public Transit Operators in Riverside County:
  - Palo Verde Valley Transit Agency (PVVTA); SunLine Transit Agency (SunLine); Riverside Transit Agency (RTA); Corona Cruiser; Riverside Special Transportation; Pass Transit; and Metrolink
  - Combined service areas total over 3,700 square miles; total county population of about 2.4 million
  - About 2 percent utilize public transit
- Specialized Transit providers to non-profits in Riverside County
- 2008 Transit Vision – Purpose: Foundation for a 10-year conceptual plan of transit service throughout the County
- Five main goals: 1) Increase coordination with the Transit and Rideshare Community; 2) Remove barriers to transit use; 3) Provide efficient and effective transit and rideshare service; 4) Ensure adequate funding; and 5) Promote energy efficiency
- 2088 Transit Vision – Funding Formulas for Western County, Coachella Valley, and Palo Verde Valley
- 10 years later: Annual revenue service hours increased 32 percent; over $27 million awarded to social service agencies for specialized transit programs; Expansion of 8 new intercity express routes; start of RTA's RapidLink Gold Line in 2017; Perris Valley Line (PVL) Metrolink extension in 2016; Metrolink added two now peak trains, weekend service, special event trains for the Festival of Lights; Better technology for customers such as RTA's BusWatch and the SunBus Tracker; SunLine awarded Cap-and-Trade funds for hydrogen-powered buses and hydrogen-generating station; IE Commuter was started to match carpoolers and offer incentives to rideshare; PVVTA started Blythe Wellness Express for specialized healthcare access; New Vanpool Programs created such as SunLine's SolVan and RCTC's VanClub; and Various marketing programs to attract new riders and growth markets
- Ridership Trends – Bus: Ridership declined about 11 percent for fixed-routes, 7 percent demand response since Fiscal Year 2014
- Ridership Trends – Rail: Overall has remained about flat since FY 2014; and Metrolink ridership in Riverside County has increased about 9 percent since FY 2014, as a result of the PVL extension
- Future growth opportunities: 1) Focus on more cost efficient service; 2) Transit agencies are already rethinking the way they deliver service to attract new riders; and 3) Leverage other regional investments

- Next steps:
  - Incorporate the next Transit Vision into the LRTP – The LRTP will:
  - Shape a vision for an integrated transportation system in Riverside County for the next 20 years, focus on the next 10 years
  - Take a comprehensive look at state highway, local streets, and transit projects
  - Allow the Commission and our local partners to better prioritize and compete for grants with a more multimodal and corridor approach
  - Update to be provided in the spring/early summer

At this time, Commissioner Magee left the meeting.

At this time, Commissioner Steven Hernandez joined the meeting.

M/S/C (Reed/Welch) to:

1) **Receive and file a report on the status of public transit; and**
2) **Direct staff to come back to the Commission by June 2019 with recommendations on any funding formula adjustments or transit policies that are needed to support public transit in Riverside County (County).**

Chair Washington noted there has been a schedule change. After the break when the workshop reconvenes the Commission will take the Priorities for 2019 & Beyond before What's Next for Express Lanes in Riverside County.

Anne Mayer referred to the transit vision formula slide and explained the reason staff provided the Commission with this background information and when updating the LRTP the Commission is going to make tough decisions about how to make investments. She expressed transit ridership is declining and the Commission continues to invest more funding into transit in hopes if we build it they will come. Anne Mayer explained the Commission will need to decide what the goals and objectives are and how to invest in transit. She referred to the formulas on how much of transit funds are invested in bus and how much in specialized transit is invested in rail.

At this time, Commissioner Art Welch left the meeting.

Anne Mayer mentioned staff will spend the next six months evaluating the transit services, and seeking input from stakeholders. She stated for those Commissioners who want to share with staff immediately send her an email, staff will integrate a few stakeholder conversations with some great ideas and suggestions that were brought forward. She clarified transit ridership is down but it does not mean that all the transit agency partners are seeing a decline on ridership.

PRIORITIES FOR 2019 & BEYOND

Aaron Hake, External Affairs Director, presented the Priorities for 2019 & Beyond, highlighting the following:

- Why – Bringing new large employers to Riverside County and bringing the workplace closer to our workforce; is it supporting the tourism economy; or is it creating safer alternatives to today's transportation systems through embracing revolutionary technology or active transportation
- A picture of the new California Air Resources Board facility coming to Riverside – Having more transportation facilities coming to Riverside to support employers such as this
- What – 2019 Measure A review; 2019-2029 Western County Highway Delivery Plan; new projects, programs, initiatives beyond Measure A
- A map of Western County projects and future projects – highlighted in green are completed projects, in blue projects that are in the construction phase, in red are projects that are near term, and in purple are the long term priority projects
- How – Status quo/reduce expectations; innovative finance (express lanes) embrace new technology; next general express lanes, new measure (2020)
- The financial climb – Western County Highway: $4+ billion in RCTC led-projects; Existing Western County Highway sources: $936 million (23 percent) thru 2029; and 73 percent restricted use; with a 2020 Measure the Commission could estimate receiving $3-6 billion Countywide
- On the path to 2020:
    - 62 percent yes vote possible (ceiling) – 2017 public opinion research
    - Need 66.67 percent (gap of 4.67 percent)
    - Public Engagement Program is in motion, ramping-up
    - Public sentiment toward RCTC remains positive
- #rebootmycommute – Another way to get the public's priorities
- Future Funding Initiatives Ad Hoc Committee: 2019 Measure A review; 10-Year Western County Highway Plan; Countywide 2020 New Measure; and Innovative Finance review and recommend to the Commission the Countywide Priorities & Funding Strategy by July 2019

Anne Mayer explained frequently these conversations start with projects, the importance of how these projects make a connection between housing, transportation, jobs, and the economy. She stated the question is for the next 10 years of the measure how does the Commission deliver the right projects for the Commissioners' communities. The challenge offered now is to tell staff what you think, what is important and why is it important, and what should the Commission focus on.

At this time, Chair Washington went through the list of all the ad hoc committee appointments from the 2019 Committee Appointments that was distributed to the Commissioners. Chair Washington stated the next step is to schedule a meeting of the Future Funding Initiatives (FFI) Ad Hoc Committee to get more detail and look at what is available, what projects are priorities, and how to fund these projects.

Commissioner Wes Speake expressed making a change in tying transportation, housing, and economic development together. He stated addressing economic development is a way to take those transportation dollars, stretch them, and fill some gaps in the meantime.

Chair Washington referred to the opening comments from Anne Mayer and expressed it is important to recognize there are some clean up issues from the 91 corridor that was pushed off so those have a priority. He stated the Commission has to focus on more internal circulation within Riverside County on how to create an infrastructure that promotes housing and economic development needs, and how to move people and goods. He expressed the Commission is in the best position in terms of a funding stream and as Anne Mayer mentioned if there are ways to bring outside dollars into Riverside County and free up the County funding the Commission would be better off. Chair Washington stated the Commission has to get those grant funds then leverage the remaining funds the Commission has, and set up the Commission's priority projects.

Anne Mayer discussed how this workshop was not intended to be about projects and setting priorities. She expressed staff is requesting what concerns the Commissioners have about the growth in Riverside County, how it impacts their communities, and what is your future vision in order to come up with a future plan.

Commissioner Andrew Kotyuk stated he is coming from different perspectives to address that issue and to address the FFI Ad Hoc Committee to consider, which is finance and rail being Metrolink. He suggested three scenarios, which is: 1) when there is a recession what are the priorities, 2) if it stays status quo what are the priorities, and 3) if things continue to grow and expand and revenues continues to increase what are the priorities. Commissioner Kotyuk discussed from a rail standpoint about Metrolink the environmental and connection issues amongst the counties. He expressed concern about the many lawsuits on the city of San Jacinto Measure A projects so their projects have not happened while their community contributed to Measure A. He requested that many of the large projects in San Jacinto be looked at that were part of the original Measure A and break them up in segments to gradually keep the voters and supporters behind Measure A moving forward.

Commissioner Dana Reed stated Riverside County is the new Orange County as it is growing and Orange County is the same in terms of population growth. He expressed the population growth will go higher and all the housing is already permitted and not to mention those that are not yet permitted. He explained the voters of Los Angeles County had chosen to take two cents so every taxable sale goes to transportation and the Commission is at a half-cent sales tax. Commissioner Reed expressed Riverside County is at the very low end of participation and self-help planning due to only having a half-cent sales tax.

Commissioner Naggar expressed appreciation for Commissioner Reed's comments and referred to Commissioner Speake's comment about sticking to status quo, to develop the Commission's plans around economic development and housing. Commissioner Naggar discussed several reasons why he is advocating for the French Valley Parkway project Phase III since this project is important to the cities of Canyon Lake, Hemet, Lake Elsinore, Menifee, Murrieta, Temecula, and Wildomar. He expressed this is a tourism, employment, and housing base and it needs to be looked at as all the cities mentioned are affected. He expressed support for an additional tax measure for Measure A and noted it is the Commission's obligation to educate the voters. He mentioned the toll roads are producing $48 million, which is a great revenue source to keep or dedicate it for that area.

Commissioner Jan Harnik expressed appreciation for the Commissioners' comments and for the fact the Commission might have to shape up the status quo. There are communities that have issues that need to be remedied in the Coachella Valley that have no proper transportation. Commissioner Harnik stated there are different needs in Coachella Valley as there is too much congestion when people are going to their tourist events. She suggested taking a step back, getting bold, shaking this up, the Commission has to drive the discussion and the building whether it is homes or jobs.

Commissioner Jim Hyatt explained living in the Pass Area in the city of Calimesa and how the cities of Beaumont and Banning will have 20,000+ homes built in the next 15 years. He expressed the SR-60 Truck Lanes project is not necessary and noted he mentioned it at the 2018 Commission Annual Workshop. He discussed his meeting with former Caltrans District Director John Bulinski and San Bernardino about the issues with I-10. Commissioner Hyatt expressed concern his engineer and San Bernardino verified there is practically no way to add another lane in the Pass Area. He suggested the Commission improves lanes on SR-60 at I-10 that connects westbound due to the truck traffic in addition to improving I-10/SR-60 interchange or the cities of Beaumont, Banning, and Calimesa will be in terrible shape. Commissioner Hyatt suggested the Nexus Study cover other roads such as Live Oak Canyon to Redlands Boulevard and form a committee with San Bernardino, as the Commission needs that connection.

Anne Mayer expressed there will be significant growth in the Pass Area and the infrastructure system cannot handle it. She explained there are projects included in the Expenditure Plan developed in 1999 and in 2019, and the Commission is responsible to re-evaluate the Expenditure Plan. She asked the Commissioners if the projects in Measure A still apply to their objectives trying to be achieved.

Commissioner Steven Hernandez suggested evaluating the long-term impacts on the economy with respect to some of the Commission's transportation projects and what these projects will do long term for the economy. There are new houses coming in and he suggested if there should be criteria to look at how to keep commuters closer to home instead of commuting to their jobs. He requested looking at what the long-term impacts are on the economy on all these projects that need funding but expressed long term it is just a bridge that may not be doing anything for people staying closer to home and working closer to home.

Commissioner Lloyd White stated wanting to build on the Pass Area with a different twist. He explained the Commission is in a very reactive mode, and there have been problems with the Pass Area for years and as Commissioner Hyatt mentioned there are over 21,000 new homes. Commissioner White expressed the Pass Area becomes a choke point that affects the Pass Area and Coachella Valley, it is going to affect the transportation logistics with the warehouses and the job growth logistics have been significant. He discussed the mitigation fee analysis for the World Logistic Center that impacts I-10 to Coachella Valley. He expressed concern there were no members from the Pass Area on the FFI Ad Hoc Committee.

Commissioner Ben Benoit concurred the Commission needs to look in a different direction as it is not necessarily the problem with freeways it is mainly the infrastructure needing a two-lane road. Commissioner Benoit stated if the city of Wildomar creates a job center in Menifee, Wildomar, and Murrieta that is more an east to west connectivity without improving local roads would bring his city to attract a larger community and a larger office tower. Commissioner Benoit suggested focusing on where there is a double standard as there will be future impacts on the I-15 corridor central portion, which is one of the projects going forward. He requested if possible, there are some dedicated on ramps and off ramps such as the city of Calimesa on SR-60 as they have similar issues in the city of Wildomar in parts of that area including Bundy Canyon due to high fatality risk rates. He stated this would help create these local business centers in these cities to bring in some of those Orange County businesses.

Commissioner Rusty Bailey concurred with Commissioners Benoit and Commissioner Harnik's comments and the proactive nature of looking long term. He stated where does it make sense to build up and what are the incentives for a city to build up since it will create more traffic and an impasse. Commissioner Bailey expressed just the nature is what we are in is to pay as you go.

Aaron Hake replied the Commission could not bond anymore but that is how it has acquired the projects the Commission has today.

Commissioner Bailey clarified the Commission is reacting to the impacts as TUMF might be a little more proactive, in the future how can the Commission incentivize cities to build that tower knowing there will be all those impacts. He concurred in terms of the Nexus Study between transportation and urban, mid-county, and eastern portion housing.

At this time, Commissioner Scott Matas left the meeting.

Commissioner Karen Spiegel explained the jobs in Los Angeles and Orange Counties pay more, people move out to Riverside County to buy a bigger home, and they choose to drive in and expect the cities to fix that problem. She suggested to collaborate and bring that philosophy of businesses out this way, as the cities tend to build the houses first and then the infrastructure. Commissioner Spiegel expressed each city has issues but the Commission needs to provide where the energy should be focused, which is how to find that partnership. She expressed priorities are important and referred to Anne Mayer's comment what is the why and what are we trying to accomplish. She suggested the Commission must think outside that box and get the vision and work together to be more successful. She stated the key piece missing and the state is missing is economic development, which needs to be tied to transportation.

Commissioner Middleton expressed this is not only a Riverside County issue it is a Southern California regional issue of how to get people from one place to another. She suggested there is something else to look at, which is when people get home what is the safety around the streets. She stated is there an infrastructure of streets that makes it safe for people to walk, or to use bicycles to get from one place to another and largely there is not. It is apparent if the Commission wants to engage millennial voters the Commission needs to get the opportunity if they are voting

to get more dedicated bike lanes, which will be safe. She suggested lowering the speed limits in the cities in order to save lives.

Commissioner Hewitt discussed how the Governor's plan is to build more houses and legislation that will circumvent CEQA. He expressed support for the Mid County Parkway project, which will open up Hidden Valley, San Jacinto, Hemet, the bypass, and the intersections at Cherry Valley and Highland Springs, where SR-79 meets up as all these projects are important. He stated Riverside County will be the second largest county in 15-20 years and the Commission needs to start thinking outside the box as this body can do some amazing things.

Commissioner Linda Krupa stated discussed the importance and impact of jobs. She discussed the reasons for increased traffic at SR-79 and San Jacinto Valley and the two city streets Warren Road and San Jacinto Street that takes the increased traffic and has more accidents. She supports all the projects the Commission completed and for all the comments made. She expressed being project specific on the SR-79 Realignment project, which is why it has been very detrimental to the San Jacinto Valley and the cities of Hemet and San Jacinto.

Commissioner Harnik expressed appreciation for Commissioner Spiegel's comments and stated when looking specifically at Coachella Valley it is primarily east and west so it is critical the Commission works together for the best result. She suggested occasionally it is not widening the streets it is about technology that can get the Commission there and she referred to Page 10 of the staff report about improving traffic flow and reduce congestion on Highway 111, which does not need to be a great amount of construction done. She suggested traffic signal synchronization, which is being driven as technology can go a long way in order to move things at a better rate.

Commissioner Vinton concurred with the Commissioners' comments about the community and Western Riverside County is a commuting population. He suggested bringing in more paying jobs in order to help that however it is up to the cities to look at regionally. He expressed support for the French Valley Parkway Phase III project to alleviate some of that traffic. He inquired on the dollar amounts mentioned that the additional measure could bring in.

Aaron Hake replied that would be the low end of what that half-cent can bring in over 20 years in the Commission's original estimation. He stated the Commission's legislative authority from the Governor and the Legislature is for another half-cent for what Measure A currently is.

Commissioner Wes Speake stated in speaking to the Corona City Council and the Economic Development Department any business established in Riverside County east and south of Corona is good for the city of Corona. It is a regional solution as the entire western part of the county funnels through one freeway and the projects occurring in the city of Corona are for the County. He expressed Economic Development has to be a part of this and how to look at land use in each city is a regional issue.

Chair Washington pointed out how the city of Irvine is one of the best places to live in the Country and 60 percent of the people leave town every day to work somewhere else. He expressed as long as the quality of life bar is raised in the communities people will want to live there for having

safe communities and great schools. Chair Washington stated the more popular that community becomes there is more pressure on home values. He expressed recognizing the problem is transportation and infrastructure, which the Commission is trying to resolve and be creative.

Commissioner Naggar provided comments on behalf of Commissioner Bob Magee's request. Commission Magee expressed support for the I-15 Task Force efforts goal, which is to improve mobility from Cajalco Road to San Diego County Line and this needs to be one of the Commission's priorities for 2019 and beyond.

M/S/C (Bailey/Hyatt) to:

1) Receive and file the RCTC Staff Insight Brief;
3) Assign the Future Funding Initiatives ad hoc Committee to thoroughly vet and make specific recommendations to the Commission no later than July 2019 on the following:
a. Measure A Expenditure Plan Review and update;
b. 2019-2029 Western County Highway Delivery Plan;
c. A new local funding measure for the 2020 general election; and
d. Innovative financing of express lanes revenues.

At this time, Anne Mayer explained the Commission needs to approve staff recommendation no. 2, due to the urgency for the timeline on this project. This action item is related to the 15/91 Express Lane Connector project, which connects SR-91 with I-15 north. Staff will come back to the Commission early 2020 with a contract award and final cost. She stated the range of the project cost is $200 - $230 million and the revenues used will be excess toll revenues from the 91 Express Lanes.

In response to Commissioner Vinton's inquiry, Anne Mayer replied southbound I-15 to westbound SR-91, to eastbound SR-91 to northbound I-15. That connector was not built with the original project, as there was not enough money so it was pulled out of the original project. She explained it was not put in the I-15 project, as there was not enough money to build it so the Commission was given $180 million from the state and a deadline to spend the money and have the project built by June 30, 2023. She stated there is a sense of urgency related to the project delivery and putting this request for qualifications out on the street.

In response to Commissioner Speake's clarification if this is the access toll revenue pulled, Anne Mayer replied if the Commission needs the full amount and there is no other funding source it would use a great deal of the surplus toll revenue. She explained as it was mentioned the Commission is submitting an INFRA Grant request to the Federal Department of Transportation for all three of the projects on the 91 Corridor to fully fund those then those projects will be dealt with different funding types. Anne Mayer expressed the Commission has sufficient expectations related to all fund types that this project and the 91 Corridor Operations project between Green River and SR-241 can be funded.

M/S/C (Naggar/Hanna) to:

2) Commit necessary 91 Express Lanes toll revenue to fully fund the 15/91 Express Lanes Connector design-build phase;

At this time, Commissioner Hyatt left the meeting.

WHAT'S NEXT FOR EXPRESS LANES IN RIVERSIDE COUNTY

Michael Blomquist, Toll Program Director, presented what's next for express lanes in Riverside County, highlighting the following areas:

- A map depicting the 15/91 Express Lanes Connector project
- The 91 experience – 91 Express Lanes FY 2017/18 volume: Over 14.5 million annual customers used the 91 Express Lanes, 3.2 million carpool trips, which averages to about 40,000 daily customers use the 91 Express Lanes and $47.9 million was generated
- Why pursue Express Lanes:
  - Limited state and federal funding
  - Erosion of federal gas tax
  - Significant but finite Measure A funding
  - Continued increase in people, households, and jobs
  - Very limited freeway expansion plans by state – operational improvements, maintaining the existing system
- Trends: 2006 and Now:
  - Use of single-occupant vehicles
  - Long-term jobs-housing imbalance
  - Continued demand for less congested alternatives
  - Willingness of Riverside County residents to pay a toll for travel benefits
- Should we develop Express Lanes:
  - Deliver improvements sooner due to toll funding
  - 91 and 15 Projects toll revenue-backed financing: 91 Project = $598 million and 15 project = 152 million
  - Construct improvements not otherwise possible
  - Portion of 91 corridor general purpose lane improvements
  - New express lanes in both corridors
  - Express Lanes have brought $750 million to Riverside County Transportation Commission
- New Choices for solo drivers:
  - Pay a toll for travel benefits
  - Travel time certainty and savings
  - Use when you want: Daily commuter; occasional/weekend trip; and critical trip
- Meet Measure A Voter Commitments:
  - Voter Commitment – I-15: One lane/direction: SR-60 to San Diego County Line
  - Projects Underway: I-15 Express Lanes (SR-60 to Cajalco): two lanes/direction; and I-15 Express Lanes Southern Extension (Cajalco to SR-74): two lanes/direction

  - Reduced Measure A contribution to I-15: Spend on other Measure A projects
- Meet Other Transportation Needs:
  - Corridor improvements not in Measure A: Recommended improvements to follow
  - Surplus toll revenue: Metrolink stations and service; freeway lanes and interchanges; recreational trail system; and express lane improvements
- Capitalize on the Investments Already Made:
  - $1.9 +/- billion investment made in 91 and 15 corridors: Express lane backbone in place; and Toll building purchase for long-term operations
  - Extend express lane network south and east: More Riverside County residents can benefit
  - Build on Success: 91 Express Lanes successful opening; and 15 Express Lanes to open next year
- Enables More Transit:
  - Express lane construction also provides transit infrastructure: No additional cost for express bus, van pool
  - RTA express bus Route 200 uses the 91 Express Lanes: Operating since January 2018: January: 385 boardings/day December: 625 boardings/day (+62%); and 171,000 annual boardings
  - RCTC Van pool program – (VanClub)
- Improve All Lanes:
  - Allow Carpool and General Purpose (GP) lanes to work better: Add new lane capacity; and every car in the express lanes = one less care in the GP lanes
  - Raise occupancy requirement to 3+: Ensures carpool demand does not break down the carpool lane
  - Variable tolls manage demand ensuring free-flow express lanes: More cars moved, less congestion and delay in express lanes
- Degraded Carpool Lanes with a graph on the new express lane corridors:
  - 2017 Caltrans Report: Degraded locations
  - New express lane corridors
- Pay Operations and Maintenance Cost:
  - No funded obligations for RCTC or Caltrans – 50 years of O&M costs paid via tolls
  - Ensures well-maintained express lanes for customers: RCTC provides funding and ensure maintenance; and both annual and long-term rehabilitation maintenance
- Initial Backbone and the Network Expansion:
  - We've done this before: 2005-2006 toll feasibility work; and Prioritization of 91 and 15 corridors
  - 2009-2019 Delivery Plan: Prioritization of Measure A projects
  - Where should the expansion occur?

At this time, Michael Blomquist welcomed and introduced Greg Hulsizer, HNTB Project Manager to present where should the Commission expand the express lanes.

Greg Hulsizer presented if the Commission were to develop future express lanes where would they be, and highlighted the following:

- Study Methodology: Workshop-based approach
- Four Tasks: 1) Identify key criteria and assumptions; 2) Screening analysis and tiered rankings of potential facilities; 3) Detailed analysis of top tier facilities; and 4) Establishment of overall feasibility
- Key Criteria and Assumptions
- 16 Potential Corridors – List of Corridors for RCTC Next Generation Tolling Study and a map that depicts 32 different options for the potential corridors with express lanes in two different directions for consideration
- Top Tier Corridors:
  - 91 Downtown Riverside: SR-91 from I-15 to SR-91/I-215/SR-60 Interchange
  - 60 Jurupa-Riverside: SR-60 from I-15 to SR-91/I-215/SR-60 Interchange
  - 60 Riverside-Moreno Valley: I-215/SR-60 from SR-91/I-215/SR-60 Interchange to Gilman Springs Road
  - 60/215 Riverside-Moreno Valley: SR-60/I-215 from SR-91/I-215/SR-60 Interchange to Gilman Springs Road; and SR-60/I-215 East Junction to Van Buren Boulevard
- A map that depicts the Top Tier Corridors map
- 91 Downtown Riverside: 14 miles (I-15 to SR-60)
  - 1 lane in each direction
  - Convert 1-HOV to 1-Express Lane
  - Minimal right of way impacts
- Capital cost: $184 million
- 60 Jurupa-Riverside: 10 Miles (I-15 to I-215)
  - 2 lanes in each direction
  - Convert 1-HOV and add 1 lane for 2-Express Lanes
- Capital Cost: $508 million
- 60 Riverside-Moreno Valley: 5 miles (I-215/SR-60); 10 miles (SR-60)
  - 1 lane in each direction
  - Convert 1-HOV to 1-Express Lane in each direction
- Capital Cost: $128 million
- 60/215 Riverside-Moreno Valley: 5 miles (I-215/SR-60); 10 miles (SR-60); 4 miles (I-215)
  - 2 lanes in each direction portion
  - 1 lane in each direction portions
  - Convert 1-HOV and add 1 lane for 2-Express Lanes in each direction
- Capital Cost: $319 million
- Summary of Results – 35 Year Net Revenue Study for the top tier corridors
- Finance ability and Feasibility Ranking for the top tier corridors - Ranking 1: 60/215 Riverside-Moreno Valley Corridor; Ranking 2: 60 Riverside-Moreno Valley Corridor; Ranking 3: 91 Downtown Riverside Corridor; and Ranking 4: 60 Jurupa-Riverside Corridor
- Overall Feasibility and criteria that should be considered: Transportation Mobility; Financial Feasibility; Connectivity; Project Impacts; and Project Support and Schedule
- Overall Feasibility Weighting: Transportation Mobility 35%; Financial Feasibility 30%; Connectivity 15%; Project Support and Schedule 10%; and Project Impacts 10%

- Overall Feasibility of Corridor Rankings: 1) 60/215 Riverside-Moreno Valley; 2) 91 Downtown Riverside; 3) 60 Riverside-Moreno Valley; and 4) 60 Jurupa-Riverside

At this time, Greg Hulsizer turned it over to Michael Blomquist to present the most feasible corridors, highlighting the following areas:

- What Project East of 60/215/91 Interchange?
  - GOLD = 60/215 Riverside Moreno Valley Express Lanes: 2 lanes/direction up to the 60/215 split
  - I-215 improvement: more benefit – SR-60 to Van Buren Boulevard
  - Financially more feasible: Most feasible out of all four corridors
- Next Steps: Prepare Project Initiation Documents: Project Initiation Document = Project Study Report
  - Establishes: 1) purpose and need statement; 2) project scope; and 3) cost and schedule
  - Major work on the SHS requires Caltrans-approved Project Initiation Document
  - Meets Statutory and CTC requirements for STIP-candidate projects

In response to Commissioner Reed's clarification, Michael Blomquist replied the goal is all the green area as shown in the top tier corridors map, which is the portion down I-215 and it is an additional lane from the big interchange in Riverside. He clarified it is from SR-91/SR-60/I-215 interchange in Riverside east it is two lanes in each direction as opposed to one lane in each direction to the East Junction.

Commissioner Speake expressed appreciation there are openings and wanted to know if a zipper was factored in. He explained traveling to San Diego every week and seeing additional capacity especially in this area and on SR-91, and it is not going to slow down. He understands why it did not happen through SR-91 through Corona as there are no exits so having entrances, exits there will seem to lend itself, and it is something to be considered.

Michael Blomquist clarified if he was referring to the proposed aerial system and stated it was looked at over the years not with that specifically part of the study. He discussed some of the challenges with that system.

Commissioner Bailey stated that obviously staging and the phases of construction are important. He referred to the slide with the staff recommendation and stated 91 Downtown-Riverside was first so he is assuming it is in that order.

Michael Blomquist replied it is not, there is no perceived order, one of the benefits of going to this next stage of development is further evaluate which one makes sense, and they would be constructing these all at the same time.

Anne Mayer explained to be clear staff is proposing to proceed with one Project Study Report that looks at this as a system and all three of the proposed express lanes projects are not being evaluated independently.

Michael Blomquist stated staff anticipates in the future should the Commission decide to advance these further after the initial step, eventually a priority will evolve in some way and staff will come back to the Commission with an update.

Commissioner Berkson stated since the Commission loses about 80 percent of revenue to tolling cheaters in the 3+ express lane if the Commission collected that these projects would become more feasible. He requested in the future as he mentioned at a prior meeting to have a legal course of action to take against the cheaters in the 3+ express lane. He expressed these options appear to be replacing existing HOV lanes with paid express lanes, which will help people already using the toll lane but will not help the people that were currently using that lane. Commissioner Berkson noted this will potentially add more traffic to the general purpose lanes and suggested if the Commission moves forward with these to address the issues and concerns.

Michael Blomquist replied this is not only a problem with the existing carpooling statewide but many of the express lane facilities have high violation rates. He explained the Commission pays the California Highway Patrol (CHP) to police violations in the express lanes and that service certainly can increase. He discussed the pilot programs that were done and how the Commission on the I-15 Express Lanes decided to move forward through the industry into a pilot program, which is a camera based system and they are still working through the results. Mr. Blomquist stated there is not an immediate technology solution available and discussed the issue about added capacity versus conversion and the overall benefit to the corridor of traffic operations of fully functioning express lanes.

In response to Commissioner Berkson's inquiry with this new technology if it is related to the rest of the nation, Michael Blomquist replied at some point but it is coming. Currently the transponders do not operate nationally. Statewide there will be the 6c transponders throughout the state on every toll facility and some of the other states will do the same in the western region.

In response to Commissioner Bailey's clarification, the HOV express lane 3+ would be free and is it something to evaluate and miles would need adjusting, Michael Blomquist replied absolutely. For the purpose of this pilot study they took the same policies currently on I-15 and all the policies would be subject to Commission approval on whether to charge carpoolers and how much.

In response to Commissioner Bailey's inquiry the express lanes 3+ are on certain days of the week, Michael Blomquist replied correct it is Monday through Friday, 4:00 to 6:00 p.m. eastbound 91 Express Lanes it is 50 percent charged for carpoolers.

Commissioner Bailey stated the Commission is not adding capacity just changing the lane over.

Anne Mayer explained currently most HOV lanes are 2+ and that might not be the case for much longer as the Federal Highway Administration is mandating Caltrans to do something about all these degraded HOV lanes. She stated what the Commission does with that situation is raise the occupancy so it might not be in the distant future the Commission's HOV lanes will automatically go up to 3+ with or without express lanes. She stated as Michael Blomquist mentioned any

decisions about that would be made based on much greater level of information detailed analysis and the Commission would be involved in that conversation.

In response to Commissioner Hernandez's request to elaborate on the criteria for which this was chosen, Greg Hulsizer put up the Overall Feasibility slide and explained the first cut was made strictly on financial feasibility, can this project pay for itself, and can it go and be financed. He stated discussions early on suggested that is great but there are other criteria that should be considered and the RCTC team had that discussion as to what that might be, which the top-level themes are: Transportation Mobility, Financial Feasibility, Connectivity, Project Impacts, and Project Support and Schedule. He discussed below those top-level themes how they got to what connectivity means that was done for each category, which was considered individually, also how the percentages were determined for the overall feasibility.

In response to Commissioner Hernandez's question if the assumption for respective jobs and education is the express lanes can get people there faster, Greg Hulsizer replied the assumption is overall the express lanes will increase travel speeds and liability to the extent of being able to locate to ingress and egress near those facilities.

M/S/C (Bailey/Vargas) to:

1) Receive study summary results and staff recommendations; and
2) Provide direction on staff recommendations.

WRAP UP AND NEXT STEPS

At this time, Anne Mayer explained the workshop is complete and condensed in to one day so there are no conflicts out of respect and to honor Commissioner Greg Pettis' Celebration of Life held on February 1. She expressed gratitude for the Commissioners thoughts, input, correction, guidance and expressed the Commission is headed down the right path. She confirmed the February 13 Commission meeting is cancelled.

At 5:27 p.m., Chair Washington called for a recess until 6:00 p.m.

GET ON BOARD AND MEET METROLINK'S NEW CEO

Stephanie Wiggins, introduced herself as Metrolink's new CEO and presented an overview of the following areas:

- Metrolink in Riverside County: 1) Rider demographics; 2) Metrolink's importance; 3) Rider prospects; 4) Southern California Optimized Rail Expansion (SCORE) Program; 5) Riverside-Downtown station improvements; 6) SCORE improves Metrolink system for the future; 7) Metrolink leads the nation with positive train control; 8) Percentage of miles traveled by county ; 9) Key Riverside County initiatives; 10) Future opportunities; and 11) Metrolink powered by clean technology

There being no further business for consideration by the Riverside County Transportation Commission, the workshop adjourned at 7:07 p.m.

Respectfully submitted,

Lisa Mobley
Clerk of the Board

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

MEETING MINUTES

Wednesday, April 10, 2019

1. CALL TO ORDER

The Riverside County Transportation Commission was called to order by Chair Chuck Washington at 9:31 a.m. in the Board Room at the County of Riverside Administrative Center, 4080 Lemon Street, First Floor, Riverside, California, 92501.

2. ROLL CALL

Commissioners/Alternates Present		**Commissioners Absent**
Victoria Baca	Bob Magee	Steven Hernandez
Rusty Bailey	Lisa Middleton	V. Manuel Perez
Mike Beauchamp	Michael Naggar	Lloyd White
Ben J. Benoit	Dana Reed	
Brian Berkson	Wes Speake	
Russell Betts	Karen Spiegel	
Randall Bonner	Larry Smith	
Joseph DeConinck*	Russ Utz	
Waymond Fermon*	Michael M. Vargas	
Kathleen Fitzpatrick*	Scott Vinton	
Raymond Gregory	Chuck Washington	
Berwin Hanna	Ted Weill*	
Jan Harnik	Art Welch	
Jeff Hewitt	Bill Zimmerman	
Kevin Jeffries		
Linda Krupa		
Clint Lorimore*		

*Arrived after meeting was called to order

3. PLEDGE OF ALLEGIANCE

Commissioner Kevin Jeffries led the Commission in a flag salute.

4. PUBLIC COMMENTS

At this time, Chair Washington and John Standiford presented Right of Way Manager Mark Lancaster with a 5-year service award, Senior Management Analyst Martha Masters with a 10-year service award, Chief Financial Officer Theresia Trevino with a 15-year

service award, and Senior Administrative Assistant Shirley Gooding with a 20-year service award.

5. APPROVAL OF MINUTES – MARCH 13, 2019

M/S/C (Berkson/Baca) to approve the March 13, 2019 minutes as submitted.

At this time, Commissioners Joey DeConinck, Waymond Ferman, Kathleen Fitzpatrick, Clint Lorimore, and Ted Weill joined the meeting.

6. PUBLIC HEARING – 15 EXPRESS LANES CUSTOMER TRANSPONDER ACCOUNT FEE POLICIES AND TOLL POLICIES

Jennifer Crosson presented the 15 Express Lanes Customer Transponder Account Fee Policies and Toll Policies, highlighting the following:

- Process:
  - Presented to the Toll Policy and Operations Committee – February 28, 2019
  - 10-day Public Notice required
  - Public Hearing at today's Commission meeting
- RCTC Resolution No. 19-003 Amended and Restated 15 Express Lanes Toll Policy Goals and Toll Policies:
  - Adopted in June 2016
  - Includes 24 toll policies needed to develop the project
  - One of the 24 policies to be considered for amendment – Clean Air Vehicle Discount
- Clean Air Vehicle Diagram – California Toll Operators Solution Clean Air Vehicle (CAV)
- RCTC Resolution No. 19-004 – 15 Express Lanes Transponder and Customer Account Fees:
  - Fee Type and Amount: Sticker Transponder Fee - $5; Switchable Transponder Fee - $15; Mailed Paper Statement Fee - $2; Monthly Account Fee $2; Non-Sufficient Funds Check Fee - $25; Account Suspension Fee - $25; and Pay-by-Plate Fee - $2

In response to Commissioner Scott Vinton's inquiry for the pay-by-plate $2 fee, Jennifer Crosson replied each time the customer drives through without their transponder it would only be implemented after a number of transactions occurred and sufficient notice is given to the customer. The goal is to work with the customer to ensure they have a functioning transponder, how to properly mount that transponder, and after that time there is criteria built into the system to put it onto a list for an individual to review it to confirm they should be eligible for the fee.

In response to Commissioner Vinton's clarification, if there are multiple cars each car needs a transponder, Jennifer Crosson replied correct.

In response to Commissioner Ben Benoit's inquiry when the RiversideExpress.com will be accessible to Riverside County customers, Jennifer Crosson replied about April 2020.

In response to Commissioner Karen Spiegel's clarification for the difference of the internal and external sticker transponder, Jennifer Crosson replied most customers receives an internal sticker that goes inside the vehicle behind the review mirror. She stated the external sticker transponder is for the Tesla due to the high metal oxide and for motorcycles that goes on the headlamp so the transponder can be read.

In response to Commissioner Spiegel's inquiry if there is a limit on the number of stickered transponders per account, Jennifer Crosson replied no one per vehicle is preferred.

Commissioner Brian Berkson clarified about the $2 pay-by-plate violation fee each time going through a checkpoint and the problem for the I-15 Express Lanes is there will be five or six checkpoints, which could be $10 or $12 for one trip. He asked if it is being limited to a $2 maximum per route per direction.

Jennifer Crosson stated each toll point is referred to as a transaction and transactions build up to a trip and the $2 would apply to one trip.

Commissioner Rusty Bailey clarified not looking closely enough if the projected revenue is coming from the transponder fees and since the Commission needs more people to use this lane suggested giving one transponder for free. He explained in looking at the SR-91 toll revenues the Commission is beyond projected revenue and if the Commission could give one transponder for free to provide some appreciation to the customer it makes the Commission look good.

Jennifer Crosson replied she is not sure if she can answer that question if the Commission can do that for free. She explained when working on the 91 revamp of their policies ahead of the 60 transition focus groups were held with customers to test these fees and there was no issue with the $5 transponder fee. There is a cost incurred to purchase these, to mail the package that goes with this and the postage adds up to the $5. She expressed the Commission would not want to give them all free as the customer would ask for more than they need and staff would not want these floating around. Jennifer Crosson noted the idea of the first transponder free really did not occur to staff.

Commissioner Bailey stated from a public relations position for getting new customers to sign up a lower barrier entry there even though $5 is not that big of deal. In going through the process of looking at this in the future for the Commission to connect that service and it could be a nice public relations piece.

Commissioner Larry Smith referred to Commissioner Bailey's suggestion about free transponders and stated there may be another way to achieve this, which would be to credit the customer's account with a $15 credit that initiates the process for them to try the toll lanes.

Jennifer Crosson stated the Commission will offer new account holders free tolls for two weeks so they do get a good entry level. She explained the account policies are much more generous than the 91 Express Lanes, it has not been a barrier to opening for 91 Express Lanes, and accounts continue to grow at 500 a week today, which is a big increase then what there was before. She stated there will be some promotional activities that will give them something like a credit.

At this time, Chair Washington opened the public hearing and requested if there are any public comments. There were no comments received from the public.

In response to Commissioner Keren Spiegel's inquiry if the old transponders will need to be turned in, Jennifer Crosson replied that is for the 91 Express Lanes and this is for the I-15 Express Lanes.

In response to Commissioner Spiegel's clarification how far between the two will the 91 Express Lanes transponders be converted into the stickers, Jennifer Crosson replied that should happen this summer.

Commissioner Spiegel asked is that coordinated with the 91 Express Lanes with Orange County all at one time and adding the same transponder sticker and the little switchable with the I-15 Express Lanes.

Jennifer Crosson stated correct, the Commission shares an account base there and the price being proposed today is the same as the 91.

In response to Commissioner Spiegel's inquiry about people being concerned that there will be the lack of understanding for the differences between the two, Jennifer Crosson replied Orange County and Riverside County 91 Express Lanes are the same.

Commissioner Wes Speake noted in following the 91 Project there will not be a problem marketing this to the public. He expressed the commuters that are currently sitting on I-15 going north or south depending on the day are going to run at this and he does not see any issues. He stated with seeing some of the projections put forward there should not be any issues attracting enough users and have a similar response the Commission had with the 91 Project.

Commissioner Dana Reed moved adoption of both Resolutions Nos. 19-003 and 19-004.

Commissioner Russell Betts explained when the I-10 Express Lanes were put in place there was an amnesty period that if somebody drove down the lanes and got a traffic ticket they had the option of trading the ticket for a transponder and signing up for the program. He asked if that is envisioned for this system.

Jennifer Crosson replied staff has not presented that ordinance or those policies yet, that is to come.

Commissioner Betts stated it comes a great easy way to recruit new customers and to get a transponder.

Jennifer Crosson stated she understands there is legislation that is prohibiting all toll agencies from marketing to violators at the moment.

At this time, Chair Washington closed the public hearing.

M/S/C (Baca/Smith) to:

1) **Adopt Resolution No. 19-003, "*Resolution of the Riverside County Transportation Commission Adopting the Amended and Restated Interstate 15 Express Lanes Toll Policy Goals and Toll Policies*"; and**
2) **Adopt Resolution No. 19-004, *"Resolution of the Riverside County Transportation Commission Regarding the 15 Express Lanes Transponder and Customer Account Fee Policies"*.**

7. ADDITIONS / REVISIONS

There is a revision to Agenda Item 8C, *"Riverside Transit Agency Fiscal Year 2018/19 Short Range Transit Plan."*

8. CONSENT CALENDAR

M/S/C (Baca/Smith) to approve the following Consent Calendar items.

8A. AGREEMENTS FOR ON-CALL RIGHT OF WAY SUPPORT SERVICES

1) Award the following agreements to provide on-call right of way support services for a three-year term in an amount not to exceed an aggregate value of $3 million:
   a) Agreement No. 19-31-045-00 to Epic Land Solutions;
   b) Agreement No. 19-31-046-00 to Overland, Pacific, & Cutler;
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreements, on behalf of the Commission; and

3) Authorize the Executive Director, or designee, to execute task orders awarded to the consultants under the terms of the agreements.

8B. AGREEMENT FOR ON-CALL RIGHT OF WAY ENGINEERING AND SURVEYING SERVICES

1) Award Agreement 19-31-013-00 to Psomas to provide on-call right of way engineering and surveying services for a three-year term, in an amount not to exceed an aggregate value of $480,000;
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement on behalf of the Commission; and
3) Authorize the Executive Director, or designee, to execute task orders awarded to the consultant under the terms of the agreement.

8C. RIVERSIDE TRANSIT AGENCY FISCAL YEAR 2018/19 SHORT RANGE TRANSIT PLAN AMENDMENT

1) Approve an increase to Riverside Transit Agency's (RTA) Fiscal Year 2018/19 Local Transportation Fund (LTF) operating assistance allocation in the amount of $1.6 million;
2) Approve reductions to RTA's FY 2018/19 2009 Measure A Western County Public Transit-Intercity Bus operating assistance allocation in the amount of $1,465,000 and 2009 Measure A Western County Public Transit-Consolidated Transportation Service Agency (CTSA) operating assistance allocation in the amount of $135,000;
3) Approve adjustments to the FY 2018/19 budget to increase LTF transit operating expenditures by $1.6 million and to decrease1 2009 Measure A Western County Public Transit-Intercity Bus and Public Transit-CTSA transit operating expenditures by $1,465,000 and $135,000, respectively; and
4) Approve an amendment to RTA's FY 2018/19 Short Range Transit Plan (SRTP) to reflect the swap of $1.6 million in 2009 Measure A Western County Public Transit funds with $1.6 million of available LTF.

9. STATE AND FEDERAL LEGISLATIVE UPDATE

Jillian Guizado, Legislative Affairs Manager, presented an update on state and federal legislative activities.

In response to Commissioner Spiegel's inquiry about the conversation that led up to AB 626, Jillian Guizado discussed how in the section of law that this bill is seeking to amend applies to public employees and the intent is to identify public employees who may have a financial interest in all different types of matters. She discussed the lawsuit

that led to the Fair Political Practice Commission (FPPC) getting involved and have begun to provide opinions to local agencies on their procurements.

Steve DeBaun, Legal Counsel, stated the conflict of interest laws establish what is called a remote interest. He explained the courts and the FPPC were finding that an architect or designer, who had worked on an earlier phase of a project and was deemed as a public official under Section 1090, had a remote interest in the project. By allowing them to work on subsequent phases of the project, they had an advantage by designing the project and then using that information to work on subsequent phases of the project. Mr. DeBaun noted the FPPC has not really settled on a position and there have been some recent FPPC decisions that seem to back away from how the FPPC is actually interpreting this but this is very much influx. He stated the American Council of Engineers (ACEC) is trying to firm up the exemption and take it away from the FPPC.

In response to Commissioner Vinton's inquiry that they are prohibited to go to the next step in the engineering or the design phase, Jillian Guizado replied she understands that currently they are not prohibited. However when it gets analyzed it goes to the FPPC or it gets challenged then they are citing this court case saying they are in fact prohibited from participating in future phases.

Steve DeBaun concurred that is generally accurate and explained the FPPC is somewhat unsettled on this and what ACEC is trying to do is create a bright line rather than leaving it up to the FPPC and potentially local public agencies to make that decision. He explained what is being seen is that local agencies are adopting their own local rules in some case citing the Section 1090 and sometimes citing it incorrectly due to an incorrect analysis.

Jillian Guizado stated with that said what the Commission follows particularly as it relates to the Commission's design-build contracts where there is work that needs to be done sort of early on that it is valuable to have that individual be able to participate in future phases. She discussed how the Commission has each sub consultant submit a conflict of interest form if someone who is proposing has participated in a prior phase and how it is reviewed by an entire team to determine if they should be allowed to participate in that next phase or not.

In response to Commissioner Vinton's inquiry if AB 626 passes how does that negate exactly what the Commission is currently doing, Jillian Guizado replied the Commission's concern if AB 626 passes having language explicitly in that code section that states engineers, surveyors, and the other individuals listed do not have an interest. She discussed how that individual could point to this section of law noting there is no interest even if the Commission determines there is an interest, therefore creating a conflict between the law and the Commission Procurement Policy.

In response to Commissioner Vinton's clarification that the Commission could decide not to pursue that individual or that individual firm to move forward whether or not it does not have to be because of a conflict of interest, Jillian Guizado the Commission does not determine who moves forward it is all in who applies.

In response to Commissioner Vinton's inquiry if an applicant who was on the preliminary design wants to go forward the Commission could decide that firm cannot move forward as a choice, Steve DeBaun replied the Commission does not have a choice as to who would apply. He stated the Commission cannot set out a request for proposal (RFP) to a group of people and then for an arbitrary decision. Commissioner Vinton clarified he was referring to the ultimate decision once the Commission receives proposals. Steve DeBaun replied there is a process for scoring the proposals and ranking the proposals. If the proposer the Commission was concerned about ranked highest, the Commission could simply not offer the job to that particular proposer for just an arbitrary reason.

Jillian Guizado stated that is the concern if that language then gets into state law the Commission is concerned to state there is too big of a conflict here and does not feel comfortable with that individual being on the next phase. She expressed the concern is that individual is going to pull up the law and the law explicitly states they do not have a conflict.

Commissioner Vinton expressed concern as it was mentioned this is very ambiguous now and the Commission would want to continue with this ambiguity.

In response to Commissioner Jan Harnik's inquiry about the two bills in the state currently moving very rapidly, Jillian Guizado replied the Active Transportation Program, which are AB 1402 and SB 152.

Commissioner Harnik clarified what the Commission is trying to support is just the local understanding is taken away now from the locals by this AB 626.

Jillian Guizado concurred and stated another way that is preferred is to use the Commission's discretion and staff does their best to not conflict people out as an entire evaluation is conducted to determine is this appropriate and does it make sense.

Commissioner Jeffries stated that in this particular one in the Legislature he is having trouble grappling with a real life situation that justifies any position here. He explained potential conflict of interest is being discussed however, he is not aware of actual conflicts of interests that have proven themselves a conflict because a surveyor worked on Phase 1 and wants to work on Phase 2, which is not inherently a conflict as much as it is a business request. Commissioner Jeffries expressed respecting the Commission has a need for self-control and utilizing discretion but when the Commission pre-disqualifies

someone the Commission does not get to exercise discretion here, it is already determined for the Commission. He then requested some examples of scenarios.

Jillian Guizado requested the Commission's Project Delivery Director or the Toll Policy Director to approach the dais to provide some examples.

Marlin Feenstra, Project Delivery Director, stated the clearest example is if a designer is working on the design phase of the project and then later the same firm becomes a construction manager in charge of the project. If that firm faces a claim situation with a contractor then that construction management firm would be in a position to advise the Commission whether the cause of the issue is due to their own design, so there may be a financial conflict of interest. Marlin Feenstra clarified it is really about local control and being able to make decisions and currently the Commission makes decisions on a case by case basis on the Commission's judgement based on the situation and to allow as much competition as much as possible. He expressed the bill as proposed would take away the Commission's ability to make any of those decisions.

Commissioner Jeffries expressed appreciation for the example as that seems to be a potential conflict and stated the self-control actually leads to trying to have the most competition the most applicants as Mr. Feenstra mentioned since the Commission pre-disqualifies firms from applying, which is actually thinning the field out. He noted respecting this and he will probably support staff's recommendation.

Jillian Guizado clarified to Commissioner Jeffries her understanding of how procurements are run is the Commission does not automatically pre-disqualify them. Staff allows them to submit their conflict of interest and it is evaluated on a case-by-case basis.

In response to Commissioner Jeffries' clarification who does the evaluation and is it determined before it gets to the Commission, Jillian Guizado replied it is staff's job to do the evaluation at the staff level and bring the recommendations to the Commission.

In response to Commissioner Jeffries' inquiry the firms will be listed but will be shown as disqualified or recommended, Marlin Feenstra replied staff works with the procurement department as a group they make those determinations. If a firm is proposing on a certain contract and if they believe they may have a conflict of interest, they will submit a request for a determination in case that firm is not going to be seriously considered. He stated when he mentioned staff tries to allow for the most competition possible what he meant was that staff tries to allow as many firms to compete as possible.

Matt Wallace, Procurement Manager, explained when the request for conflict of interests comes in there is a team of Commission staff, project and program management consultants and legal staff weigh in on all these determinations. Ultimately, that decision

recommendation is provided to Anne Mayer and she makes the formal determination, which is provided back to the sub consultant or consultant requesting determination.

In response to Commissioner Lisa Middleton's clarification about adopting an oppose position and if staff worked with the Author of AB 626 to make amendments that would allow the Commission to either support or be neutral, Jillian Guizado replied that is typically the Commission's practice, however in this case the Commission did not.

John Standiford replied part of that had to do with the timing, as the Commission would definitely work with the Author's office to communicate the Commission's concerns as this moves forward.

Commissioner Ben Benoit stated if that is the case and the Commission is looking to work with the Author, does the Commission consider there is language it can support and if so why would the Commission be taking an oppose unless amended position and provide some recommended support language.

Steve DeBaun replied the Commission has draft language that could be presented ensuring local control would be maintained, however this language has not been presented since Commission staff has not reviewed it yet.

Commissioner Benoit suggested the recommendation is opposition unless amended and that Commission staff find some language that works with the Commission's current procurement policy.

Commissioner Vinton expressed appreciation for Mr. Feenstra's example from design to construction management there is a definite conflict of interest there. He suggested it would be easy when going through the process to say no there is a conflict. He stated he does not see a conflict between a preliminary design and detailed design work for plans, specifications, and estimate in that of itself.

Commissioner Speake stated being on the other side as a consultant, they do enter into these conflicts sometimes. He explained one of their clients is Caltrans therefore whenever working on their projects he is not on the design side he usually does the biological studies and permitting. Commissioner Speake discussed when being on a team as a sub consultant there are primes that will not use him, as they do not want to submit a conflict, which can be seen as a negative. He supports Commissioner Benoit's proposed recommendation.

M/S/C Benoit/Speake) to:

1) Adopt the following bill position:
a) AB 626 (Quirk-Silva) *Oppose unless amended and work with the Authur to find language that works with the Commission's current procurement*; and
2) Receive and file an update on state and federal legislation.

Abstain: Vinton

10. MODIFICATIONS TO 2019 CALL BOX PROGRAM UPGRADE/REDUCTION PLAN

Brian Cunanan, Commuter and Motorist Assistance Manager, presented the call box program optimization update, highlighting the following areas:

- Optimization Plan Update:
- March Commission Approval – Call box upgrade and reduction plan reduce from 234 to 151 call boxes; Program sunset end of FY 2023/24; CASE Systems Amendment through June 30, 2020; and SBCTA and OCTA Agreement for shared call answering services for call box operations and future 511 motorist assistance services;
- Approved 2019 Call Box Plan:
  - 3G Network Obsolete after December 31, 2019/reduction criteria 833 removals
  - 234 call box (current)/reduce to 151 call boxes
  - 4G Upgrade Cost $211,000 one-time/4G Upgrade Cost $136,000 one time
  - Project maintenance costs: $560,000 over 5 years/project maintenance costs: $326,000 over 5 years
- Approved 2019 Call Box Plan Map
- Commissioner requests/suggestions:
  - Traffic volumes: was not a reliable indicator of call box usage to apply system wide
  - Adjacency: there are 31 call boxes within one mile of another call box or service that were not recommended for removal due to a combination of considerations including usage and grade
  - 511 Signage Outreach: Mobile 511 call box program will launch in 2020
- Highways of Concern:
  - I-10 – 12 Call boxes of the 94 total on the I-10 are slated for removal in the approved Call Box Plan
  - SR-78 – 3 Call boxes of the 3 total on SR-78 are slated for removal in the approved Call Box Plan due to low usage
  - SR-86 – 8 Call boxes of 8 total are slated for removal due to low usage and/or proximity to amenities/services

- SR-111 – 1 Call box of the 3 total is slated for removal due to being a B site type configuration
- US-95 – A total of 2 call boxes are slated for removal due to low usage and both are C site type configurations

- Modified 2019 Call Box Plan Map – Recommendation to keep five call boxes to reduce from 234 to 156 call boxes

John Standiford expressed appreciation to the Commissioners that provided feedback after this was presented at its March Commission meeting. Staff is essentially trying to strike a balance between public safety and the cost concerns and this plan gets to that goal. He stated a 2024 sunset has been identified and it could be revisited sooner, in the mean time staff wanted to address any of the Commissioners concerns, which each one of those areas were addressed.

Commissioner Speake expressed appreciation for taking the 511 suggestion very seriously and since the Commission is moving forward with that, he requested as the Commission transitions over to that program to have 511 signage out there for motorists so when they see a motorist they can call. He expressed it is a great program and is looking forward to seeing that all over the County.

M/S/C (Berkson/Vargas) to approve modifications to the 2019 Call Box Upgrade and Reduction Plan (CB Plan) approved at the March Commission meeting.

No: Zimmerman

11. ITEM(S) PULLED FROM CONSENT CALENDAR FOR DISCUSSION

There were no items pulled from the Consent Calendar.

12. COMMISSIONERS/EXECUTIVE DIRECTOR'S REPORT

12A. Commissioner Smith announced the Commission had approved the SR-60 Truck Lanes Project with great impact coming. He reminded staff to coordinate some informational meetings to those cities in the Pass Area and surrounding that may be impacted by this upcoming project. He expressed appreciation the Commission staff met with his staff and another council member and explained step-by-step of what to expect related to the impacts.

John Standiford stated there will be a SR-60 Truck Lanes Project presentation at its May Commission meeting.

12B. Commissioner Zimmerman requested when the Commission meeting adjourns to do so in memory of CHP Sergeant Steve Licon.

12C. Commissioner Rusty Bailey expressed appreciation Aaron Hake, Government Relations Director, presented #ReBootMyCommute at the city of Riverside City Council meeting as it was very well received. He encouraged other Commissioners to have a similar presentation at their city council chambers. Commissioner Bailey announced at the Annual Workshop he mentioned the Santa Ana River Trail and was reminded that CV Link is a great project for Eastern County and the Santa Ana River Trail is another great project that is unfinished in Western Riverside County. There is some funding from the state through the Santa Ana River Conservancy to finish that off and requested staff to report back on the progress and what is left unfinished related to the Santa Ana River Trail.

12D. Commissioner Michael Vargas announced this is the last weekend for Thomas the Train at the Orange Empire Railway Museum in the city of Perris.

12E. Commissioner Harnik stated that regarding #ReBootMyCommute the city of Palm Desert added all the contact information into their citywide newsletter as that information the Commission collects from there is invaluable. She recommended all the cities provide that information to their community members as it is a great asset the Commission. Commissioner Harnik announced May 1-3 is the Southern California Association of Governments' General Assembly held in the city of Palm Desert.

12F. Chair Washington encouraged supporting the mountain communities such as Idyllwild, Pine Cove, and the others that have been affected by the closure of State Highways 243 and 74, which are the most convenient routes used by tourists. He asked Mike Beauchamp, Caltrans District to provide an update on the closure.

Mike Beauchamp stated that recently they opened the route from Idyllwild to Lake Fulmore and Caltrans is working 24 hours a day trying to get escort service in the next two to three weeks up SR-74.

13. CLOSED SESSION

13A. CONFERENCE WITH REAL PROPERTY NEGOTIATORS

Pursuant to Government Code Section 54956.8
Agency Negotiator: Executive Director or Designee

Item	APN(s)	Property Owner	Buyer(s)
1	117-113-002, 117-113-003, and 117-113-004	Riverside County Transportation Commission	Maria Calderon

2	117-121-003, 117-121-008, and 117-121-009	Riverside County Transportation Commission	Maria G. Ramos

There were no announcements from the Closed Session Items.

16. ADJOURNMENT

There being no further business for consideration by the Riverside County Transportation Commission, Chair Washington adjourned the meeting in honor of CHP Sergeant Steve Licon's memory at 10:55 a.m. The next Commission meeting is scheduled to be held at 9:30 a.m., Wednesday, May 8, 2019, Board Chambers, First Floor, County Administrative Center, 4080 Lemon Street, Riverside.

Respectfully submitted,

Lisa Mobley
Clerk of the Board

AGENDA ITEM 7

PUBLIC HEARING

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Mark Lancaster, Right of Way Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Adopt Two Resolutions of Necessity for the Acquisition of Fee and Temporary Construction Easement Interests in All or Portions of Certain Real Property, by Eminent Domain, More Particularly Described as Assessor Parcel Nos. 305-050-051 and 305-050-055 (CPNs 1009 and 1010), and Assessor Parcel No. 305-060-010 (CPN 1012), Located in Perris, Riverside County, California, for the Construction of an Interchange at the Intersection of Interstate 215 and Placentia Avenue, in Riverside County, California

Staff Recommendation:

This item is for the Commission to:

1) Conduct a hearing to consider the adoption of resolutions of necessity, including providing all parties interested in the affected properties and their attorneys, or their representatives, an opportunity to be heard on the issues relevant to the resolutions of necessity;
2) Make the following findings as hereinafter described in this report:
   a) The public interest and necessity require the proposed project;
   b) The project is planned or located in a manner that will be most compatible with the greatest public good and the least private injury;
   c) The real property to be acquired is necessary for the project; and
   d) The offer of just compensation has been made to the property owner.
3) Adopt Resolutions of Necessity Nos. 19-005 and 19-006, "*Resolutions of Necessity for the Acquisition of Fee and Temporary Construction Easement Interests in All or Portions of Certain Real Property, by Eminent Domain, More Particularly Described as Assessor Parcel Nos. 305-050-051 and 305-050-055 (CPNs 1009 and 1010), and Assessor Parcel No. 305-060-010 (CPN 1012), located in Perris, Riverside County, California*," for the construction of an interchange at the intersection of Interstate 215 and Placentia Avenue, in Riverside County, California.

***BACKGROUND INFORMATION*:**

The Commission is being asked to consider the adoption of two resolutions of necessity declaring its intent to acquire fee and temporary construction easement interests in all or in portions of certain real property, by eminent domain, more particularly described as Assessor Parcel Nos.

305-050-051 and 305-050-055 (CPNs 1009 and 1010), and Assessor Parcel No. 305-060-010 (CPN 1012), for the construction of an interchange at the intersection of I-215 and Placentia Avenue, as part of Mid County Parkway Project (the Project).

The immediate need for the property acquisitions is to proceed with the construction of the I-215/Placentia Avenue interchange. The acquisitions are required for and will benefit the community by providing additional lanes on Placentia Avenue between Indian Avenue and Harvill Avenue, as well as a new freeway access point with entrance and exit ramps to I-215 from Placentia Avenue.

Preliminary title reports and/or litigation guarantees were obtained from Commonwealth Title Insurance Company to confirm and identify the record owners of the parcels affected by the Project. The Commission then served the affected property owners with notices of the Commission's decision to appraise the property.

The Commission had the properties appraised and made offers to the record owners. Negotiations have been unsuccessful for the purchase of the interests necessary for the Project. The adoption of resolutions of necessity for the interests will not prevent negotiations from continuing.

Since an agreement has not been reached with the owners of record, it is necessary to acquire the fee and temporary construction easement interests described in the attachments by eminent domain. The initiation of the eminent domain process is accomplished by the Commission's adoption of resolutions of necessity for the affected property.

Description Of Property To Be Acquired:

1. Assessor Parcel Nos. 305-050-051 and 305-050-055 (CPNs 1009 and 1010), the Larger Parcels are owned by Robert Barker and Dorothy Jo Barker, Trustees of the Barker Family Trust. The property is located in Perris, Riverside County, California and has no situs address. The property is a vacant lot located along the east and west sides of East Frontage Road, between Placentia Avenue and Walnut Avenue, in the city of Perris. The design of the Project requires that the Commission acquire both fee and temporary construction interests in both parcels for the construction of the northbound entrance ramp and the realignment of the East Frontage Road. The legal definitions, legal descriptions and plat maps of the portions to be acquired are attached and marked as Exhibit A.

2. Assessor Parcel No. 305-060-010 (CPN 1012) is owned by Chang Z. Kim, Young H. Kim and Grant S. Kim. The property is located in Perris, Riverside County, California and has no situs address. The property is vacant. The design of the Project requires that the Commission acquire the entire parcel to construct the south half of Placentia Avenue as well as the construction of a detention basin for storm water runoff. The legal description and map of the property to be acquired is attached.

Project Description:

I-215 In and Near Perris from south of Perris Boulevard Undercrossing to north of Oleander Avenue Overcrossing. Propose is to improve the existing Interstate 215 (I-215) by adding an interchange at Placentia Avenue in the City of Perris. The proposed improvements include construction of new northbound and southbound on and off ramps on the east and west side of I-215 at Placentia Avenue, relocation of the East Frontage Road, removal of the West Frontage Road connection to Placentia Avenue, widen Placentia Avenue bridge and overcrossing from 2 to 6 lanes between Harvill Avenue on the west and Indian Avenue on the east, install High Occupancy Vehicle by pass lane and ramp metering on the on-ramps, construct drainage improvements, install new traffic signals on Placentia Avenue at Harvill Avenue, Indian Avenue, East Frontage Road, and at the ramp intersections, and Install advance freeway overhead signs.

Hearings And Required Findings:

The action requested of the Commission at the conclusion of this hearing is the adoption of resolutions of necessity, authorizing the acquisition of real property interests by eminent domain. The property owners are:

Robert Barker and Dorothy Jo Barker, Trustees of the Barker Family Trust: part acquisition of fee and temporary construction easement interests;

Chang Z. Kim, Young H. Kim, and Grant S. Kim: full acquisition in fee.

The properties are further identified in the legal definitions, descriptions and depictions attached hereto as Exhibits A and B, respectively.

California eminent domain law provides that a public entity may not commence with eminent domain proceedings until its governing body has adopted a resolution of necessity, which resolution may only be adopted after the governing body has given each party with an interest in the affected property, or their representatives, a reasonable opportunity to appear and be heard on the following matters:

1. The public interest and necessity require the proposed project;
2. The project is planned or located in a manner that will be most compatible with the greatest public good and the least private injury;
3. The real property to be acquired is necessary for the project; and
4. The offer of just compensation has been made to the property owner.

Notices of the hearing were sent by first class mail to the property owners, and stated the Commission's intent to consider the adoption of resolutions, the right of the property owners to appear and be heard on these issues, and that failure to file a written request to appear would result in a waiver of the right to appear and be heard. The Commission has scheduled this hearing

at which all persons who filed a written request within 15 days of the date of notice was mailed may appear and be heard. The Commission's legal counsel mailed the required notices to the property owners, on March 7, 2019, in accordance with the California Code of Civil Procedure, section 1245.235.

The property owners were also invited to meet with Commission and Caltrans staff to address any concerns the property owners may have with the design of the Project in the manner proposed and the necessity of the acquisition.

The four required findings are addressed as follows:

Finding 1: Public Interest And Necessity Require The Proposed Project

The Project will reduce traffic congestion and enhance safety, and will ensure compliance with Caltrans' standards for design.

Finding 2: The Project Is Planned Or Located In A Manner That Will Be Most Compatible With The Greatest Public Good And The Least Private Injury

A thorough analysis was conducted to find the single best location for this Project. Environmental analyses and findings indicate that these sites uniquely satisfy the engineering, public health, and environmental issues, and these locations are the most compatible with the greatest public good. These locations will result in the least private injury.

Finding 3: The Property Sought To Be Acquired Is Necessary For The Proposed Project

As described above, a careful analysis was performed regarding these locations and what property and property rights were needed, and these parcels meet all the desired characteristics for the construction of the improvements for the Project. Based on that analysis, the acquisition of the properties is necessary for construction of the Project,

Finding 4: The Offer Of Just Compensation Has Been Made

Appraisals were prepared by the Commission's appraiser Joyce L. Riggs, MAI, SR/WA, of Riggs & Riggs, Inc., to establish the fair market value of the real property the Commission is seeking to acquire from the interest owned by the property owners identified herein. Offers of just compensation were made to the property owners to purchase the property interests, based on the approved appraisals, as required by Section 7267.2 of the California Government Code. Although negotiated settlements may still be possible, it would be appropriate to commence the procedures to acquire the interests sought through eminent domain, to ensure that the property will be available to meet the time frames associated with the construction of the I-215/Placentia Interchange.

Environmental Analysis:

Compliance with the California Environmental Quality Act has been satisfied by the Commission's certification of an Environmental Impact Report in its role as lead agency on April 8, 2015.

Fiscal Impact:

No fiscal impact.

Notice of Public Hearing:

Notices of Hearing to Property Owners were mailed on March 7, 2019, to Robert Barker; Dorothy Jo Barker; Chang Z. Kim, Young H. Kim, and Grant S. Kim, the owners of record.

Attachments:
1) Resolution No. 19-005
2) Resolution No. 19-006

RESOLUTION NO. 19-005

RESOLUTION OF NECESSITY FOR THE ACQUISITION OF FEE AND TEMPORARY CONSTRUCTION EASEMENT INTERESTS IN ALL OR PORTIONS OF CERTAIN REAL PROPERTY, BY EMINENT DOMAIN, MORE PARTICULARLY DESCRIBED AS ASSESSOR PARCEL NOS. 305-050-051 AND 305-050-055 (CPNs 1009 AND 1010), LOCATED IN PERRIS, RIVERSIDE COUNTY, CALIFORNIA, FOR THE CONSTRUCTION OF AN INTERCHANGE AT THE INTERSECTION OF INTERSTATE 215 AND PLACENTIA AVENUE, IN RIVERSIDE COUNTY, CALIFORNIA

WHEREAS, the Riverside County Transportation Commission (the "Commission") proposes to acquire fee and temporary construction easement interests in certain real property, located in Riverside County, California, more particularly described as Assessor Parcel Nos. 305-050-051 and 305-050-055 (CPNs 1009 and 1010), for the construction of an interchange at the intersection of Interstate 215 and Placentia Avenue, in Riverside County, California, pursuant to the authority granted to it by section 130220.5 of the California Public Utilities Code; and

WHEREAS, pursuant to section 1245.235 of the California Code of Civil Procedure, the Commission scheduled a public hearing for Wednesday, May 8, 2019 at 9:30 a.m., at the County Administration Building, Board of Supervisors Chambers, at 4080 Lemon Street, Riverside, California, and gave to each person whose property is to be acquired and whose name and address appeared on the last equalized county assessment roll, notice and a reasonable opportunity to appear at said hearing and be heard on the matters referred to in section 1240.030 of the California Code of Civil Procedure; and

WHEREAS, said hearing has been held by the Commission, and the affected property owner was afforded an opportunity to be heard on said matters; and

WHEREAS, the Commission may now adopt a Resolution of Necessity pursuant to section 1240.040 of the California Code of Civil Procedure;

NOW, THEREFORE, THE COMMISSION DOES HEREBY RESOLVE AND DECLARE AS FOLLOWS:

Section 1. Compliance with California Code of Civil Procedure. There has been compliance by the Commission with the requirements of section 1245.235 of the California Code of Civil Procedure regarding notice and hearing.

Section 2. Public Use. The public use for the fee and temporary construction easement interests in the property to be acquired is for the Mid County Parkway Project in Riverside County, California. Section 130220.5 of the California Public Utilities Code authorizes the Commission to acquire, by eminent domain, property necessary for such purposes.

Section 3. Description of Property. Attached and marked as Exhibit "A" are the legal definitions, legal descriptions and plat maps, respectively, of the interests to be acquired by the

Commission, which describe the general location and extent of the property with sufficient detail for reasonable identification.

Section 4. Findings. The Commission hereby finds and determines each of the following:

(a) The public interest and necessity require the proposed project;

(b) The proposed project is planned or located in the manner that will be most compatible with the greatest public good and least private injury;

(c) The property defined and described in Exhibit "A" is necessary for the proposed project; and

(d) The offer required by section 7267.2 of the California Government Code was made.

Section 5. Use Not Unreasonably Interfering with Existing Public Use. Some or all of the real property affected by the interest to be acquired is subject to easements and rights-of-way appropriated to existing public uses. The legal descriptions of these easements and rights-of-way are on file with the Commission and describe the general location and extent of the easements and rights-of-way with sufficient detail for reasonable identification. In the event the herein described use or uses will not unreasonably interfere with or impair the continuance of the public use as it now exists or may reasonably be expected to exist in the future, counsel for the Commission is authorized to acquire the herein described interest subject to such existing public use pursuant to section 1240.510 of the California Code of Civil Procedure.

Section 6. More Necessary Public Use. Some or all of the real property affected by the interest to be acquired is subject to easements and rights-of-way appropriated to existing public uses. To the extent that the herein described use or uses will unreasonably interfere with or impair the continuance of the public use as it now exists or may reasonably be expected to exist in the future, the Commission finds and determines that the herein described use or uses are more necessary than said existing public use. Counsel for the Commission is authorized to acquire the herein described real property appropriated to such existing public uses pursuant to section 1240.610 of the California Code of Civil Procedure. Staff is further authorized to make such improvements to the affected real property that it determines are reasonably necessary to mitigate any adverse impact upon the existing public use.

Section 7. Further Activities. Counsel for the Commission is hereby authorized to acquire the hereinabove described real property in the name of and on behalf of the Commission by eminent domain, and counsel is authorized to institute and prosecute such legal proceedings as may be required in connection therewith. Legal counsel is further authorized to take such steps as may be authorized and required by law, and to make such security deposits as may be required by order of

court, to permit the Commission to take possession of and use said real property at the earliest possible time. Counsel is further authorized to correct any errors or to make or agree to non-material changes in the legal description of the real property that are deemed necessary for the conduct of the condemnation action, or other proceedings or transactions required to acquire the subject real property.

Section 8. Effective Date. This Resolution shall take effect upon adoption.

APPROVED AND ADOPTED this 8th day of May, 2019.

_____
Chuck Washington, Chair
Riverside County Transportation Commission

ATTEST:

_____
Lisa Mobley, Clerk of the Board
Riverside County Transportation Commission

EXHIBIT "A"
FEE
LEGAL DESCRIPTION
APN: 305-050-051

BEING THAT PORTION OF THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 4 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, LYING IN THE CITY OF PERRIS, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA AS DESCRIBED IN GRANT DEED RECORDED JULY 18, 1963 AS INSTRUMENT NUMBER 1963-75284, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LAND AS SHOWN ON THE MONUMENTATION MAP FILED AS RIV.CO 205-228, RECORDS OF SAID COUNTY, SAID CORNER BEING THE INTERSECTION OF THE EAST LINE OF EAST FRONTAGE ROAD AND NORTH LINE OF PLACENTIA AVENUE AS SHOWN ON SAID MAP;

THENCE ALONG SAID NORTH LINE NORTH 85°19'34" WEST 47.78 FEET TO THE **TRUE POINT OF BEGINNING**;

THENCE CONTINUING ALONG SAID NORTH LINE NORTH 85°19'34" WEST 241.52 FEET TO THE EASTERLY LINE OF ROUTE 215 AS SHOWN ON SAID MAP;

THENCE ALONG SAID EASTERLY LINE THE FOLLOWING FIVE (5) COURSES:

1. NORTH 52°27'32" WEST 88.82 FEET;
2. NORTH 23°42'21" WEST 228.45 FEET;
3. NORTH 37°23'17" WEST 597.88 FEET;
4. NORTH 35°20'14" WEST 525.49 FEET;
5. NORTH 29°26'54" WEST 148.20 FEET TO THE CENTERLINE OF WALNUT STREET (30.00 FOOT HALF-WIDTH) AS ON SHOWN ON THE MONUMENTATION MAP FILED AS RIV.CO 205-229, RECORDS OF SAID COUNTY;

THENCE ALONG SAID CENTERLINE SOUTH 88°05'02" EAST 20.11 FEET;

THENCE LEAVING SAID CENTERLINE SOUTH 32°01'59" EAST 233.74 FEET;

THENCE SOUTH 38°13'23" EAST 327.06 FEET;

THENCE SOUTH 46°06'37" EAST 463.29 FEET;

THENCE SOUTH 56°58'44" EAST 270.26 FEET TO THE BEGINNING OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 504.00 FEET;

THENCE SOUTHEASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 43°40'40" AN ARC LENGTH OF 384.21 FEET;

THENCE SOUTH 13°18'04" EAST 87.21 FEET TO THE **TRUE POINT OF BEGINNING**.

THE ABOVE DESCRIBED PARCEL CONTAINS 179,806 SQUARE FEET OR 4.128 ACRES, MORE OR LESS.

THIS DESCRIPTION WAS PREPARED BY ME, OR UNDER MY DIRECTION, IN CONFORMANCE WITH THE PROFESSIONAL LAND SURVEYORS' ACT.

BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 6 (NAD83) 1991.35 EPOCH. DIVIDE GRID DISTANCES SHOWN BY .999924951 TO OBTAIN GROUND LEVEL DISTANCES.

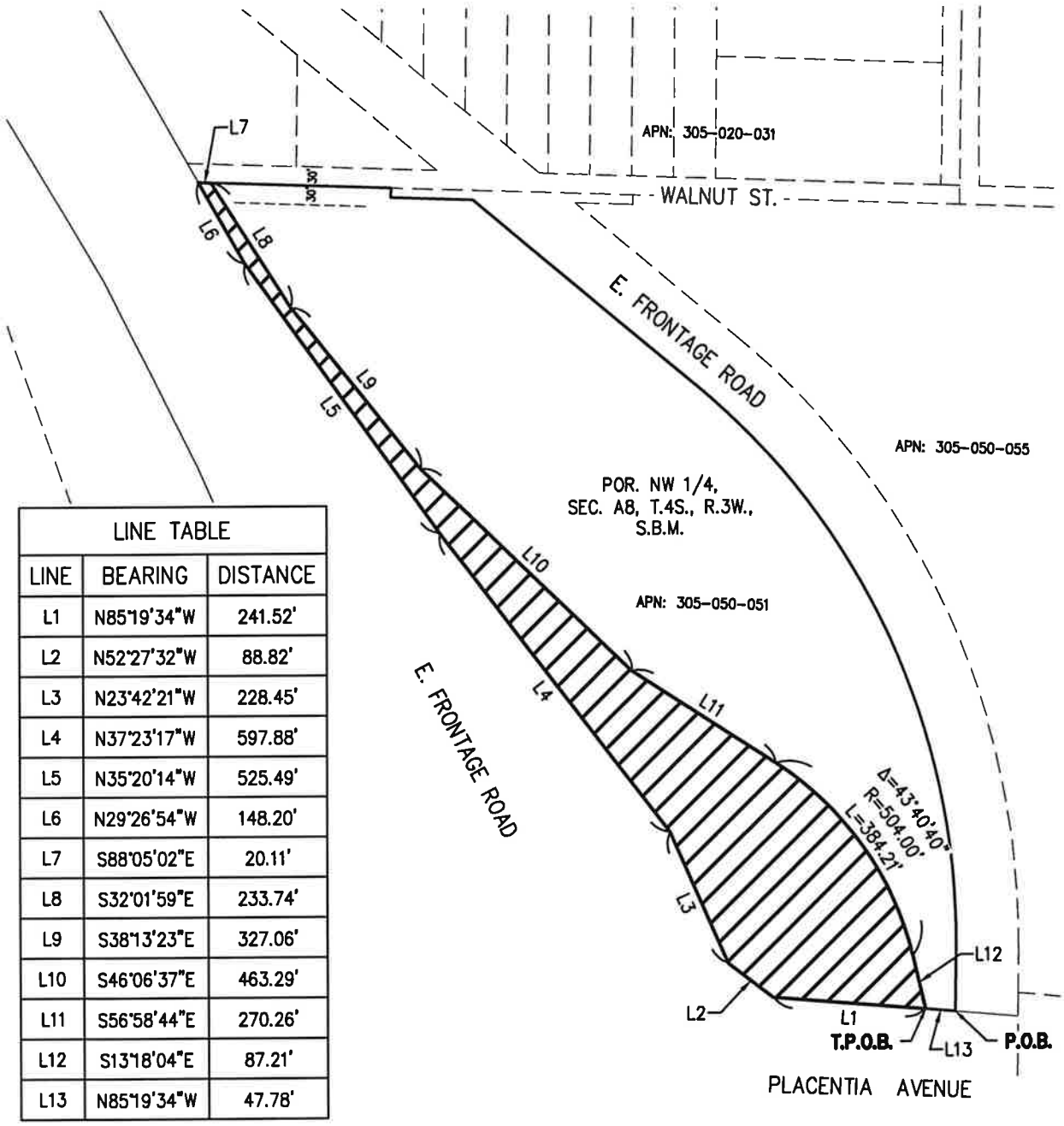
AS SHOWN ON EXHIBIT "B" ATTACHED HEREWITH AND MADE A PART HEREOF.

PREPARED BY ME OR UNDER MY DIRECTION.

_____

JAMES R. RIOS, PLS 8823 DATE

EXHIBIT "B"



LINE TABLE		
LINE	BEARING	DISTANCE
L1	N85°19'34"W	241.52'
L2	N52°27'32"W	88.82'
L3	N23°42'21"W	228.45'
L4	N37°23'17"W	597.88'
L5	N35°20'14"W	525.49'
L6	N29°26'54"W	148.20'
L7	S88°05'02"E	20.11'
L8	S32°01'59"E	233.74'
L9	S38°13'23"E	327.06'
L10	S46°06'37"E	463.29'
L11	S56°58'44"E	270.26'
L12	S13°18'04"E	87.21'
L13	N85°19'34"W	47.78'

BEARINGS AND DISTANCES ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF OF 1983 (EPOCH 1991.35), ZONE VI. ALL NON-RECORD DISTANCES ARE GRID DISTANCES. TO OBTAIN GROUND DISTANCES DIVIDE GRID DISTANCES SHOWN BY 0.999924951.

SCALE
1" = 100'
SHEET 1 OF 1

LEGEND

DESCRIPTION AREA
179,806 SQ. FT / 4.128 ACRES

AFFECTED PROPERTY

CENTERLINE

ADJACENT PROPERTY

TOWILL | Surveying, Mapping and GIS Services
10390 Commerce Center Drive, Suite C-190
Rancho Cucamonga, CA 91730-5858
(909) 303-7960 - www.towill.com

J:\EO Jobs\15238 RCTC I215-Placentia\Office\Legals\305-050-051 (1009)\305-050-051a.dwg, Jul 30, 2018 - 6:28pm

EXHIBIT "A"
Fee
LEGAL DESCRIPTION
APN: 305-050-055

BEING THAT PORTION OF THE LAND DESCRIBED IN GRANT DEED RECORDED JULY 18, 1963 AS INSTRUMENT NO. 75284, OFFICIAL RECORDS OF RIVERSIDE COUNTY, LYING EASTERLY OF EAST FRONTAGE ROAD (100.00 FEET WIDE) AS SHOWN ON THE MONUMENTATION MAPS FILED AS RIV. CO. 205-228 AND 205-229, LYING IN THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 4 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF PERRIS, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF EAST FRONTAGE ROAD WITH THE CENTERLINE OF PLACENTIA AVENUE AS SHOWN ON SAID MAP;

THENCE ALONG THE EASTERLY LINE OF SAID EAST FRONTAGE ROAD NORTH 00°33'54" EAST 131.94 FEET;

THENCE LEAVING SAID EASTERLY LINE SOUTH 84°26'24" EAST 256.37 FEET;

THENCE NORTH 47°27'08" EAST 72.93 FEET TO THE WESTERLY LINE OF A 100.00 WIDE STRIP OF LAND, SAID WESTERLY LINE BEING A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 750.00 FEET, A RADIAL LINE THROUGH SAID BEGINNING BEARS NORTH 82°21'07" EAST, THE CENTERLINE OF SAID STRIP BEING MORE PARTICULARLY DESCRIBED BELOW AS **STRIP "A"**;

THENCE NORTHERLY ALONG SAID WESTERLY LINE THROUGH A CENTRAL ANGLE OF 42°20'54", AN ARC LENGTH OF 554.34 FEET;

THENCE NORTH 49°59'47" WEST 238.11 FEET TO A POINT ON THE EASTERLY LINE OF SAID EAST FRONTAGE ROAD, SAID EASTERLY LINE BEING A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 1250.00 FEET, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 63°04'39" EAST;

THENCE NORTHERLY ALONG SAID EASTERLY LINE THROUGH A CENTRAL ANGLE OF 23°04'26", AN ARC LENGTH OF 503.40 FEET TO THE EASTERLY LINE OF SAID **STRIP "A"**;

THENCE ALONG SAID EASTERLY LINE SOUTH 49°59'47" EAST 728.01 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 850.00 FEET;

THENCE SOUTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 23°45'26", AN ARC LENGTH OF 352.45 FEET TO THE EAST LINE OF SAID LAND;

THENCE ALONG SAID EAST LINE SOUTH 00°32'51" WEST 442.06 FEET TO THE SOUTHEAST CORNER OF SAID LAND;

THENCE ALONG THE SOUTH LINE OF SAID LAND NORTH 88°18'04" WEST 325.17 FEET TO THE **POINT OF BEGINNING**;

THE ABOVE DESCRIBED PARCEL CONTAINS 127,357 SQUARE FEET OR 2.924 ACRES, MORE OR LESS.

STRIP "A":

COMMENCING AT THE INTERSECTION OF THE EASTERLY LINE OF EAST FRONTAGE ROAD WITH THE CENTERLINE OF PLACENTIA AVENUE AS SHOWN ON THE MONUMENTATION MAP FILED AS RIV.CO 205-228, RECORDS OF SAID COUNTY;

THENCE ALONG SAID CENTERLINE SOUTH 88°18'01" EAST 365.35 FEET TO THE POINT OF BEGINNING;

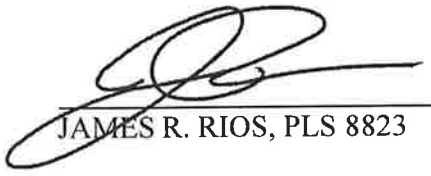
THENCE LEAVING SAID CENTERLINE NORTH 01°41'57" EAST 47.73 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 800.00 FEET;

THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 51°41'43", AN ARC LENGTH OF 721.80 FEET;

THENCE NORTH 49°59'47" WEST 846.26 FEET TO THE CENTERLINE OF EAST FRONTAGE ROAD AS SHOWN ON SAID MAP AND THE POINT OF TERMINATION;

BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 6 (NAD83) 1991.35 EPOCH. DIVIDE GRID DISTANCES SHOWN BY .999924951 TO OBTAIN GROUND LEVEL DISTANCES.

AS SHOWN ON EXHIBIT "B" ATTACHED HEREWITH AND MADE A PART HEREOF.
THIS DESCRIPTION WAS PREPARED BY ME, OR UNDER MY DIRECTION, IN CONFORMANCE WITH THE PROFESSIONAL LAND SURVEYORS' ACT.



07/30/2018

JAMES R. RIOS, PLS 8823 DATE

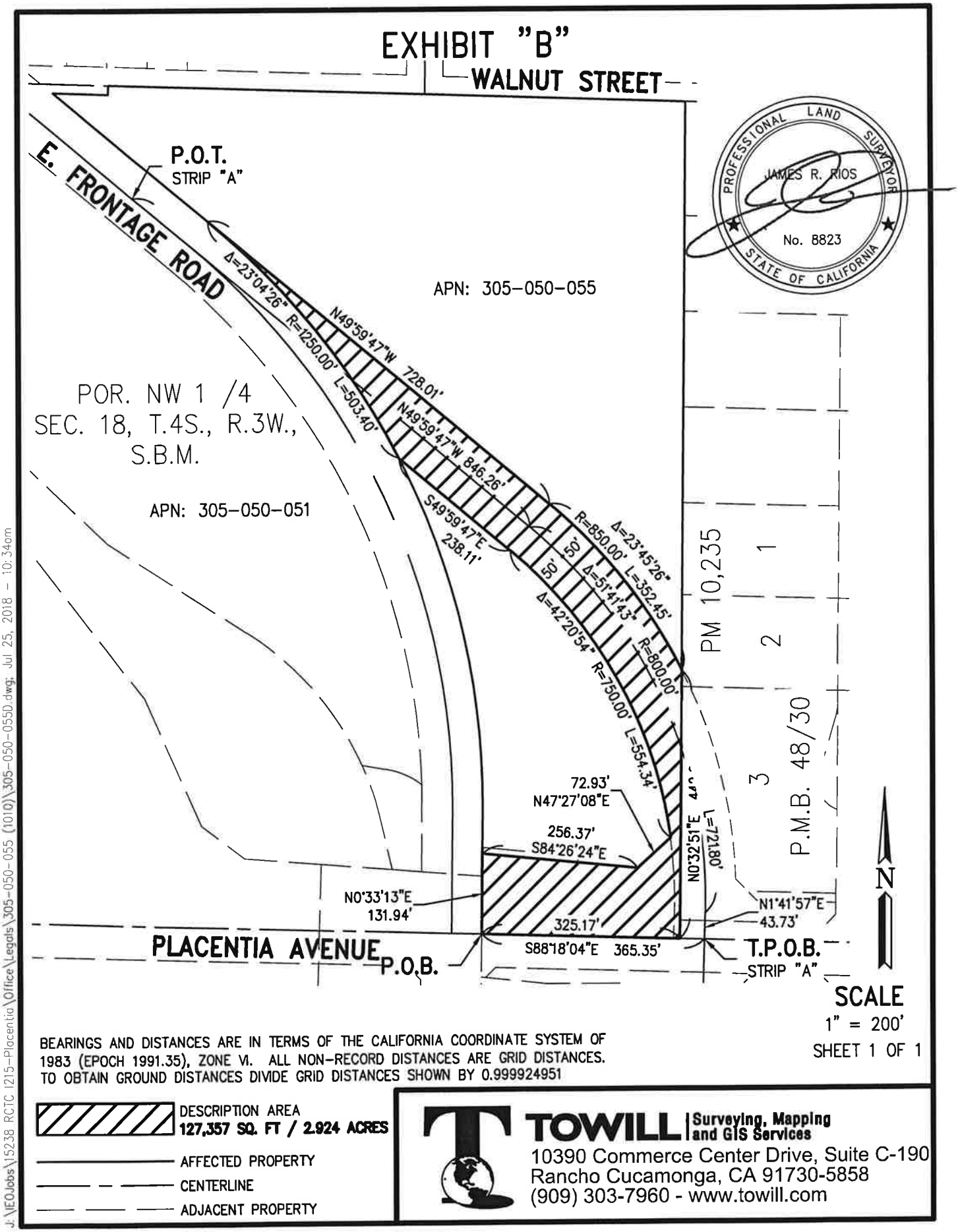


EXHIBIT "B"
WALNUT STREET
E. FRONTAGE ROAD
P.O.T.
STRIP "A"
Δ=23°04'26"
R=1250.00'
L=503.40'
N49°59'47"W 728.01'
N49°59'47"W 846.26'
S49°59'47"E
238.11'
R=850.00'
Δ=23°45'26"
L=352.45'
Δ=51°41'43"
R=800.00'
Δ=42°20'54"
R=750.00'
L=554.34'
APN: 305-050-055
POR. NW 1 /4
SEC. 18, T.4S., R.3W.,
S.B.M.
APN: 305-050-051
PM 10,235
1
2
3
P.M.B. 48/30
72.93'
N47°27'08"E
256.37'
S84°26'24"E
N0°32'51"E
L=721.08'
N0°33'13"E
131.94'
N1°41'57"E
43.73'
325.17'
S88°18'04"E 365.35'
PLACENTIA AVENUE
P.O.B.
T.P.O.B.
STRIP "A"
N
PROFESSIONAL LAND SURVEYOR
JAMES R. RIOS
No. 8823
STATE OF CALIFORNIA
SCALE
1" = 200'
SHEET 1 OF 1
BEARINGS AND DISTANCES ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF 1983 (EPOCH 1991.35), ZONE VI. ALL NON-RECORD DISTANCES ARE GRID DISTANCES. TO OBTAIN GROUND DISTANCES DIVIDE GRID DISTANCES SHOWN BY 0.999924951
DESCRIPTION AREA
127,357 SQ. FT / 2.924 ACRES
AFFECTED PROPERTY
CENTERLINE
ADJACENT PROPERTY
TOWILL | Surveying, Mapping and GIS Services
10390 Commerce Center Drive, Suite C-190
Rancho Cucamonga, CA 91730-5858
(909) 303-7960 - www.towill.com
J:\EOJobs\15238 RCTC I215-Placentia\Office\Legals\305-050-055 (1010)\305-050-055D.dwg, Jul 25, 2018 - 10:34am

EXHIBIT "A"
TEMPORARY CONSTRUCTION EASEMENTS
LEGAL DESCRIPTION
APN: 305-050-055

BEING THOSE PORTIONS OF THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 4 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, LYING IN THE CITY OF PERRIS, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA AS DESCRIBED IN GRANT DEED RECORDED JULY 18, 1963 AS INSTRUMENT NUMBER 1963-75284, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

STRIP 1:
BEING A STRIP OF LAND 10.00 FEET WIDE, THE SOUTHERLY LINE OF SAID STRIP MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF EAST FRONTAGE ROAD WITH THE CENTERLINE OF PLACENTIA AVENUE AS SHOWN ON THE MONUMENTATION MAP FILED AS RIV.CO 205-228, RECORDS OF SAID COUNTY;

THENCE ALONG SAID EASTERLY LINE NORTH 00°33'54" EAST 131.94 FEET TO THE **TRUE POINT OF BEGINNING**;

THENCE LEAVING SAID EASTERLY LINE SOUTH 84°26'24" EAST 157.69 FEET TO THE **POINT OF TERMINATION**;

THE ABOVE DESCRIBED PARCEL CONTAINS 1,581 SQUARE FEET OR 0.036 ACRES, MORE OR LESS.

STRIP 2:
BEING A STRIP OF LAND 10.00 FEET WIDE, THE NORTHEASTERLY LINE OF SAID STRIP MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF EAST FRONTAGE ROAD WITH THE CENTERLINE OF PLACENTIA AVENUE AS SHOWN ON THE MONUMENTATION MAP FILED AS RIV.CO 205-228, RECORDS OF SAID COUNTY;

THENCE ALONG SAID EASTERLY LINE NORTH 00°33'54" EAST 131.94 FEET;

THENCE LEAVING SAID EASTERLY LINE SOUTH 84°26'24" EAST 256.37 FEET;

THENCE NORTH 47°27'08" EAST 72.93 FEET TO THE WESTERLY LINE OF A 100.00-FOOT-WIDE STRIP OF LAND AND THE **TRUE POINT OF BEGINNING**, SAID WESTERLY LINE BEING A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 750.00 FEET, A RADIAL LINE THROUGH SAID BEGINNING BEARS NORTH 82°21'07" EAST, THE CENTERLINE OF SAID STRIP BEING MORE PARTICULARLY DESCRIBED BELOW AS **FUTURE STREET**;

THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 42°20'54" AN ARC LENGTH OF 554.34 FEET;

1

THENCE CONTINUING ALONG SAID WESTERLY LINE NORTH 49°59'47" WEST 102.90 FEET TO THE **POINT OF TERMINATION**;

THE ABOVE DESCRIBED PARCEL CONTAINS 25,380 SQUARE FEET OR 0.583 ACRES, MORE OR LESS.

STRIP 3:
BEING A STRIP OF LAND 10.00 FEET WIDE, THE SOUTHEASTERLY LINE OF SAID STRIP MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LAND;

THENCE ALONG THE EASTERLY LINE OF SAID LAND NORTH 00°32'51" EAST 442.06 FEET TO THE EASTERLY LINE OF A 100.00-FOOT-WIDE STRIP OF LAND AND THE **TRUE POINT OF BEGINNING**, SAID EASTERLY LINE BEING A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 850.00 FEET, A RADIAL LINE THROUGH SAID BEGINNING BEARS NORTH 63°45'39" EAST, THE CENTERLINE OF SAID STRIP BEING MORE PARTICULARLY DESCRIBED BELOW AS **FUTURE STREET**;

THENCE NORTHERLY ALONG SAID EASTERLY LINE THROUGH A CENTRAL ANGLE OF 13°13'20", AN ARC LENGTH OF 196.15 FEET TO THE **POINT OF TERMINATION**;

THE ABOVE DESCRIBED PARCEL CONTAINS 1,876 SQUARE FEET OR 0.430 ACRES, MORE OR LESS.

FUTURE STREET:
BEING A STRIP OF LAND 100.00 FEET WIDE, LYING WITHIN THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 4 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, LYING IN THE CITY OF PERRIS, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA AS DESCRIBED IN GRANT DEED RECORDED JULY 18, 1963 AS INSTRUMENT NUMBER 1963-75284, THE CENTERLINE OF SAID STRIP BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF EAST FRONTAGE ROAD WITH THE CENTERLINE OF PLACENTIA AVENUE AS SHOWN ON THE MONUMENTATION MAP;

THENCE ALONG SAID CENTERLINE SOUTH 88°18'01" EAST 365.35 FEET TO THE **TRUE POINT OF BEGINNING**;

THENCE LEAVING SAID CENTERLINE NORTH 01°41'57" EAST 47.73 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 800.00 FEET;

THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 51°41'43", AN ARC LENGTH OF 721.80 FEET;

THENCE NORTH 49°59'47" WEST 846.26 FEET TO THE CENTERLINE OF EAST

FRONTAGE ROAD AS SHOWN ON SAID MAP AND THE **POINT OF TERMINATION**;

BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 6 (NAD83) 1991.35 EPOCH. DIVIDE GRID DISTANCES SHOWN BY .999924951 TO OBTAIN GROUND LEVEL DISTANCES.

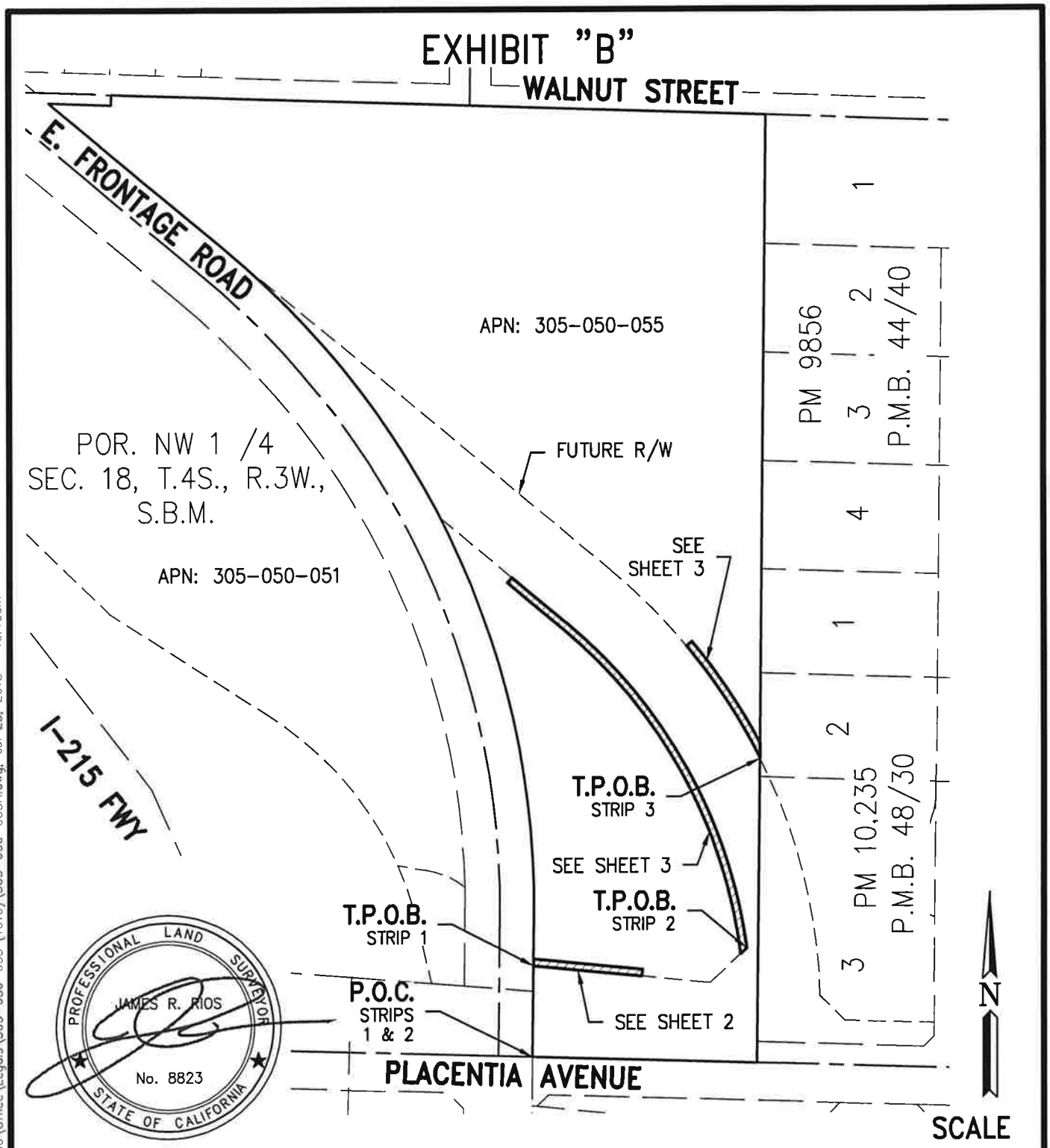
AS SHOWN ON EXHIBIT "B" ATTACHED HEREWITH AND MADE A PART HEREOF.

THIS DESCRIPTION WAS PREPARED BY ME, OR UNDER MY DIRECTION, IN CONFORMANCE WITH THE PROFESSIONAL LAND SURVEYORS' ACT.

07/30/2018

JAMES R. RIOS, PLS 8823 DATE

EXHIBIT "B"



PROFESSIONAL LAND SURVEYOR
JAMES R. RIOS
No. 8823
STATE OF CALIFORNIA

BEARINGS AND DISTANCES ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF 1983 (EPOCH 1991.35), ZONE VI. ALL NON-RECORD DISTANCES ARE GRID DISTANCES. TO OBTAIN GROUND DISTANCES DIVIDE GRID DISTANCES SHOWN BY 0.999924951

SCALE
1" = 200'
SHEET 1 OF 4

DESCRIPTION AREAS
10,027 SQ. FT / 0.230 ACRES

AFFECTED PROPERTY

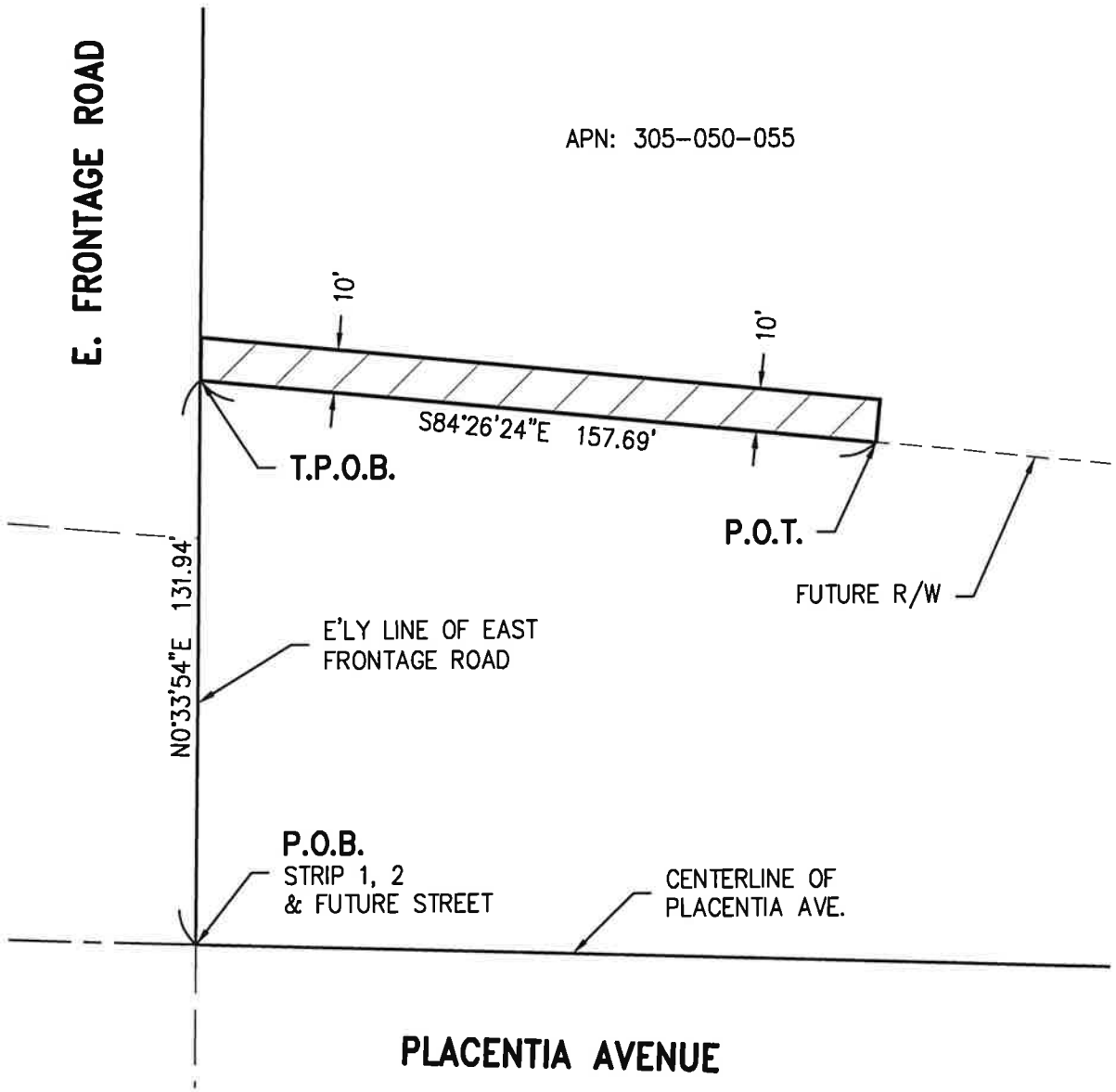
CENTERLINE

ADJACENT PROPERTY

TOWILL | Surveying, Mapping and GIS Services
10390 Commerce Center Drive, Suite C-190
Rancho Cucamonga, CA 91730-5858
(909) 303-7960 - www.towill.com

J:\EOJobs\15238 RCTC I215-Placentia\Office\Legals\305-050-055 (1010)\305-050-055A.dwg; Jul 23, 2018 - 10:10am

EXHIBIT "B"



SCALE
1" = 40'
SHEET 2 OF 2

BEARINGS AND DISTANCES ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF 1983 (EPOCH 1991.35), ZONE VI. ALL NON-RECORD DISTANCES ARE GRID DISTANCES. TO OBTAIN GROUND DISTANCES DIVIDE GRID DISTANCES SHOWN BY 0.999924951

DESCRIPTION AREA STRIP 1
1,581 SQ. FT / 0.036 ACRES

AFFECTED PROPERTY

CENTERLINE

ADJACENT PROPERTY

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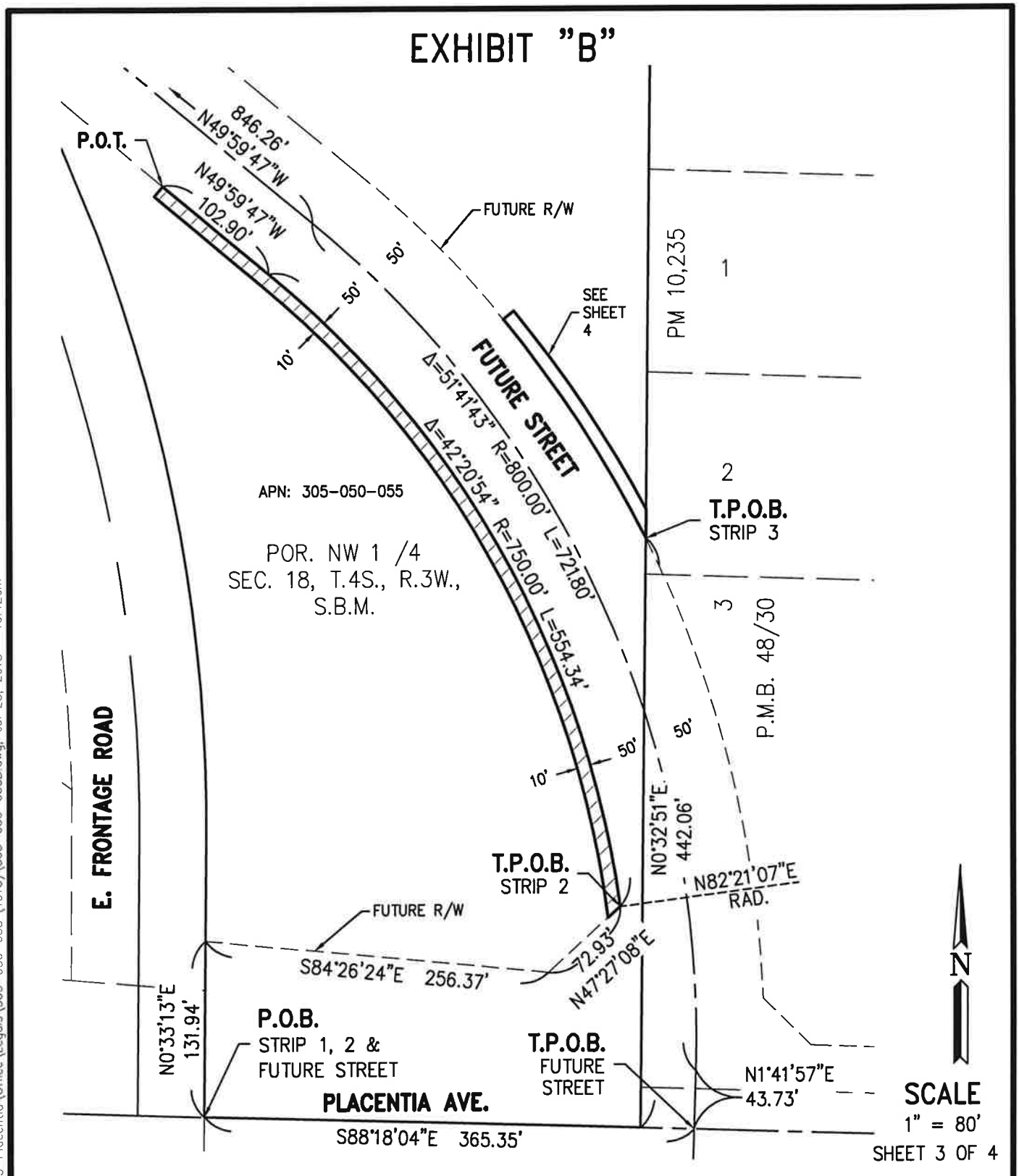
10390 Commerce Center Drive, Suite C-190
Rancho Cucamonga, CA 91730-5858
(909) 303-7960 - www.towill.com

J:\EOJobs\15238 RCTC I215-Placentia\Office\Legals\305-050-055 (1010)\305-050-055A.dwg; Jul 23, 2018 - 10:11am

EXHIBIT "B"



DESCRIPTION AREA STRIP 2
6,570 SQ. FT / 0.151 ACRES

AFFECTED PROPERTY

CENTERLINE

ADJACENT PROPERTY

TOWILL | Surveying, Mapping and GIS Services
10390 Commerce Center Drive, Suite C-190
Rancho Cucamonga, CA 91730-5858
(909) 303-7960 - www.towill.com

J:\EOJobs\15238 RCTC I215-Placentia\Office\Legals\305-050-055 (1010)\305-050-055B.dwg; Jul 23, 2018 - 10:12am

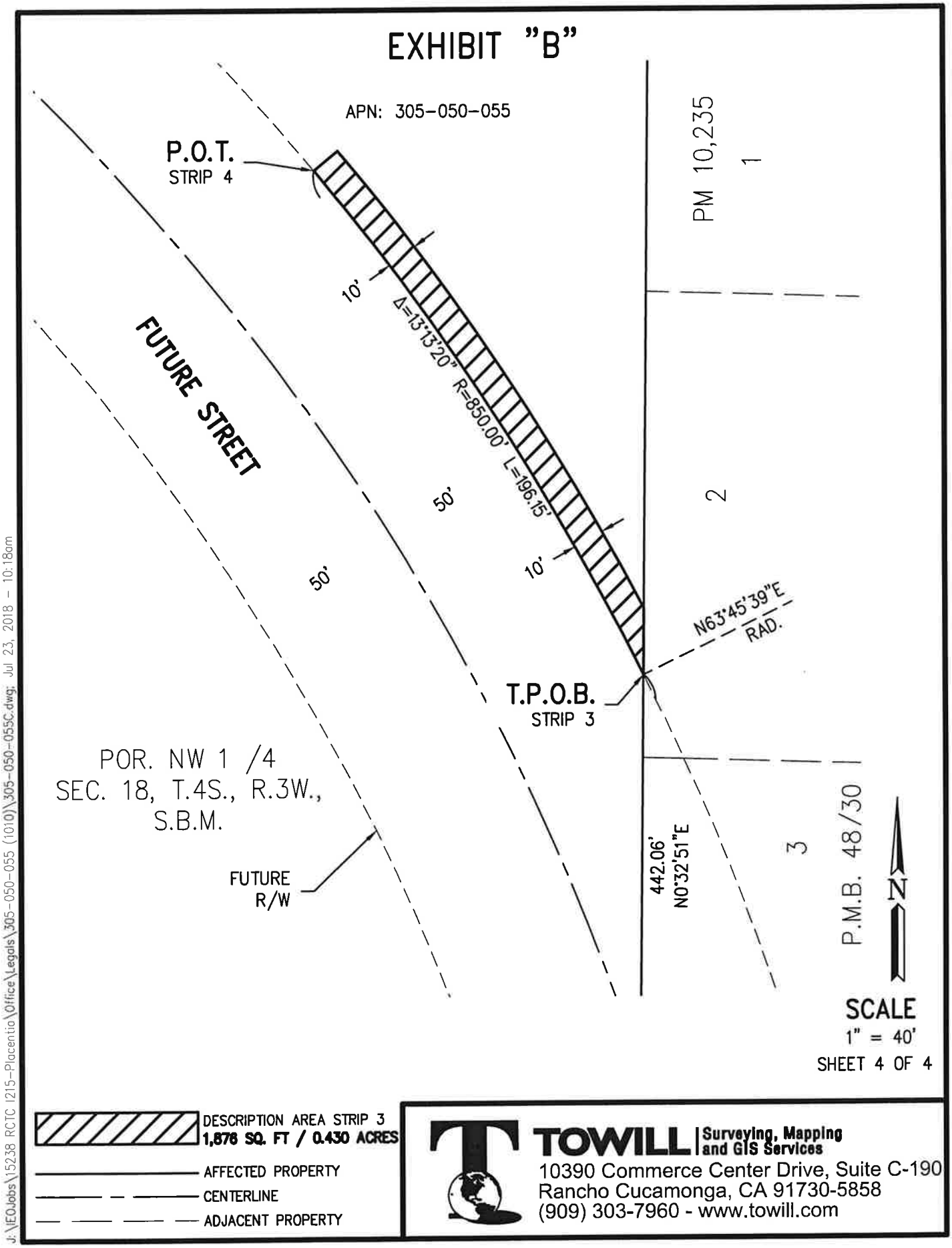


EXHIBIT "B"
APN: 305-050-055
P.O.T.
STRIP 4
10'
Δ=13°13'20" R=850.00' L=196.15'
10'
FUTURE STREET
50'
50'
PM 10,235
1
2
3
N63°45'39"E
RAD.
T.P.O.B.
STRIP 3
POR. NW 1 /4
SEC. 18, T.4S., R.3W.,
S.B.M.
FUTURE
R/W
442.06'
N0°32'51"E
P.M.B. 48/30
N
SCALE
1" = 40'
SHEET 4 OF 4
DESCRIPTION AREA STRIP 3
1,876 SQ. FT / 0.430 ACRES
AFFECTED PROPERTY
CENTERLINE
ADJACENT PROPERTY
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(909) 303-7960 - www.towill.com
J:\EOJobs\15238 RCTC I215-Placentia\Office\Legals\305-050-055 (1010)\305-050-055C.dwg; Jul 23, 2018 - 10:18am

EXHIBIT "A"
FEE
LEGAL DESCRIPTION
APN: 305-050-051

BEING THAT PORTION OF THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 4 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, LYING IN THE CITY OF PERRIS, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA AS DESCRIBED IN GRANT DEED RECORDED JULY 18, 1963 AS INSTRUMENT NUMBER 1963-75284, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LAND AS SHOWN ON THE MONUMENTATION MAP FILED AS RIV.CO 205-228, RECORDS OF SAID COUNTY, SAID CORNER BEING THE INTERSECTION OF THE EAST LINE OF EAST FRONTAGE ROAD AND NORTH LINE OF PLACENTIA AVENUE AS SHOWN ON SAID MAP;

THENCE ALONG SAID NORTH LINE NORTH 85°19'34" WEST 47.78 FEET;

THENCE LEAVING SAID NORTH LINE NORTH 13°18'04" WEST 87.21 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY HAVING A RADIUS OF 504.00 FEET;

THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 10°25'37" AN ARC LENGTH OF 91.72 FEET;

THENCE SOUTH 88°18'04" EAST 96.42 FEET TO THE WESTERLY LINE OF SAID EAST FRONTAGE ROAD BEING A CURVE, CONCAVE WESTERLY HAVING A RADIUS OF 1150.01 FEET, A RADIAL BEARING THROUGH SAID POINT BEARS N87°07'27" WEST;

THENCE SOUTHERLY ALONG SAID WESTERLY LINE ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 03°25'47", AN ARC LENGTH OF 68.84 FEET;

THENCE CONTINUING ALONG SAID WESTERLY LINE SOUTH 00°33'13" WEST 103.95 FEET TO THE **POINT OF BEGINNING**.

THE ABOVE DESCRIBED PARCEL CONTAINS 11,958 SQUARE FEET OR 0.275 ACRES, MORE OR LESS.

THIS DESCRIPTION WAS PREPARED BY ME, OR UNDER MY DIRECTION, IN CONFORMANCE WITH THE PROFESSIONAL LAND SURVEYORS' ACT.

BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 6 (NAD83) 1991.35 EPOCH. DIVIDE GRID DISTANCES SHOWN BY .999924951 TO OBTAIN GROUND LEVEL DISTANCES.

AS SHOWN ON EXHIBIT "B" ATTACHED HEREWITH AND MADE A PART HEREOF.

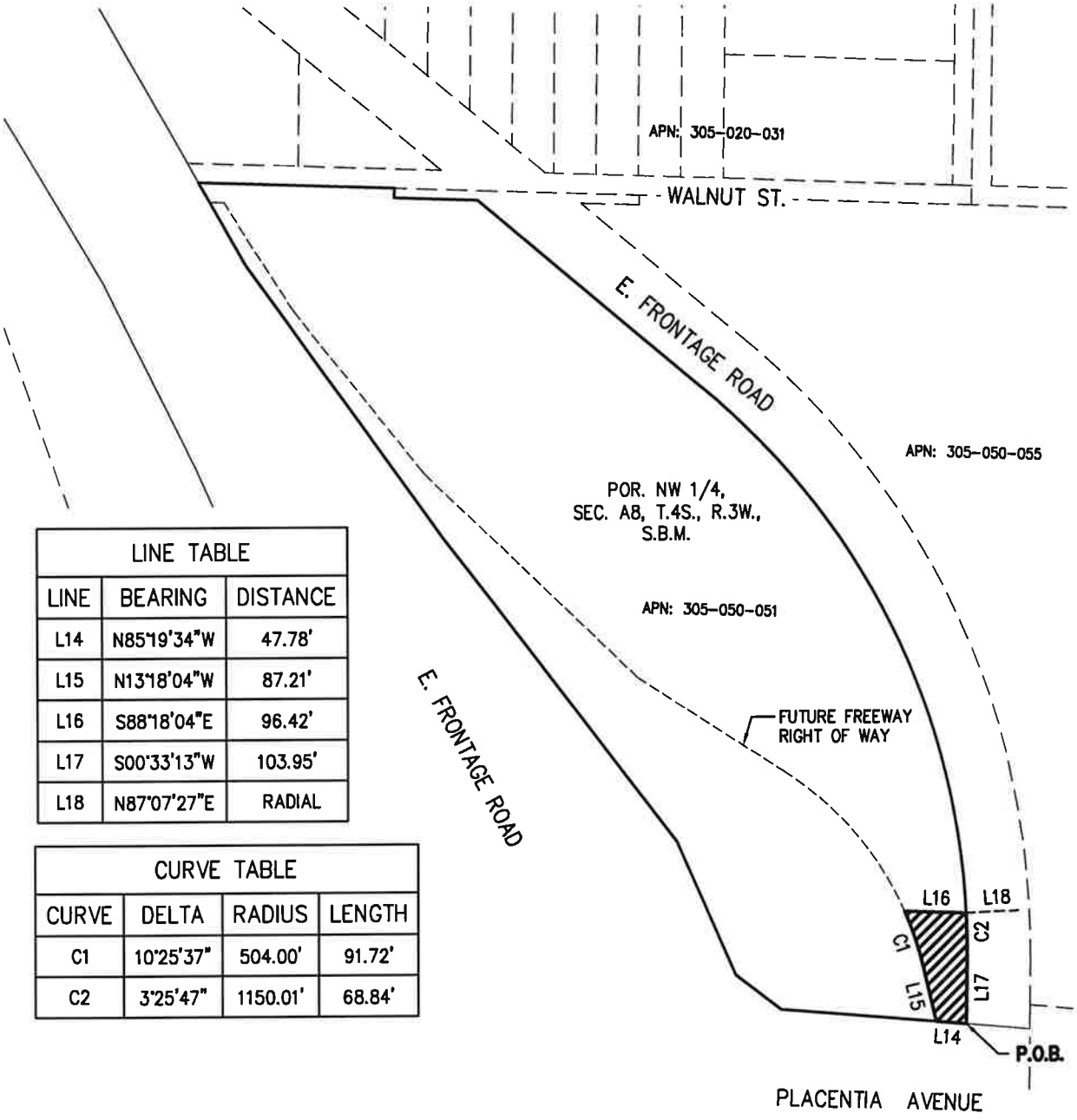
PREPARED BY ME OR UNDER MY DIRECTION.

_____

JAMES R. RIOS, PLS 8823 DATE

1

EXHIBIT "B"



LINE TABLE		
LINE	BEARING	DISTANCE
L14	N85°19'34"W	47.78'
L15	N13°18'04"W	87.21'
L16	S88°18'04"E	96.42'
L17	S00°33'13"W	103.95'
L18	N87°07'27"E	RADIAL

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	10°25'37"	504.00'	91.72'
C2	3°25'47"	1150.01'	68.84'

BEARINGS AND DISTANCES ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF OF 1983 (EPOCH 1991.35), ZONE VI. ALL NON-RECORD DISTANCES ARE GRID DISTANCES. TO OBTAIN GROUND DISTANCES DIVIDE GRID DISTANCES SHOWN BY 0.999924951.

SCALE
1" = 100'
SHEET 1 OF 1

LEGEND

DESCRIPTION AREA
11,958 SQ. FT / 0.275 ACRES

AFFECTED PROPERTY

CENTERLINE

ADJACENT PROPERTY

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RESOLUTION NO. 19-006

RESOLUTION OF NECESSITY FOR THE ACQUISITION OF A FEE INTEREST IN THAT CERTAIN REAL PROPERTY, BY EMINENT DOMAIN, MORE PARTICULARLY DESCRIBED AS ASSESSOR PARCEL NO. 305-060-010 (CPN 1012), LOCATED IN PERRIS, RIVERSIDE COUNTY, CALIFORNIA, FOR THE CONSTRUCTION OF AN INTERCHANGE AT THE INTERSECTION OF INTERSTATE 215 AND PLACENTIA AVENUE, IN RIVERSIDE COUNTY, CALIFORNIA

WHEREAS, the Riverside County Transportation Commission (the "Commission") proposes to acquire a fee interest in certain real property, located in Riverside County, California, more particularly described as Assessor Parcel No. 305-060-010 (CPN 1012), for the construction of an interchange at the intersection of Interstate 215 and Placentia Avenue, in Riverside County, California, pursuant to the authority granted to it by section 130220.5 of the California Public Utilities Code; and

WHEREAS, pursuant to section 1245.235 of the California Code of Civil Procedure, the Commission scheduled a public hearing for Wednesday, May 8, 2019 at 9:30 a.m., at the County Administration Building, Board of Supervisors Chambers, at 4080 Lemon Street, Riverside, California, and gave to each person whose property is to be acquired and whose name and address appeared on the last equalized county assessment roll, notice and a reasonable opportunity to appear at said hearing and be heard on the matters referred to in section 1240.030 of the California Code of Civil Procedure; and

WHEREAS, said hearing has been held by the Commission, and the affected property owner was afforded an opportunity to be heard on said matters; and

WHEREAS, the Commission may now adopt a Resolution of Necessity pursuant to section 1240.040 of the California Code of Civil Procedure;

NOW, THEREFORE, THE COMMISSION DOES HEREBY RESOLVE AND DECLARE AS FOLLOWS:

Section 1. Compliance with California Code of Civil Procedure. There has been compliance by the Commission with the requirements of section 1245.235 of the California Code of Civil Procedure regarding notice and hearing.

Section 2. Public Use. The public use for the fee interests in the property to be acquired is for the Mid County Parkway Project in Riverside County, California. Section 130220.5 of the California Public Utilities Code authorizes the Commission to acquire, by eminent domain, property necessary for such purposes.

Section 3.

Description of Property. Attached and marked as Exhibit "A" are the legal description and plat map of the interest to be acquired by the Commission, which describe the general location and extent of the property with sufficient detail for reasonable identification.

Section 4. Findings. The Commission hereby finds and determines each of the following:

(a) The public interest and necessity require the proposed project;

(b) The proposed project is planned or located in the manner that will be most compatible with the greatest public good and least private injury;

(c) The property defined and described in Exhibit "A" is necessary for the proposed project; and

(d) The offer required by section 7267.2 of the California Government Code was made.

Section 5. Use Not Unreasonably Interfering with Existing Public Use. Some or all of the real property affected by the interest to be acquired is subject to easements and rights-of-way appropriated to existing public uses. The legal descriptions of these easements and rights-of-way are on file with the Commission and describe the general location and extent of the easements and rights-of-way with sufficient detail for reasonable identification. In the event the herein described use or uses will not unreasonably interfere with or impair the continuance of the public use as it now exists or may reasonably be expected to exist in the future, counsel for the Commission is authorized to acquire the herein described interest subject to such existing public use pursuant to section 1240.510 of the California Code of Civil Procedure.

Section 6. More Necessary Public Use. Some or all of the real property affected by the interest to be acquired is subject to easements and rights-of-way appropriated to existing public uses. To the extent that the herein described use or uses will unreasonably interfere with or impair the continuance of the public use as it now exists or may reasonably be expected to exist in the future, the Commission finds and determines that the herein described use or uses are more necessary than said existing public use. Counsel for the Commission is authorized to acquire the herein described real property appropriated to such existing public uses pursuant to section 1240.610 of the California Code of Civil Procedure. Staff is further authorized to make such improvements to the affected real property that it determines are reasonably necessary to mitigate any adverse impact upon the existing public use.

Section 7. Further Activities. Counsel for the Commission is hereby authorized to acquire the hereinabove described real property in the name of and on behalf of the Commission by eminent

domain, and counsel is authorized to institute and prosecute such legal proceedings as may be required in connection therewith. Legal counsel is further authorized to take such steps as may be authorized and required by law, and to make such security deposits as may be required by order of court, to permit the Commission to take possession of and use said real property at the earliest possible time. Counsel is further authorized to correct any errors or to make or agree to non-material changes in the legal description of the real property that are deemed necessary for the conduct of the condemnation action, or other proceedings or transactions required to acquire the subject real property.

Section 8. Effective Date. This Resolution shall take effect upon adoption.

APPROVED AND ADOPTED this 8th day of May, 2019.

Chuck Washington, Chair
Riverside County Transportation Commission

ATTEST:

Lisa Mobley, Clerk of the Board
Riverside County Transportation Commission

LEGAL DEFINITIONS OF RIGHTS TO BE ACQUIRED

"**Fee**," also known as fee simple or fee simple absolute, grants to Riverside County Transportation ("RCTC"), absolute ownership of the interests in the portion of the property to be acquired.

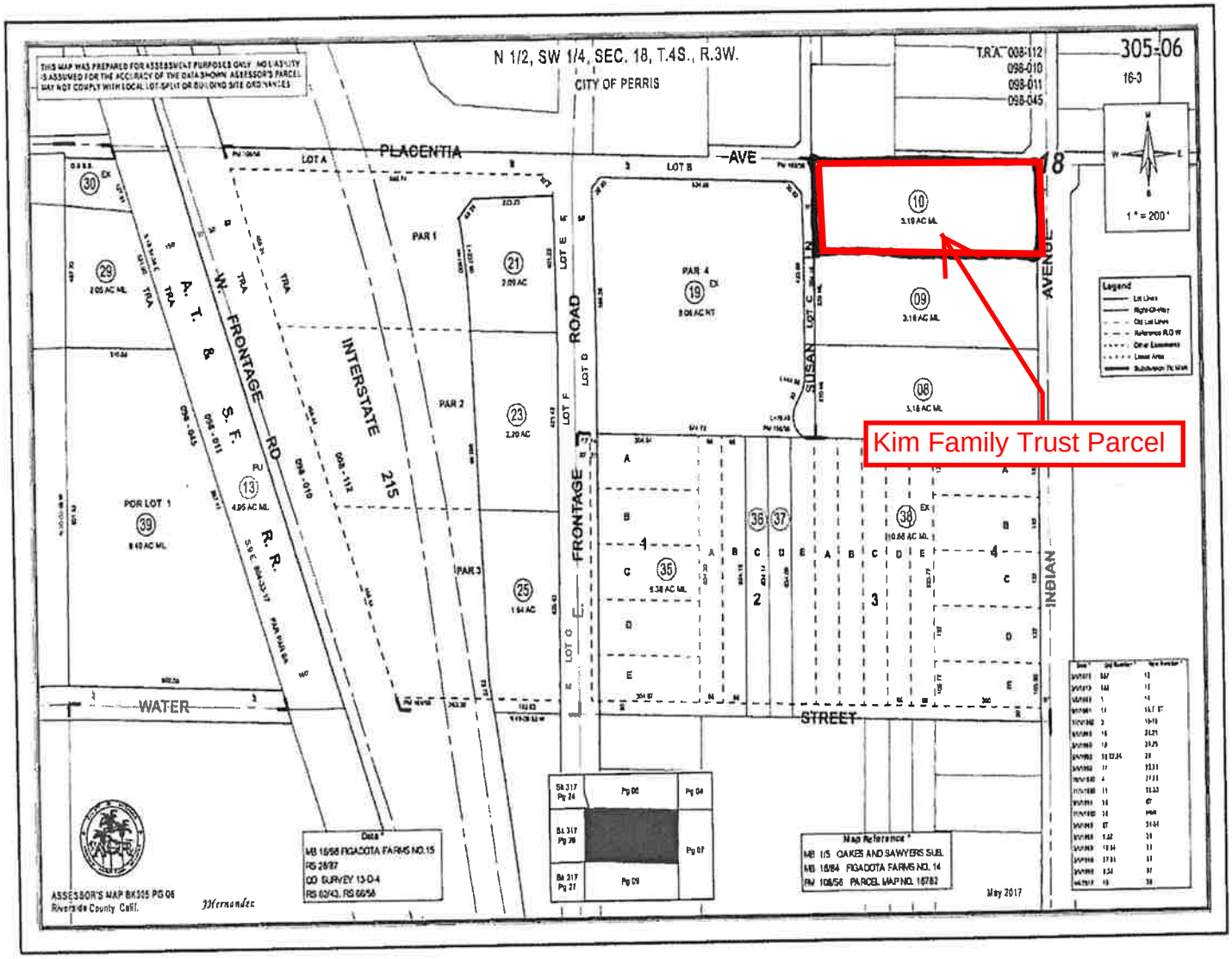
EXHIBIT A

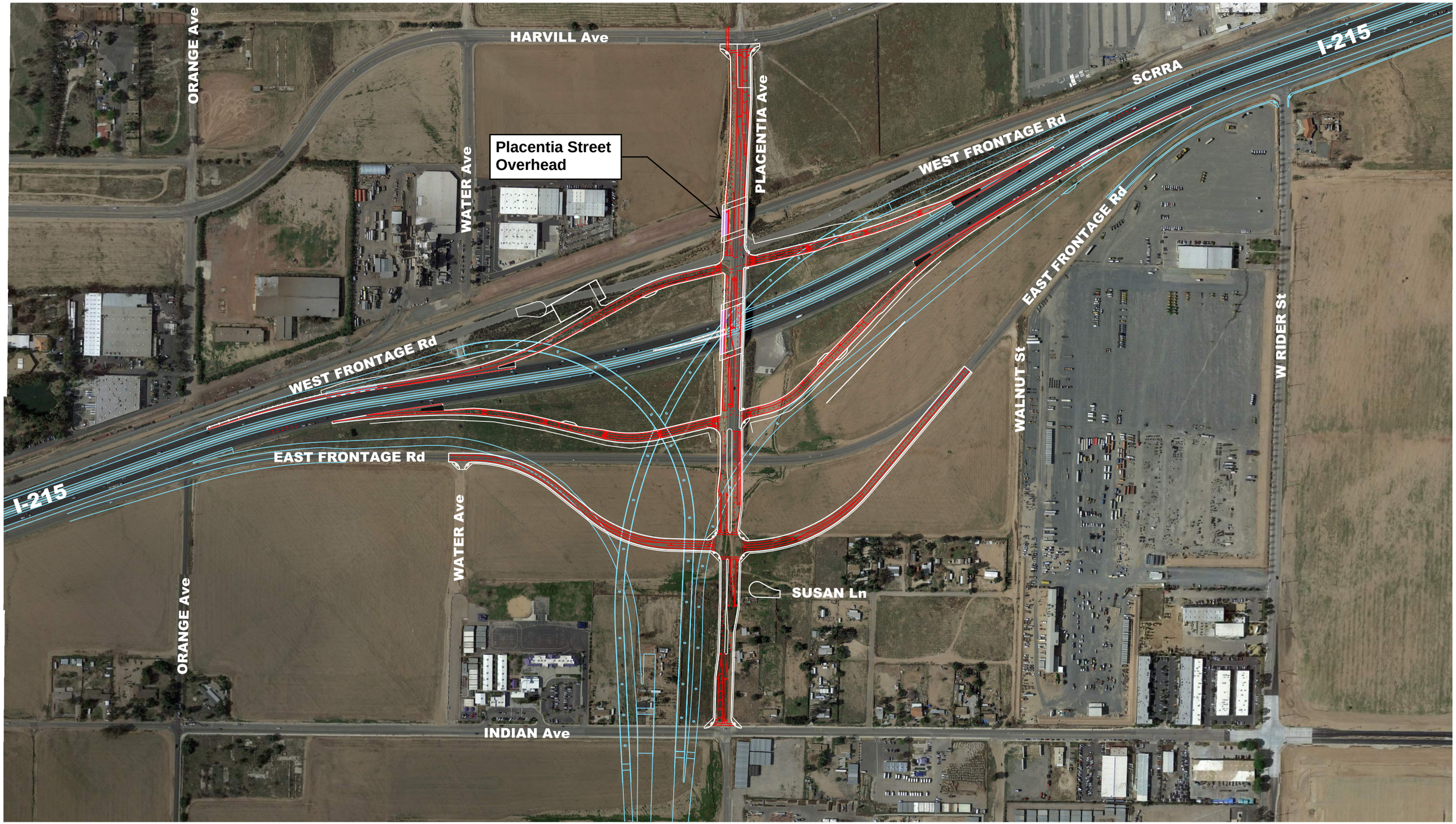
FEE

LEGAL DESCRIPTION
(Assessor Parcel No. 305-060-010)

THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 18, TOWNSHIP 4 SOUTH, RANGE 3 WST, SAN BERNARDINO BASE AND MERIDIAN; EXCEPTION THEREFROM A STRIP OF LAND 30 FEET WIDE ALONG THE EASTERLY SIDE THEREOF HERETOFORE CONVEYED TO THE COUNTY OF RIVERSIDE. ALSO EXCEPTING THEREFROM THE SOUTH 440 FEET THEREOF.

(APN 305-060-010)


N 1/2, SW 1/4, SEC. 18, T.4S., R.3W.
CITY OF PERRIS
T.R.A. 008-112
096-010
098-011
098-045
305-06
16-3
PLACENTIA
AVE
LOT A
LOT B
PAR 1
PAR 2
PAR 3
PAR 4
A. T. & S. F. R. R.
W. FRONTAGE RD
INTERSTATE 215
LOT E
LOT D
LOT F
LOT G
LOT C
SUSAN LN
INDIAN AVENUE
FRONTAGE ROAD
POR LOT 1
WATER
STREET
10
3.19 AC ML
09
3.16 AC ML
08
3.18 AC ML
Kim Family Trust Parcel
1" = 200'
Legend
ASSESSOR'S MAP BK305 PG 06
Riverside County Calif.
Hernandez
May 2017



*Mid-County Parkway (shown in blue) is not part of project.

T·Y·LIN INTERNATIONAL

0 225' 450' 900'

SCALE: 1" = 150'

I-215 / Placentia Ave Interchange

Attachment 1 Vicinity Map

AGENDA ITEM 8

PUBLIC HEARING

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Budget and Implementation Committee Michele Cisneros, Deputy Director of Finance Theresia Trevino, Chief Financial Officer
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Proposed Budget for Fiscal Year 2019/20

BUDGET AND IMPLEMENTATION COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to:

1) Discuss, review, and provide guidance on the proposed Fiscal Year 2019/20 Budget; and
2) Open the public hearing in order to receive input and comments on the proposed FY 2019/20 Budget on May 8 and on June 12, 2019, and thereafter close the public hearing.

BACKGROUND INFORMATION:

Staff completed the initial budget preparation process and the attached executive summary for the proposed FY 2019/20 Budget. The policy goals and objectives approved by the Commission on March 13 were the basis for this budget. The long-term policy goals that support the Commission's objectives considered during the preparation of the budget relate to promoting quality of life; achieving operational excellence; connecting the economy; being a responsible partner; and maintaining fiscal accountability.

Staff will present highlights of significant items included in the budget and is seeking review of an input on the proposed FY 2019/20 Budget. Additionally staff recommends opening of the public hearing on May 8. As a result of input received from the public and the Commission, staff will make the necessary changes to the budget document for the Commission's final review, closing of the public hearing, and adoption at its June 12 Commission meeting.

The Commission's budget is primarily project-driven, although the RCTC 91 Express Lanes added a service-driven component upon the commencement of toll operations in March 2017. As a project-driven agency, the Commission accumulates funds, or reserves, for specific projects and programs – resulting in flexibility to adjust project development or programs especially in times of economic downturns. The proposed FY 2019/20 Budget anticipates that total uses will exceed sources by approximately $142.8 million. Similar to prior years, the accumulated reserves, which include bond proceeds issued in FY 2017/18, will fund the deficiency. In the executive summary,

Table 16 provides a summary of the projected fund balance at June 30, 2020, and tables 17-19 provide a summary of budgeted sources and uses from different perspectives (comparative, operating and capital, and fund).

Preliminary funding estimates for transit operating and capital expenditures have been included in the budget, although the draft Short Range Transit Plans are still under review. An adjustment for a revised estimate of these transit expenditures may be included in the final budget document presented in June 2019.

A summary of the proposed FY 2019/20 Budget is as follows:

	FY 2019/20 Budget
Revenues and other financing sources:	
Sales taxes-Measure A and Local Transportation Funds	$ 290,000,000
Reimbursements (federal, state, and other)	272,475,800
Transportation Uniform Mitigation Funds, including reimbursements	25,000,000
State Transit Assistance	31,050,600
Tolls, penalties, and fees	41,869,400
Other revenues	553,000
Interest on investments	12,754,300
Debt proceeds	75,703,000
Transfers in	165,207,900
Total revenues and other financing sources	914,614,000
Expenditures and other financing uses:	
Personnel salaries and fringe benefits	19,396,500
Professional services	25,447,300
Support services	12,383,200
Projects and operations	753,055,300
Capital outlay	5,288,000
Debt service (principal and interest)	76,654,400
Transfers out	165,207,900
Total expenditures and other financing uses	1,057,432,600
Excess (deficiency) of revenues and other financing sources over (under) expenditures and other financing uses	(142,818,600)
Beginning fund balance (projected)	792,310,100
Ending fund balance (projected)	$ 649,491,500

In the proposed FY 2019/20 Budget, staff included approximately $8.1 million to pay off the Commission's estimated net pension liability as of June 30, 2019, which is based on an actuarial valuation. Paying off the net pension liability is projected to save approximately $7.5 million in

interest charges. Staff intends to present this recommendation for approval at the May Executive Committee meeting, immediately preceding the May Commission meeting.

At its June 12 Commission meeting, staff will present the entire budget document with detailed narratives.

Attachment: Executive Summary for the Proposed FY 2019/20 Budget

Executive Summary

Introduction

The budget for Fiscal Year (FY) 2019/20 is presented to the Board of Commissioners (Board) and the citizens of Riverside County. The budget outlines the projects the Commission plans to undertake during the year and appropriates expenditures to accomplish these tasks. The budget also shows the funding sources and fund balances for these projects. This document serves as the Commission's monetary guideline for the fiscal year. To provide the reader a better understanding of the projects, staff has included descriptive information regarding each department and major projects. The discussion in each department includes a review of accomplishments, major initiatives, and key assumptions.

Policy Goals and Objectives

As approved at its March 13, 2019 meeting, the Commission is driven by four core goals and underlying objectives for the people of Riverside County and the transportation system upon which they rely:

QUALITY OF LIFE ***RCTC is focused on improving life for the people of Riverside County and empowering them to live life at their pace.***	
Choice	RCTC empowers the residents of Riverside County to choose how to get safely to where they are going.
Environmental Stewardship	RCTC protects and preserves the County's environment for our residents.
Mobility	RCTC provides access, equity, and choice in transportation; RCTC is a mobility partner.
Access	RCTC projects are the connection to employment, schools, community institutions, parks, medical facilities and shopping in the community.
Goods Movement	RCTC facilitates the funding and delivery of projects that mitigate the impact of increased goods movement flow through Riverside County.

OPERATIONAL EXCELLENCE ***RCTC is a responsible and conservative steward of taxpayer dollars.***	
State of Good Repair	RCTC invests in road safety and maintenance in its residents' neighborhoods.
Promises Fulfilled	Projects are completed on-time, on-budget; RCTC delivers on its promises as a steward of Riverside County residents' investment.
Innovation	Program and project delivery innovations drive results, savings, and greater economic opportunities for Riverside County residents.
Information	RCTC operations are transparent; customers get fast, timely, quality service.

CONNECTING THE ECONOMY ***RCTC is a driver of economic growth in Riverside County.***	
Workforce Mobility	RCTC improves the economy by creating a robust workforce to workplace system; RCTC helps move the economy of Riverside County.
Population Growth	Since 1976, RCTC has been responsible for connecting our County's economy as the County's population has quadrupled from 550,000 to 2.3 million today.
Economic Impact	RCTC has invested $4 billion in the County's economy thanks to Measure A and future toll revenues, which has a multiplier impact in terms of jobs and economic opportunity throughout Riverside County.

RESPONSIBLE PARTNER *RCTC partners with local, regional, and state governments to deliver road and transit projects.*	
Streets and Roads	RCTC invests in local priorities for maintaining streets and roads and fixing potholes.
Transit	RCTC is a partner with transit operators to provide residents mobility choices, flexibility, intercity and intercounty connectivity, and access.
Active Transportation Facilities	RCTC is a partner with agencies within the County to promote active transportation alternatives, including the building of regional trails and bicycle and pedestrian facilities in accordance with local general master and active transportation plans.
Grants	RCTC is a steward of state and federal grants to improve our communities.
Local Measure A Value	RCTC invests Measure A dollars into projects and programs that benefit local communities throughout the County.

Staff used these core goals and objectives to prepare this budget and develop the following short-term objectives to guide further the development of the FY 2019/20 budget.

Capital Project Development and Delivery

- Continue design and construction of the Interstate (I) 15 Express Lanes and development of the 71/91 interchange improvements, State Route(SR) 60 truck climbing lanes, and Mid County Parkway projects included in the Western Riverside County Delivery Plan.
- Commence development of the I-15 Express Lanes—Southern Extension project.
- Maintain and enhance communication and collaboration with Caltrans to improve the Commission's ability to deliver critical projects.
- Enhance corridor mobility and traveler choice with the operation of the express lanes and development of the next generation toll projects.
- Collaborate with local jurisdictions to implement the Transportation Uniform Mitigation Fee (TUMF) regional arterial program projects and facilitate the delivery of eligible arterial improvements in western Riverside County (Western County).
- Continue active engagement in state and federal efforts to streamline and modernize the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) to improve the Commission's ability to deliver critical projects.

Toll Operations

- Efficiently operate express lanes and achieve high customer satisfaction through reduction in congestion, mobility improvements, and management of demand.

Regional Programs

- Maintain an active involvement in state and federal legislative matters to ensure that the Commission receives proper consideration for transportation projects and funding.
- Complete the development of a county-wide transportation plan and the first ten-year update of the 2009 Measure A Expenditure Plan, as required by the ordinance.
- Subsidize reliable and cost-effective Metrolink commuter rail service to and from Riverside County; Southern California Regional Rail Authority (SCRRA) is the operator of Metrolink.
- Provide leadership in the planning and development of the Coachella Valley-San Gorgonio Pass corridor rail service.
- Support innovative programs that provide transit assistance in hard to serve rural areas or for riders with special transit needs.
- Promote cost controls and operating efficiency for transit operators.
- Maintain effective partnerships among commuters, employers, and government to increase the efficiency of our transportation system by encouraging and promoting motorized and non-motorized transportation alternatives.
- Provide a motorist aid system that ensures safety and convenience to freeway motorists.

Management Services

- Maintain close communication with Commissioners and educate policy makers on all issues of importance to the Commission.
- Develop and execute a communications and public engagement strategy for the purposes of education, information, and customer service.
- Maintain administrative program delivery costs below the policy threshold of 4% of Measure A revenues; the FY 2019/20 Management Services budget is 1.48% of Measure A revenues.
- Maintain administrative salaries and benefits at less than 1% of Measure A revenues; the FY 2019/20 administrative salaries and benefits is 0.73% of Measure A revenues before the one-time disbursement to pay off the Commission's California Public Employees' Retirement System (CalPERS) net pension liability. The administrative program share of the $8.1 million net pension liability is $2.5 million, or 31%. The inclusion of this one-time disbursement in FY 2019/20 results in the administrative salaries and benefits at 1.39% of Measure A revenues; however, the one-time disbursement to pay off the net pension liability is related to the projected benefits to employees for past service. Accordingly, the impact to the administrative salaries and benefits will be retroactively applied to prior fiscal years without exceeding the 1% limitation in FY 2019/20 or prior fiscal years.
- Maintain prudent cash reserves to provide some level of insulation for unplanned expenditures.
- Maintain current strong bond ratings with rating agencies.
- Establish and maintain revenues and reserves generated from toll operations to be available for debt service in accordance with toll supported debt agreements; maintenance, repair, rehabilitation, administration and operations; and capital projects within the corridor.

Linking Commission Policy Goals and Departmental Goals and Objectives

The following matrix (Table 1) illustrates the linkage of the Commission's core policy goals described in this section to the individual departmental goals and objectives included in Section 5.

Table 1 – Relationship between Commission and Departmental Goals

Department	Quality of Life	Operational Excellence	Connecting the Economy	Responsible Partner
Management Services				
Executive Management	X	X	X	X
Administration		X		
External Affairs	X	X		X
Finance		X		
Regional Programs				
Planning and Programming	X	X	X	X
Rail Maintenance and Operations	X	X	X	X
Public and Specialized Transit	X	X	X	X
Commuter Assistance	X	X	X	X
Motorist Assistance	X	X		X
Capital Project Development and Delivery	X	X	X	X
Toll Operations	X	X	X	X

Budget Overview

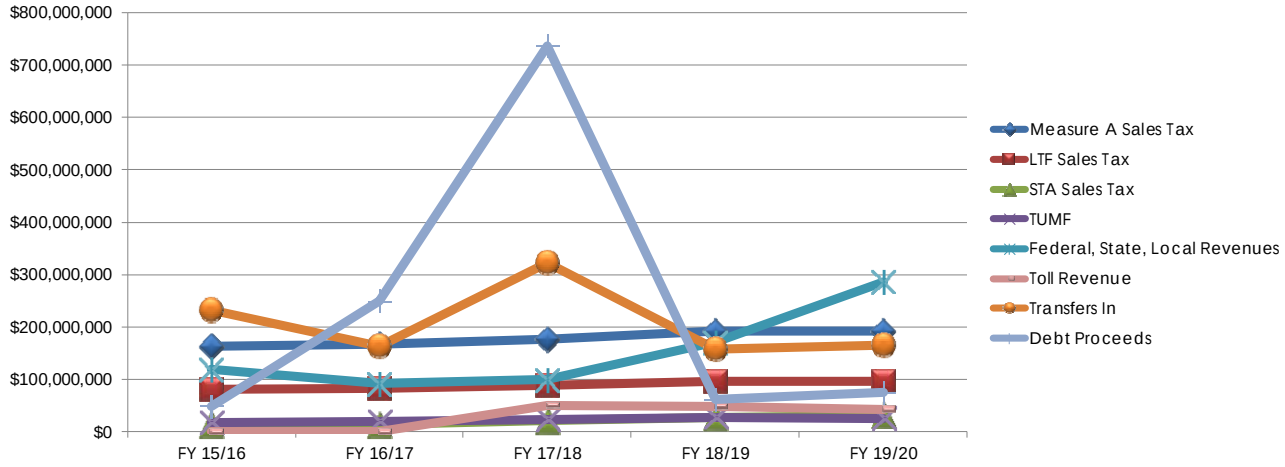
Total sources (Table 2) are budgeted at $914,614,000, an increase of 17% over FY 2018/19 projected sources and flat over the FY 2018/19 budget. Total sources are comprised of revenues of $673,703,100, transfers in of $165,207,900, and debt proceeds of $75,703,000. The projected fund balance at June 30, 2019 available for expenditures/expenses (excluding amounts restricted for debt service of $14,422,700 and advances receivable of $22,986,000) is $754,901,400. Accordingly, total funding available for the FY 2019/20 budget totals $1,669,515,400.

Table 2 – Sources FY 2018-2020

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Measure A Sales Tax	$ 176,301,700	$ 192,000,000	$ 192,000,000	$ 193,000,000	$ 1,000,000	1%
LTF Sales Tax	89,557,600	96,000,000	96,000,000	97,000,000	1,000,000	1%
STA Sales Tax	21,320,900	23,203,600	27,110,700	31,050,600	7,847,000	34%
Intergovernmental	88,207,000	249,188,300	160,549,900	272,475,800	23,287,500	9%
TUMF Revenue	23,699,800	25,922,200	26,672,200	25,000,000	(922,200)	-4%
Tolls, Penalties, and Fees	50,446,800	36,940,500	47,756,900	41,869,400	4,928,900	13%
Other Revenue	3,199,500	1,084,400	468,500	553,000	(531,400)	-49%
Investment Income	9,117,000	3,408,000	10,064,800	12,754,300	9,346,300	274%
Transfers In	323,263,800	182,214,300	158,206,600	165,207,900	(17,006,400)	-9%
Debt Proceeds	735,488,800	106,081,000	61,841,100	75,703,000	(30,378,000)	-29%
TOTAL Sources	$ 1,520,602,900	$ 916,042,300	$ 780,670,700	$ 914,614,000	$ (1,428,300)	0%

Riverside County has specific competitive advantages over nearby coastal counties (Los Angeles, Orange, and San Diego), including housing that is more available and affordable as well as plentiful commercial real estate and land available for development at lower costs. Riverside County's economy is benefitting from employment gains that are a function of the County's ability to attract businesses with lower commercial rents and a skilled labor force. Population migration to the Inland Empire (i.e., Riverside and San Bernardino counties) has occurred due to these employment opportunities and a lower cost of living compared to the coastal counties. Improvements in the local labor market and housing advantages have increased economic activity contributing to stable sales tax revenue growth as noted on Chart 3.

Chart 3 – Sources: Five-Year Trend

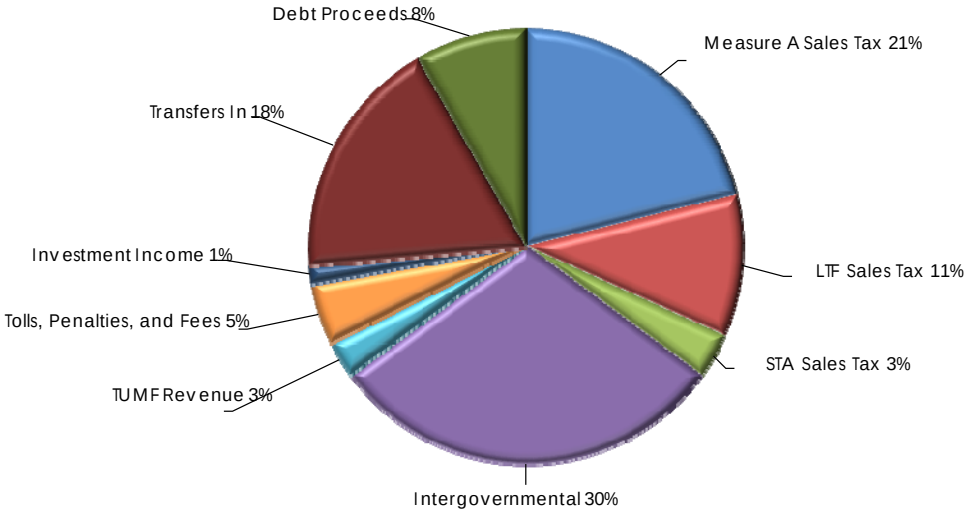


Sales tax revenues have continued to remain stable during the last five fiscal years. The Commission's economic outlook for FY 2019/20 continues to be cautiously optimistic; however, availability of state and federal funds could affect funding of the Commission's capital projects and programs. Should Measure A and LTF sales tax revenues fluctuate and the availability of federal and state revenues continue to be uncertain, the timing and scope of the Commission's projects and programs may be impacted.

Regardless of the future economic conditions, the Commission faces formidable ongoing challenges in terms of providing needed infrastructure enhancements to support a population and an economy that has outgrown the capacity of its existing infrastructure. Fortunately, the foundation of the regional economy continues to retain many of the fundamental positive attributes that fueled its earlier growth, including lower priced real estate with proximity to coastal communities, a large pool of skilled workers, and increasing wealth and education levels.

While the Commission's primary revenues are the Measure A and LTF sales taxes, other revenues and financing sources are required to fund the Commission's programs and projects as illustrated in Chart 4.

Chart 4 – Sources: Major Categories



The California Department of Tax and Fee Administration (CDTFA), as statutorily created and authorized successor to the former California State Board of Equalization, recently provided to cities and other agencies its projections that statewide taxable sales over the next fiscal year will increase 3.6%. Continuing its conservative projection practices, the Commission also considers short- and long-term sales tax projections from its consultants to estimate sales tax revenues. After taking the state of the local economy, recent revenue trends, and the impact of CDTFA new automation system delays into consideration, staff projects Measure A sales tax revenues of $193,000,000 for FY 2019/20. This is a 1% increase from the FY 2018/19 revised projection of $192,000,000, which reflects FY 2017/18 sales tax revenues processed in FY 2018/19 due to CDTFA's new system implementation issues. These issues caused a backlog of unprocessed sales tax returns at the end of FY 2017/18 that were processed and reflected in FY 2018/19. At midyear the Commission will reassess sales tax revenue projections based on the economy and revenue trends.

On behalf of the County, the Commission administers the LTF for public transportation needs, local streets and roads, and bicycle and pedestrian facilities. The majority of LTF funding received by the County and available for allocation is distributed to all public transit operators in the County, and the Commission receives allocations for administration, planning, and programming in addition to funding for Western County rail operations included in the commuter rail Short Range Transit Plan (SRTP). The LTF sales tax revenue received from the State is budgeted at $97,000,000, an increase of 1% from the FY 2018/19 revised projection of $96,000,000. LTF sales tax revenues in FY 2017/18 and FY 2018/19 were also impacted by the CDTFA implementation issues.

A statewide sales tax on motor vehicle diesel fuel generates STA funds, which the State Controller allocates by formula to the Commission for allocations to the County's public transit operators. Beginning in FY 2017/18, Senate Bill (SB) 1 provides additional STA revenues, also referred to as State of Good Repair (SGR), for transit maintenance, rehabilitation, and capital projects. The FY 2019/20 STA/SGR allocations, based on recent State estimates, is $31,050,600.

Intergovernmental revenues include reimbursement revenues from federal sources of $88,718,700, state sources of $173,799,200, and local agencies of $9,957,900 for highway and rail capital projects, rail operations and station maintenance, commuter assistance, and motorist assistance programs as well as planning and programming activities. The increase of 9% in FY 2019/20 compared to the FY 2018/19 budget is related to increases in state and federal reimbursements offset by a decrease in local reimbursements. SB 132 provides state funding for the 15/91 Express Lanes connector and pass-through funding to the County for the I-15/Limonite interchange and Hamner Bridge widening and to the County and city of Corona for grade separation projects. Other state reimbursements will fund the State Route (SR) 60 truck lanes, Pachappa underpass, and station rehabilitation projects. Federal reimbursements provide funding for the I-15 Express Lanes, I-15 Express Lanes – Southern Extension, SR-60 truck lanes, Pachappa underpass, and station rehabilitation projects. Reimbursement revenues vary from year to year depending on project activities and funding levels.

Based on an amended Memorandum of Understanding (MOU) with the Western Riverside Council of Governments (WRCOG), the Commission receives 45.7% of TUMF revenues (as updated by the most recent Nexus study). TUMF represents fees assessed on new residential and commercial development in Western County. The Commission projects FY 2019/20 TUMF fees will remain flat at $25,000,000. The 4% decrease is related to additional TUMF zone reimbursements for the Lake Elsinore Railroad Canyon project in FY 2018/19.

FY 2018/19 marked the second complete fiscal year of toll operations for the RCTC 91 Express Lanes following substantial completion of the 91 Project in March 2017. Since toll revenues surpassed 2013 financing assumptions, the Commission obtained an updated Riverside County 91 Express Lanes Extension Investment Grade Traffic and Revenue Study in December 2018. The Commission conservatively estimates FY 2019/20 toll revenues of $41,869,400 based on current operations and the updated study.

Other revenue of $553,000 includes property management generated from properties acquired in connection with various highway and rail properties.

The Commission anticipates a 274% increase in FY 2019/20 investment income due to extremely conservative investment yield projections in the FY 2018/19 budget. The FY 2019/20 budget projects investment income at a 2% investment yield, compared to less than 1% in prior year budgets.

Transfers in of $165,207,900 relate primarily to the transfer of available debt proceeds for highway projects; LTF funding for general administration, planning and programming, rail operations, and grade separation project allocations; approved interfund allocations for specific projects and administrative cost allocations; and debt service requirements from highway, regional arterial, and local streets and roads funds. Debt proceeds consist of $75,703,000 in drawdowns from the federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loan related to the I-15 Express Lanes project.

Total uses (Table 3), including transfers out of $165,207,900, are budgeted at $1,057,432,600, a 6% decrease from the prior year budget amount of $1,123,634,900. Program expenditures and transfers out totaling $956,364,700 represent 90% of total budgeted uses in FY 2019/20. Program costs decreased by 5% from $1,003,365,500 in FY 2018/19 due to projects and programs identified below.

Table 3 – Uses FY 2018-2020

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Capital Highway, Rail, and Regional Arterials	$ 517,040,000	$ 631,599,300	$ 430,098,100	$ 606,640,600	$ (24,958,700)	-4%
Capital Local Streets and Roads	53,176,800	58,479,500	58,479,500	58,642,300	162,800	0%
Commuter Assistance	4,447,700	6,199,600	4,708,300	4,880,800	(1,318,800)	-21%
Debt Service	664,013,700	96,675,600	92,205,600	76,654,400	(20,021,200)	-21%
Management Services	22,184,500	23,593,800	19,784,300	24,413,500	819,700	3%
Motorist Assistance	4,909,300	10,004,600	7,946,300	9,364,500	(640,100)	-6%
Planning and Programming	4,293,800	20,464,700	6,045,300	14,512,900	(5,951,800)	-29%
Public and Specialized Transit	113,456,700	210,341,400	152,669,200	193,728,700	(16,612,700)	-8%
Rail Maintenance and Operations	24,161,700	41,119,800	34,413,400	46,228,500	5,108,700	12%
Toll Operations	11,849,700	25,156,600	21,695,000	22,366,400	(2,790,200)	-11%
TOTAL Uses	$ 1,419,533,900	$ 1,123,634,900	$ 828,045,000	$ 1,057,432,600	$ (66,202,300)	-6%

Note: Management Services includes Executive Management, Administration, External Affairs, and Finance.

Capital highway, rail, and regional arterials budgeted uses of $606,640,600 are 4% lower compared to the FY 2018/19 budget due to project activity on the I-15 Express Lanes, significant completion of a 2009 Measure A Western County Regional Arterial (MARA) project, and decreased transfers out related to debt proceeds from the capital projects fund to a special revenue fund to finance 2009 Measure A Western County highway projects.

Local streets and roads expenditures of $58,642,300 reflect an increase of $162,800 over the FY 2018/19 budget and represent the disbursements to local jurisdictions for the construction, repair, and maintenance of local streets and roads.

Commuter assistance budgeted expenditures of $4,880,800 are 21% lower than FY 2018/19 budget due to transfers out for a transit incentive project in Western County in the prior year.

Debt service of $76,654,400 decreased 21% due to $20 million of toll-operation surplus revenues deposited to the 2013 TIFIA loan reserve fund in FY 2018/19 as required under the TIFIA loan agreement.

Management services expenditures of $24,413,500 increased 3% primarily due to a one-time disbursement in FY 2019/20 to fund the Commission's CalPERS net pension liability. Expenditures under management services include information technology equipment upgrades, robust communication and engagement efforts, financial advisory services, and debt service contribution.

Motorist assistance expenditures of $9,364,500 decreased 6% due to higher SAFE matching transfers out for FSP services in FY 2018/19.

Planning and programming budgeted expenditures of $14,512,900 reflect a 29% decrease from the FY 2018/19 budget due to decreased projects and operations activities in connection with LTF disbursements for planning and programming, other agency projects, and special studies.

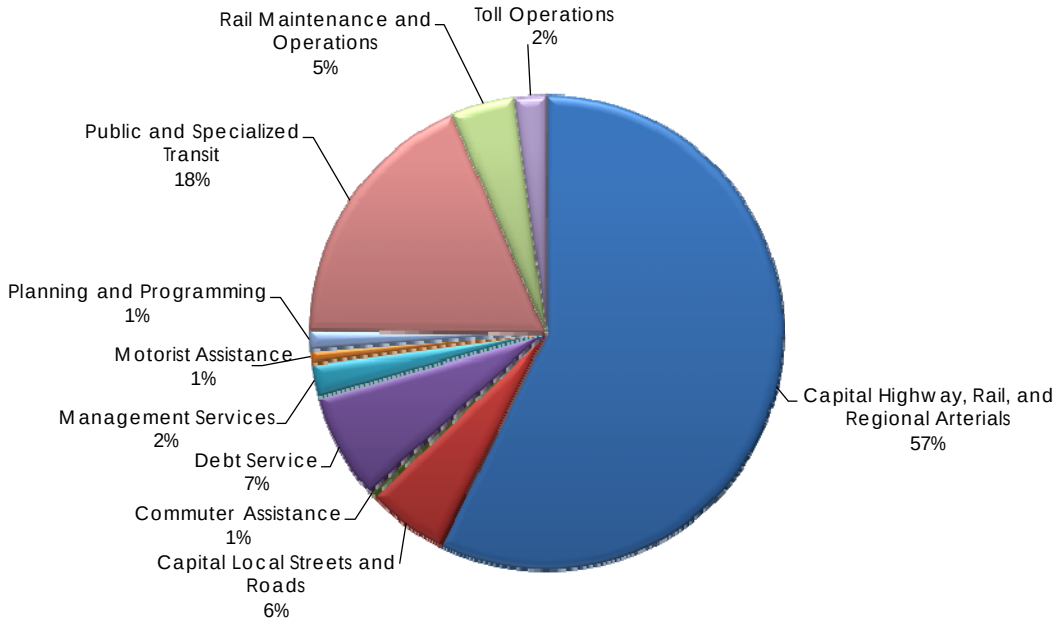
Public and specialized transit budgeted expenditures of $193,728,700 are 8% lower than the FY 2018/19 budget due to decreased operating expenditures for public transit.

The rail maintenance and operations budgeted expenditures of $46,228,500 are 12% higher than the FY 2018/19 budget due to funding received for the special event train platform in the city of Indio.

Toll operations expenses are budgeted at $22,366,400 to manage the operations, maintenance, and capital support of the RCTC 91 Express Lanes and pay interest on toll revenue bonds. The 11% decrease is due to decreased transfers out related to toll operations surplus revenues to fund the 91 corridor operations project.

Chart 5 is an illustration of total uses included in the FY 2019/20 budget by major categories.

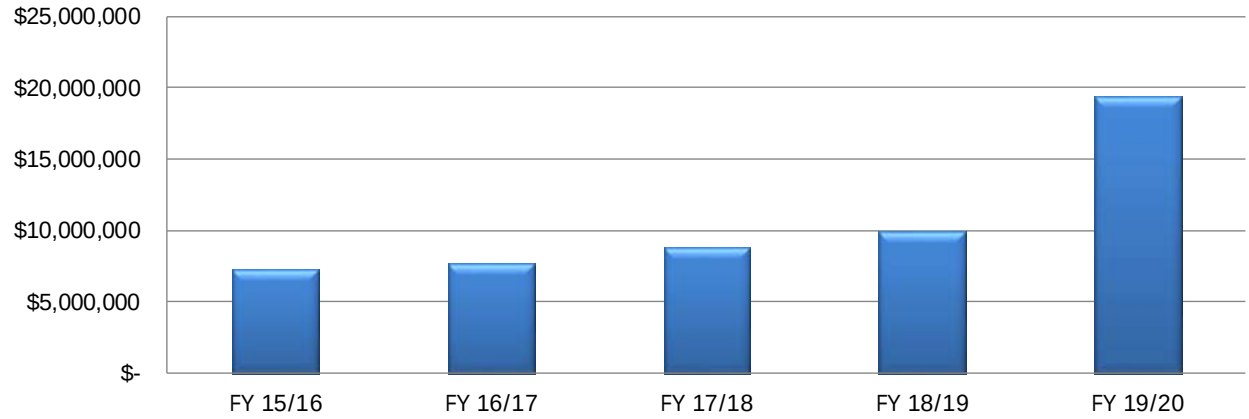
Chart 5 – Uses: Major Categories



Commission Personnel

The Commission's salaries and benefits total $19,396,500 for FY 2019/20. This represents an increase of $9,041,800 or 87% over the FY 2018/19 budget of $10,354,700 (Chart 6). The increase relates primarily to the one-time disbursement to fund the CalPERS net pension liability of $8.1 million. The FY 2019/20 budget also includes three additional full-time equivalents (FTE) and a 4% pool for performance merit-based salary increases. The Commission's salary schedule for FY 2019/20 is included in Appendix E and complies with Government Code §20636 "Compensation Earnable" and California Code of Register §570.5, "Requirements for a Publicly Available Pay Schedule."

Chart 6 – Salaries and Benefits Cost: Five-Year Comparison



The FTE of 54 positions included in the FY 2019/20 budget (Table 4) reflects a 3.0 FTE increase related to the recruitment of a financial analyst and a toll senior management analyst in preparation for the opening of the 15 Express Lanes and an accounting supervisor. The Commission accomplished significant organization changes over the past few years related to various projects requiring substantial attention at many staff levels. Management continues to be firmly committed to the intent of the Commission's enabling legislation requiring a lean organization. The Commission will continue providing

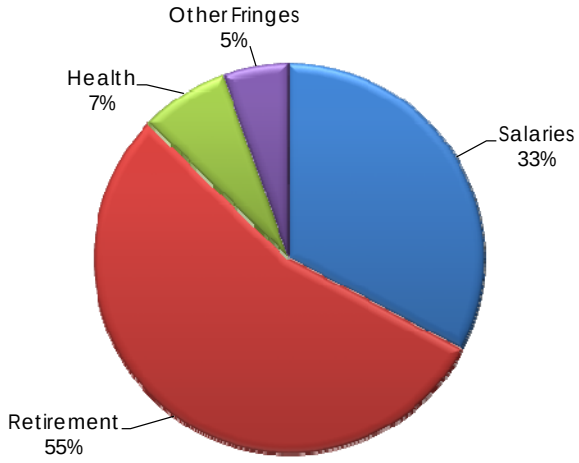
staff the tools needed to ensure an efficient and productive work environment. However, small should not be viewed in an absolute context; it is relative to the required tasks and the demands to be met.

Table 4 – Full-Time Equivalents by Department FY 2018—2020

	FY 17/18	FY 18/19	FY 19/20
Executive Management	0.6	0.6	0.6
Administration	5.7	5.6	5.8
External Affairs	4.5	3.7	4.0
Finance	8.3	8.3	9.1
Planning and Programming	4.2	5.3	5.4
Rail Maintenance and Operations	3.6	4.2	3.6
Public and Specialized Transit	2.2	2.5	2.8
Commuter Assistance	1.4	1.6	1.4
Motorist Assistance	0.9	1.2	1.0
Capital Project Development and Delivery	13.0	15.5	16.7
Toll Operations	2.6	2.5	3.6
TOTAL	47.0	51.0	54.0

The Commission provides a comprehensive package of benefits to employees. The package includes: health, dental, vision, life insurance, short and long-term disability, workers' compensation, tuition assistance, sick and vacation leave, retirement benefits in the form of participation in the CalPERS, postretirement health care, deferred compensation, and employee assistance program. Chart 7 illustrates the compensation components.

Chart 7 – Personnel Salaries and Benefits



In prior years, salaries represented more than half of personnel costs; however, in FY 2019/20, the Commission intends to make a one-time disbursement of $8.1 million to fund the Commission's CalPERS net pension liability. As a result, retirement costs in the FY 2019/20 budget represent 55% of the personnel salaries and benefits expenditures.

Department Initiatives

Staff prepared each department's budget based on key assumptions, accomplishments in FY 2018/19, major initiatives for FY 2019/20, and department goals and related objectives. Tables 5 through 15 present the key initiatives and summary of expenditures/expenses for each department.

Executive Management

- Continue project development and delivery as the key Measure A priority.
- Foster growth in usage of express lanes and ensure their financial success.
- Monitor SR-91 corridor operations and effectiveness.
- Complete a long-range transportation plan to guide future transportation priorities for the County.
- Continue planning efforts to advance passenger rail service in the Coachella Valley-San Gorgonio Pass corridor.
- Advocate for state and federal investments in transportation to fund needed transportation priorities in the County and stimulate the local economy.
- Maintain regional cooperation and collaboration as a significant effort consistent with the philosophy and mission of the Commission.
- Support a comprehensive social media outreach program to build awareness of the Commission and its role in the community.
- Maintain an effective mid-sized transportation agency with dedicated staff.

Table 5 – Executive Management

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 284,600	$ 253,000	$ 252,700	$ 445,100	$ 192,100	76%
Professional	122,300	230,000	150,000	235,000	5,000	2%
Support	65,500	88,600	75,300	93,600	5,000	6%
Transfers Out	21,600	-	-	-	-	N/A
TOTAL	$ 494,000	$ 571,600	$ 478,000	$ 773,700	$ 202,100	35%

Administration

- Provide high quality support services to the Commission and to internal and external customers.
- Maintain an accurate and efficient electronic records management system.
- Invest in an agenda management system to improve efficiencies and enhance transparency.
- Provide timely communications and high quality support services to Commissioners.
- Update technology to improve internal processes and interaction with the public.
- Support and develop a motivated workforce with a framework of activities and practices that comply with employment laws and regulations.
- Employ and recruit a dynamic and talented workforce.

Table 6 – Administration

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 677,000	$ 723,700	$ 686,700	$ 1,483,800	$ 760,100	105%
Professional	571,500	847,800	758,700	1,086,500	238,700	28%
Support	694,100	1,015,800	850,400	1,089,500	73,700	7%
Capital Outlay	381,900	511,300	508,000	461,000	(50,300)	-10%
Debt Service	24,900	-	-	-	-	N/A
Transfers Out	153,500	-	-	-	-	N/A
TOTAL	$ 2,502,900	$ 3,098,600	$ 2,803,800	$ 4,120,800	$ 1,022,200	33%

External Affairs

- Develop effective partnerships with transportation providers to communicate a unified message to Congress regarding mobility needs.
- Advocate positions in the State Legislature and in Congress that advance the County's transportation interests.
- Continue a leadership role in formulating a countywide direction on federal transportation policies.
- Prepare federal transportation funding reauthorization principles in preparation for congressional and administrative deliberations on the next surface transportation law.
- Conduct a concerted outreach effort to new federal and state representatives on local transportation issues.
- Utilize modern technology to support a robust public communication and engagement effort focusing on accessible and transparent communication of the Commission's projects.

- Develop marketing and communication plans for the RCTC 91 Express Lanes and the I-15 Express Lanes project.
- Continue the public outreach program, "Operation Lifesaver", targeting schools in close proximity to railroad tracks on rail safety education, engineering, and enforcement.

Table 7 – External Affairs

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 855,100	$ 849,100	$ 848,900	$ 1,542,000	$ 692,900	82%
Professional	1,083,500	1,003,400	1,001,400	1,111,000	107,600	11%
Support	101,700	412,400	323,500	612,900	200,500	49%
Transfers Out	124,700	-	-	-	-	N/A
TOTAL	$ 2,165,000	$ 2,264,900	$ 2,173,800	$ 3,265,900	$ 1,001,000	44%

Finance

- Continue appropriate uses of long- and short-term financing to advance the Commission's 2009 Measure A projects.
- Provide support to the 91 Express Lanes toll operations contractor back offices to ensure the proper accounting of toll revenues and operations and maintenance costs.
- Keep abreast of Governmental Accounting Standards Board (GASB) technical activities affecting the Commission's accounting and financial reporting activities and implement new pronouncements.
- Upgrade the Enterprise Resource Planning (ERP) system to benefit all staff in the management of accounting and project information and automation of a paperless workflow system.
- Manage a centralized procurements process in order to strengthen controls and ensure consistency in the application of procurement policies and procedures and adherence to applicable laws and regulations.
- Support outreach activities to encourage disadvantaged business enterprise (DBE) and small business enterprise (SBE) participation in various contracts.

Table 8 – Finance

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 1,146,000	$ 1,182,300	$ 1,138,600	$ 2,511,300	$ 1,329,000	112%
Professional	1,518,100	2,235,800	1,405,300	2,200,100	(35,700)	-2%
Support	369,600	543,500	431,400	608,800	65,300	12%
Capital Outlay	-	513,700	100,000	845,000	331,300	64%
Transfers Out	14,013,800	13,183,400	11,253,400	10,087,900	(3,095,500)	-23%
TOTAL	$ 17,047,500	$ 17,658,700	$ 14,328,700	$ 16,253,100	$ (1,405,600)	-8%

Planning and Programming

- Monitor funding authority and responsibility related to the State Transportation Improvement Program (STIP).
- Ensure administration and implementation of STIP/Regional Improvement Program (RIP), Active Transportation Program (ATP), and other funded projects consistent with California Transportation Commission (CTC), California Department of Transportation (Caltrans), and Southern California Association of Governments (SCAG) policies.
- Continue to strategically program projects for all local agencies countywide into the Federal Transportation Improvement Program (FTIP) and obligate funds in an expeditious manner for the maximum use of all available funding, including monitoring the use of such funding to prevent from lapsing.
- Monitor all projects programmed to receive 2009 Measure A, TUMF, state, and federal funds to ensure timely delivery and prevent funds from lapsing.
- Focus on interregional concerns and maintain effective working relationships involving various multi-county transportation issues, including goods movement.

- Coordinate planning efforts with regional and local agencies relating to the development of Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and greenhouse gas reduction (GHG) implementation guidelines.
- Participate in the CTC and Caltrans's forums in preparation and evaluation of ATP projects for the statewide and MPO funding programs to represent the County's best interest in program funding.
- Administer the Bicycle and Pedestrian Facilities Program (SB 821).
- Continue the development of a countywide integrated long-range transportation plan consistent with local, regional, and state planning requirements.

Table 9 – Planning and Programming

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 1,008,000	$ 1,037,400	$ 887,900	$ 2,186,800	$ 1,149,400	111%
Professional	95,900	343,900	122,200	294,000	(49,900)	-15%
Support	22,100	19,500	16,800	21,600	2,100	11%
Projects and Operations	2,779,000	18,046,500	3,991,000	8,787,100	(9,259,400)	-51%
Transfers Out	388,800	1,017,400	1,027,400	3,223,400	2,206,000	217%
TOTAL	$ 4,293,800	$ 20,464,700	$ 6,045,300	$ 14,512,900	$ (5,951,800)	-29%

Rail Maintenance and Operations

- As a member of the SCRRA, continue active participation in the governance and operations of the Metrolink commuter rail system.
- Continue the planning and implementation of capital improvements at the commuter rail stations in the County, including security and rehabilitation projects and parking requirements.
- Continue to support and evaluate activities related to the Perris Valley Line (PVL) service, such as promoting ridership.
- Establish the best approach to build, maintain, and operate cost effective and environmentally sustainable facilities that meet the public's transportation needs.
- Lead the service development process and actively coordinate with all stakeholders along the Coachella Valley-San Gorgonio Pass corridor for intercity passenger rail service.
- Advance the next generation rail feasibility study to evaluate future growth opportunities for passenger rail in the County.
- Construct the special trains platform in the city of Indio to serve the music festival events and reduce congestion.

Table 10 – Rail Maintenance and Operations

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 586,000	$ 820,900	$ 628,500	$ 1,184,000	$ 363,100	44%
Professional	1,426,300	3,224,000	1,979,800	10,332,700	7,108,700	220%
Support	2,250,000	3,346,800	2,399,500	3,305,200	(41,600)	-1%
Projects and Operations	19,271,100	32,755,600	28,434,000	30,246,600	(2,509,000)	-8%
Capital Outlay	47,800	89,600	88,700	180,000	90,400	101%
Transfers Out	580,500	882,900	882,900	980,000	97,100	11%
TOTAL	$ 24,161,700	$ 41,119,800	$ 34,413,400	$ 46,228,500	$ 5,108,700	12%

Public and Specialized Transit

- Coordinate the operation of all public transportation services within the County by promoting program efficiency between transit operators.
- Continue public transit operator oversight and fiduciary responsibilities to ensure completion of annual fiscal audits and state triennial performance audits in accordance with TDA regulations.
- Support innovative programs that provide transit assistance in hard to serve rural areas or for riders having very special transit needs and monitor funding of these programs.
- Continue long-range planning activities to ensure that anticipated revenues are in line with projected levels of service by transit operators.
- Develop a TDA manual for transit operators receiving allocations from the Commission.

Table 11 – Public and Specialized Transit

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 391,700	$ 450,200	$ 462,000	$ 895,100	$ 444,900	99%
Professional	107,600	314,000	252,900	299,700	(14,300)	-5%
Support	50,300	63,900	64,000	69,200	5,300	8%
Projects and Operations	90,683,100	180,911,000	124,584,600	162,004,400	(18,906,600)	-10%
Transfers Out	22,224,000	28,602,300	27,305,700	30,460,300	1,858,000	6%
TOTAL	$ 113,456,700	$ 210,341,400	$ 152,669,200	$ 193,728,700	$ (16,612,700)	-8%

Commuter Assistance

- Improve the suite of services and outreach to rideshare participants and employer partners, including personalized information and electronic access and distribution.
- Transition from a locally provided Inland Empire-based rideshare and vanpool system to a regional platform.
- Maintain and grow employer partnerships through value-added services and tools for ridesharing programs.
- Maintain the long-term partnership with San Bernardino County Transportation Authority (SBCTA) to manage and implement a "sister" commuter assistance program for residents and employers in San Bernardino County.
- Optimize park and ride facilities to support car/vanpool/buspool arrangements and facilitate transit connections.
- Operate a cost-effective program within the County that results in reduction of single occupant vehicles.

Table 12 – Commuter Assistance

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 258,300	$ 290,000	$ 289,900	$ 436,500	$ 146,500	51%
Professional	492,500	466,400	387,600	542,700	76,300	16%
Support	178,700	362,800	88,900	285,800	(77,000)	-21%
Projects and Operations	2,498,000	3,383,900	2,610,200	3,313,300	(70,600)	-2%
Transfers Out	1,020,200	1,696,500	1,331,700	302,500	(1,394,000)	-82%
TOTAL	$ 4,447,700	$ 6,199,600	$ 4,708,300	$ 4,880,800	$ (1,318,800)	-21%

Motorist Assistance

- Fulfill the callbox upgrade and removal program as identified in the approved 2019 Callbox Optimization Plan.
- Maintain a high benefit-to-cost ratio related to the performance of the FSP program and expand service if funding opportunities arise.
- Transition from a locally provided IE511 system to a regional southern California 511 solution.
- Continue the call box system program to serve as a "safe net" for stranded motorists in the County.

Table 13 – Motorist Assistance

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 123,700	$ 198,200	$ 172,000	$ 280,900	$ 82,700	42%
Professional	352,300	528,200	276,100	522,000	(6,200)	-1%
Support	291,000	295,900	160,600	416,400	120,500	41%
Projects and Operations	2,848,900	5,161,800	3,517,100	5,397,000	235,200	5%
Transfers Out	1,293,400	3,820,500	3,820,500	2,748,200	(1,072,300)	-28%
TOTAL	$ 4,909,300	$ 10,004,600	$ 7,946,300	$ 9,364,500	$ (640,100)	-6%

Capital Project Development and Delivery

- Continue project work on the Western Riverside County Delivery Plan projects, including the I-15 Express Lanes, SR-60 truck lanes, Mid County Parkway, and Pachappa underpass projects.
- Provide 2009 Measure A funding to the incorporated cities and the County for local streets and roads maintenance, repair, and construction and to the Coachella Valley Association of Governments (CVAG) for highways and regional arterials.

- Provide TUMF regional arterial funding and support to local jurisdictions for regional arterial project engineering, right of way acquisition, and construction.
- Maintain a right of way acquisition and management program in support of capital projects and in the most cost effective manner within project schedules, while adhering to federal and state regulations.
- Maintain and manage the access, use, safety, and security of Commission-owned properties including commuter rail stations, properties in acquisition process, and income-generating properties.
- Develop strategies to implement alternative financing structures including public express lanes.

Table 14 – Capital Project Development and Delivery

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 3,005,300	$ 3,911,900	$ 3,911,800	$ 7,077,600	$ 3,165,700	81%
Professional	7,664,400	8,907,200	5,218,600	6,833,600	(2,073,600)	-23%
Support	429,800	1,185,100	1,016,000	1,336,900	151,800	13%
Projects and Operations	274,246,400	542,145,700	363,457,700	532,636,700	(9,509,000)	-2%
Capital Outlay	2,177,200	7,224,800	6,336,700	3,052,000	(4,172,800)	-58%
Debt Service	656,868,900	69,555,700	65,085,700	69,534,500	(21,200)	0%
Transfers Out	282,693,700	126,704,100	108,636,800	114,346,100	(12,358,000)	-10%
TOTAL	$1,227,085,700	$ 759,634,500	$ 553,663,300	$ 734,817,400	$ (24,817,100)	-3%

Toll Operations

- Manage the operations of the RCTC 91 Express Lanes adhering to the Commission's 91 Express Lanes Toll Policy.
- Manage toll operations using investment grade traffic and revenue studies and cost estimate assumptions specific to each express lane facility.
- Continue 15 Express Lanes toll planning through development of business rules and agency agreements.
- Provide timely and effective reporting of toll operation metrics including revenue, transactions, carpool usage, and performance indicators.
- Participate in the California Toll Operators Committee to advance regional and statewide tolling initiatives, technology, interoperability, and coordination among California toll agencies.

Table 15 – Toll Operations

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Personnel	$ 510,300	$ 638,000	$ 638,000	$ 1,353,400	$ 715,400	112%
Professional	815,400	2,351,000	2,350,000	1,990,000	(361,000)	-15%
Support and Maintenance	2,793,400	4,576,700	3,936,800	4,543,300	(33,400)	-1%
Projects and Operations	6,661,400	8,786,100	8,507,900	10,670,200	1,884,100	21%
Capital Outlay	319,600	2,497,600	2,314,100	750,000	(1,747,600)	-70%
Debt Service	7,119,900	27,119,900	27,119,900	7,119,900	(20,000,000)	-74%
Transfers Out	749,600	6,307,200	3,948,200	3,059,500	(3,247,700)	-51%
TOTAL	$ 18,969,600	$ 52,276,500	$ 48,814,900	$ 29,486,300	$ (22,790,200)	-44%

Fund Balances

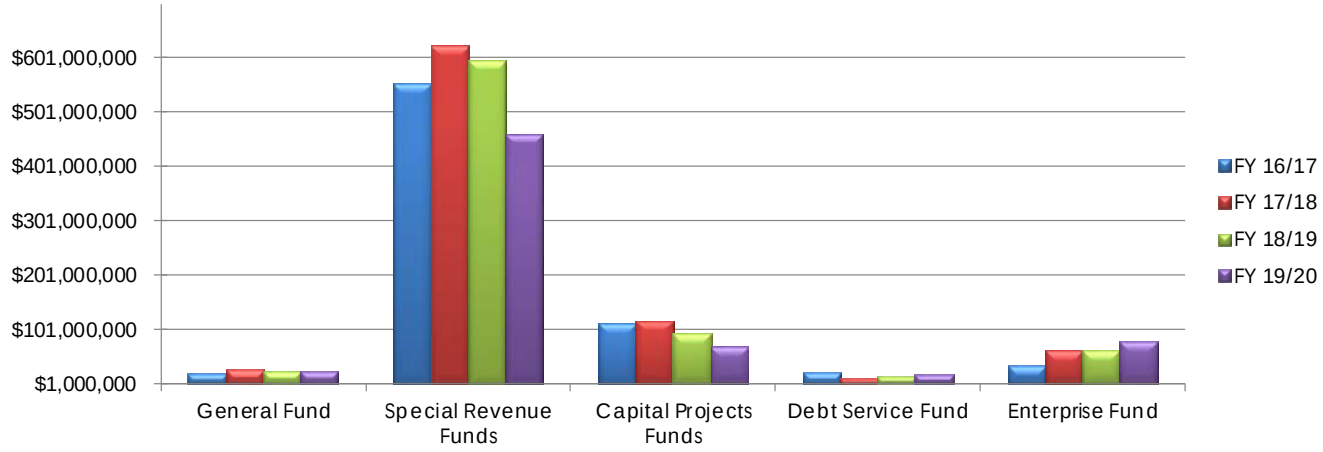
The projected total fund balance as of June 30, 2019 is $792,310,100. The Commission's expects the FY 2019/20 budgeted activities to result in a $142,818,600 decrease of total fund balance at June 30, 2020 to $649,491,500. The primary cause of the decrease is project activities in FY 2019/20 related to the I-15 Express Lanes project, completion of the 91 Project, Mid County Parkway project, rail station maintenance, TUMF regional arterial projects, and public transit allocations. Table 16 presents the components of the projected fund balance by program at June 30, 2020.

Table 16 – Projected Fund Balances by Fund Type and Program at June 30, 2020

	Measure A Sales Tax				
	Western County	Coachella Valley	Palo Verde	Other	Total
Restricted:					
Bond Financing	$ 11,438,300	$ -	$ -	$ -	$ 11,438,300
Commuter Assistance	15,043,200	-	-	-	15,043,200
Debt Service	-	-	-	17,771,200	17,771,200
Economic Development	12,733,500	-	-	-	12,733,500
Highways	35,879,600	38,250,400	-	69,954,800	144,084,800
Local Streets and Roads	1,000	1,300	600	-	2,900
New Corridors	28,994,600	-	-	-	28,994,600
Planning and Programming	-	-	-	442,700	442,700
Public and Specialized Transit	8,172,700	1,681,700	-	141,693,400	151,547,800
Rail	25,561,000	-	-	19,877,500	45,438,500
CETAP	-	-	-	45,368,500	45,368,500
Regional Arterials	42,946,100	-	-	42,924,700	85,870,800
Motorist Assistance	-	-	-	8,958,000	8,958,000
Toll Operations	-	-	-	77,626,800	77,626,800
Assigned:					
Management Services	-	-	-	4,169,900	4,169,900
TOTAL Fund Balance	$ 180,770,000	$ 39,933,400	$ 600	$ 428,787,500	$ 649,491,500

Chart 8 illustrates the actual and projected trends in fund balances for each governmental and enterprise fund type from FY 2016/17 through FY 2019/20.

Chart 8 – Projected Fund Balance Trends by Fund Type FY 2017 – 2020



Budget Summary

The overall budget for FY 2019/20 is presented in Table 17 by summarized line items, Table 18 by operating and capital classifications, and Table 19 by fund type. Highway, rail, and regional arterial program expenditures by project are summarized in Table 20.

Table 17 – Budget Comparative by Summarized Line Item FY 2018—2020

	FY 17/18 Actual	FY 18/19 Revised Budget	FY 18/19 Projected	FY 19/20 Budget	Dollar Change	Percent Change
Revenues						
Measure A Sales Tax	$ 176,301,700	$ 192,000,000	$ 192,000,000	$ 193,000,000	$ 1,000,000	1%
LTF Sales Tax	89,557,600	96,000,000	96,000,000	97,000,000	1,000,000	1%
STA Sales Tax	21,320,900	23,203,600	27,110,700	31,050,600	7,847,000	34%
Federal Reimbursements	71,468,000	59,105,700	74,419,800	88,718,700	29,613,000	50%
State Reimbursements	11,952,100	166,590,100	80,409,200	173,799,200	7,209,100	4%
Local Reimbursements	4,786,900	23,492,500	5,720,900	9,957,900	(13,534,600)	-58%
TUMF Revenue	23,699,800	25,922,200	26,672,200	25,000,000	(922,200)	-4%
Tolls, Penalties, and Fees	50,446,800	36,940,500	47,756,900	41,869,400	4,928,900	13%
Other Revenue	3,199,500	1,084,400	468,500	553,000	(531,400)	-49%
Investment Income	9,117,000	3,408,000	10,064,800	12,754,300	9,346,300	274%
TOTAL Revenues	461,850,300	627,747,000	560,623,000	673,703,100	45,956,100	7%
Expenditures/Expenses						
Personnel Salaries and Benefits	8,846,000	10,354,700	9,917,000	19,396,500	9,041,800	87%
Professional and Support						
Professional Services	14,249,800	20,451,700	13,902,600	25,447,300	4,995,600	24%
Support Costs	7,246,200	11,911,000	9,363,200	12,383,200	472,200	4%
TOTAL Professional and Support Costs	21,496,000	32,362,700	23,265,800	37,830,500	5,467,800	17%
Projects and Operations						
Program Operations	24,298,500	27,893,500	23,575,800	30,447,100	2,553,600	9%
Engineering	8,155,100	36,537,600	13,617,300	22,436,000	(14,101,600)	-39%
Construction	21,408,500	131,796,700	73,057,200	155,418,000	23,621,300	18%
Design Build	123,999,200	183,818,300	146,305,000	141,583,000	(42,235,300)	-23%
Right of Way/Land	39,048,100	95,615,000	35,950,600	108,498,500	12,883,500	13%
Operating and Capital Disbursements	111,707,000	224,661,000	157,582,100	204,759,400	(19,901,600)	-9%
Special Studies	1,458,300	1,842,000	1,535,000	1,271,000	(571,000)	-31%
Local Streets and Roads	53,176,800	58,479,500	58,479,500	58,642,300	162,800	0%
Regional Arterials	15,736,400	30,547,000	25,000,000	30,000,000	(547,000)	-2%
TOTAL Projects and Operations	398,987,900	791,190,600	535,102,500	753,055,300	(38,135,300)	-5%
Debt Service						
Principal Payments	62,141,000	25,965,000	21,495,000	27,245,000	1,280,000	5%
Interest Payments	57,726,800	50,710,600	50,710,600	49,409,400	(1,301,200)	-3%
Cost of Issuance	2,256,100	-	-	-	-	N/A
TOTAL Debt Service	122,123,900	76,675,600	72,205,600	76,654,400	(21,200)	0%
Capital Outlay	2,926,500	10,837,000	9,347,500	5,288,000	(5,549,000)	-51%
TOTAL Expenditures/Expenses	554,380,300	921,420,600	649,838,400	892,224,700	(29,195,900)	-3%
Excess (deficiency) of Revenues over (under) Expenditures/Expenses	(92,530,000)	(293,673,600)	(89,215,400)	(218,521,600)	75,152,000	-26%
Other Financing Sources (Uses)						
Transfers In	323,263,800	182,214,300	158,206,600	165,207,900	(17,006,400)	-9%
Transfers Out	(323,263,800)	(182,214,300)	(158,206,600)	(165,207,900)	17,006,400	-9%
Debt Proceeds	615,775,000	-	-	-	-	N/A
TIFIA Loan Proceeds	-	106,081,000	61,841,100	75,703,000	(30,378,000)	-29%
Payment to Escrow Agent	(541,889,800)	(20,000,000)	(20,000,000)	-	20,000,000	-100%
Bond Premium	119,713,800	-	-	-	-	N/A
Net Financing Sources (Uses)	193,599,000	86,081,000	41,841,100	75,703,000	(10,378,000)	-12%
Excess (deficiency) of Revenues over (under) Expenditures/Expenses and Other Financing Sources (Uses)	101,069,000	(207,592,600)	(47,374,300)	(142,818,600)	64,774,000	-31%
Beginning Fund Balance	738,615,400	839,684,400	839,684,400	792,310,100	(47,374,300)	-6%
ENDING FUND BALANCE	$ 839,684,400	$ 632,091,800	$ 792,310,100	$ 649,491,500	$ 17,399,700	3%

Table 18 – Operating and Capital Budget FY 2019/20

	FY 19/20 Operating Budget	FY 19/20 Capital Budget	FY 19/20 TOTAL Budget
Revenues			
Measure A Sales Tax	$ 26,650,000	$ 166,350,000	$ 193,000,000
LTF Sales Tax	97,000,000	-	97,000,000
STA Sales Tax	31,050,600	-	31,050,600
Federal Reimbursements	9,480,000	79,238,700	88,718,700
State Reimbursements	13,890,500	159,908,700	173,799,200
Local Reimbursements	2,490,000	7,467,900	9,957,900
TUMF Revenue	-	25,000,000	25,000,000
Tolls, Penalties, and Fees	-	41,869,400	41,869,400
Other Revenue	-	553,000	553,000
Investment Income	4,165,500	8,588,800	12,754,300
TOTAL Revenues	184,726,600	488,976,500	673,703,100
Expenditures/Expenses			
Personnel Salaries and Benefits	10,764,000	8,632,500	19,396,500
Professional and Support			
Professional Services	16,592,700	8,854,600	25,447,300
Support Costs	6,501,900	5,881,300	12,383,200
TOTAL Professional and Support Costs	23,094,600	14,735,900	37,830,500
Projects and Operations			
Program Operations	11,688,900	18,758,200	30,447,100
Engineering	-	22,436,000	22,436,000
Construction	1,470,000	153,948,000	155,418,000
Design Build	-	141,583,000	141,583,000
Right of Way and Land	-	108,498,500	108,498,500
Operating and Capital Disbursements	188,909,400	15,850,000	204,759,400
Special Studies	1,271,000	-	1,271,000
Local Streets and Roads	-	58,642,300	58,642,300
Regional Arterials	-	30,000,000	30,000,000
TOTAL Projects and Operations	203,339,300	549,716,000	753,055,300
Debt Service			
Principal Payments	-	27,245,000	27,245,000
Interest Payments	-	49,409,400	49,409,400
TOTAL Debt Service	-	76,654,400	76,654,400
Capital Outlay	1,486,000	3,802,000	5,288,000
TOTAL Expenditures/Expenses	238,683,900	653,540,800	892,224,700
Excess (deficiency) of Revenues over (under) Expenditures/Expenses	(53,957,300)	(164,564,300)	(218,521,600)
Other Financing Sources (Uses)			
Transfers In	43,258,800	121,949,100	165,207,900
Transfers Out	(47,077,100)	(118,130,800)	(165,207,900)
TIFIA Loan Proceeds	-	75,703,000	75,703,000
Net Financing Sources (Uses)	(3,818,300)	79,521,300	75,703,000
Excess (deficiency) of Revenues over (under) Expenditures/Expenses and Other Financing Sources (Uses)	(57,775,600)	(85,043,000)	(142,818,600)
Beginning Fund Balance	263,681,000	528,629,100	792,310,100
ENDING FUND BALANCE	$ 205,905,400	$ 443,586,100	$ 649,491,500

Table 19 – Budget by Fund Type FY 2019/20

	General Fund	Special Revenue	Capital Projects	Debt Service	Enterprise	FY 19/20 TOTAL Budget
Revenues						
Measure A Sales Tax	$ -	$ 193,000,000	$ -	$ -	$ -	$ 193,000,000
LTF Sales Tax	-	97,000,000	-	-	-	97,000,000
STA Sales Tax	-	31,050,600	-	-	-	31,050,600
Federal Reimbursements	8,000,000	77,915,500	-	2,803,200	-	88,718,700
State Reimbursements	3,068,000	170,731,200	-	-	-	173,799,200
Local Reimbursements	400	9,957,500	-	-	-	9,957,900
TUMF Revenue	-	25,000,000	-	-	-	25,000,000
Tolls, Penalties, and Fees	-	-	-	-	41,869,400	41,869,400
Other Revenue	-	553,000	-	-	-	553,000
Investment Income	490,500	9,021,500	1,371,700	348,500	1,522,100	12,754,300
TOTAL Revenues	11,558,900	614,229,300	1,371,700	3,151,700	43,391,500	673,703,100
Expenditures/Expenses						
Personnel Salaries and Benefits	9,324,600	8,718,500	-	-	1,353,400	19,396,500
Professional and Support						
Professional Services	5,013,600	18,443,700	-	-	1,990,000	25,447,300
Support Costs	2,877,000	4,962,900	-	-	4,543,300	12,383,200
TOTAL Professional and Support Costs	7,890,600	23,406,600	-	-	6,533,300	37,830,500
Projects and Operations						
Program Operations	2,000	19,774,900	-	-	10,670,200	30,447,100
Engineering	-	22,436,000	-	-	-	22,436,000
Construction	1,470,000	153,948,000	-	-	-	155,418,000
Design Build	-	141,583,000	-	-	-	141,583,000
Right of Way/Land	-	108,498,500	-	-	-	108,498,500
Operating and Capital Disbursements	27,005,000	177,754,400	-	-	-	204,759,400
Special Studies	1,271,000	-	-	-	-	1,271,000
Local Streets and Roads	-	58,642,300	-	-	-	58,642,300
Regional Arterials	-	30,000,000	-	-	-	30,000,000
TOTAL Projects and Operations	29,748,000	712,637,100	-	-	10,670,200	753,055,300
Debt Service						
Principal Payments	-	-	-	27,245,000	-	27,245,000
Interest Payments	-	-	-	42,289,500	7,119,900	49,409,400
TOTAL Debt Service	-	-	-	69,534,500	7,119,900	76,654,400
Capital Outlay	1,306,000	3,232,000	-	-	750,000	5,288,000
TOTAL Expenditures/Expenses	48,269,200	747,994,200	-	69,534,500	26,426,800	892,224,700
Excess (deficiency) of Revenues over (under) Expenditures/Expenses	(36,710,300)	(133,764,900)	1,371,700	(66,382,800)	16,964,700	(218,521,600)
Other Financing Sources (Uses)						
Transfers In	40,408,800	52,264,600	-	72,534,500	-	165,207,900
Transfers Out	(3,394,600)	(131,548,200)	(24,402,400)	(2,803,200)	(3,059,500)	(165,207,900)
TIFIA Loan Proceeds	-	75,703,000	-	-	-	75,703,000
Net Financing Sources (Uses)	37,014,200	(3,580,600)	(24,402,400)	69,731,300	(3,059,500)	75,703,000
Excess (deficiency) of Revenues over (under) Expenditures/Expenses and Other Financing Sources (Uses)	303,900	(137,345,500)	(23,030,700)	3,348,500	13,905,200	(142,818,600)
Beginning Fund Balance	23,699,700	597,480,600	92,985,500	14,422,700	63,721,600	792,310,100
ENDING FUND BALANCE	$ 24,003,600	$ 460,135,100	$ 69,954,800	$ 17,771,200	$ 77,626,800	$ 649,491,500

Table 20 – Highway, Regional Arterial, and Rail Programs FY 2019/20

Description		
HIGHWAY ENGINEERING		
60/215 Riverside — Moreno Valley express lanes	$	300,000
71/91 connector		2,500,000
Grade separation projects		4,100,000
Hamner Bridge widening		508,000
I-15 Express Lanes southern extension		6,000,000
Mid County Parkway (MCP)		500,000
MCP I-215/Placentia interchange		300,000
MCP Sweeney mitigation		50,000
MCP construction contract package		2,000,000
Pachappa underpass		100,000
Riverside County-Santa Ana River Trail *(details presented in Sections 5.2 Planning and Programming and 5.3 Capital Projects)*		850,000
SR-60 Jurupa — Riverside express lanes		325,000
SR-74 corridor — Ethanac Road		1,157,700
SR-79 realignment		300,000
SR-91 downtown Riverside express lanes		325,000
General *(details presented in Section 5.3 Capital Projects)*		86,000
SUBTOTAL HIGHWAY ENGINEERING		19,401,700
REGIONAL ARTERIAL ENGINEERING		
I-15 Railroad Canyon interchange		600,000
Various Western County MARA and TUMF regional arterial projects		364,300
SUBTOTAL REGIONAL ARTERIAL ENGINEERING		964,300
RAIL ENGINEERING		
Moreno Valley March Field station upgrade		900,000
Riverside layover facility		170,000
Riverside Downtown station track and platform		1,000,000
SUBTOTAL RAIL ENGINEERING		2,070,000
TOTAL HIGHWAY, REGIONAL ARTERIAL, AND RAIL ENGINEERING	**$**	**22,436,000**
HIGHWAY CONSTRUCTION		
15/91 Express Lanes connector	$	1,053,000
91 Project		1,471,000
I-15 Express Lanes		7,984,000
I-15/Limonite interchange		17,000,000
I-215 corridor improvements (central segment)/Scott Road to Nuevo Road		10,000
MCP I-215/Placentia interchange		13,000,000
MCP Sweeney mitigation		5,200,000
Pachappa underpass		15,900,000
Riverside County-Santa Ana River Trail *(details presented in Sections 5.2 Planning and Programming and 5.3 Capital Projects)*		5,000,000
SR-60 truck lanes		69,000,000
SUBTOTAL HIGHWAY CONSTRUCTION		135,618,000
REGIONAL ARTERIAL CONSTRUCTION		
Various Western County MARA and TUMF regional arterial projects		13,900,000
SUBTOTAL REGIONAL ARTERIAL CONSTRUCTION		13,900,000
RAIL CONSTRUCTION		
Perris Valley Line and other related rail projects		30,000
Riverside layover facility		4,400,000
Other Riverside Downtown station mobility improvements *(details presented in Section 5.2 Rail)*		1,470,000
SUBTOTAL RAIL CONSTRUCTION		5,900,000
TOTAL HIGHWAY, REGIONAL ARTERIAL, AND RAIL CONSTRUCTION	**$**	**155,418,000**
HIGHWAY DESIGN BUILD		
15/91 Express Lanes connector	$	41,718,000
60/215 Riverside — Moreno Valley express lanes		200,000
91 corridor operations project		2,729,000
91 Project		6,923,000
I-15 Express Lanes		89,613,000
SR-60 Jurupa — Riverside express lanes		200,000
SR-91 downtown Riverside express lanes		200,000
TOTAL HIGHWAY DESIGN BUILD	**$**	**141,583,000**
HIGHWAY RIGHT OF WAY AND LAND		
15/91 Express Lanes connector	$	495,000
60/215 East Junction high occupancy vehicle (HOV) lane connectors		10,000
71/91 connector		4,600,000
91 Project		16,722,000
Hamner bridge widening		149,000
I-15 Express Lanes		328,000
Jurupa Avenue grade separation		12,000,000
McKinley Avenue grade separation		14,000,000
MCP		10,400,000
MCP I-215/Placentia interchange		13,650,000
MSHCP land acquisition in Western County		3,000,000
Pachappa underpass		175,000
Riverside County-Santa Ana River Trail *(details presented in Sections 5.2 Planning and Programming and 5.3 Capital Projects)*		205,000
SR-74/I-15 to 7th Street		15,000
SR-91 HOV lanes/Adams Street to 60/91/215 interchange		505,000
General *(details presented in Section 5.3 Capital Projects)*		74,500
SUBTOTAL HIGHWAY RIGHT OF WAY AND LAND		76,328,500
REGIONAL ARTERIAL RIGHT OF WAY AND LAND		
I-15 Railroad Canyon interchange		2,200,000
Various Western County MARA and TUMF regional arterial projects		12,360,000
SUBTOTAL REGIONAL ARTERIAL RIGHT OF WAY AND LAND		14,560,000
RAIL RIGHT OF WAY AND LAND		
Riverside layover facility		210,000
Riverside Downtown station track and platform		17,250,000
General		150,000
SUBTOTAL RAIL RIGHT OF WAY AND LAND		17,610,000
TOTAL HIGHWAY, REGIONAL ARTERIAL, AND RAIL RIGHT OF WAY AND LAND	**$**	**108,498,500**
GRAND TOTAL HIGHWAY, REGIONAL ARTERIAL, AND RAIL PROGRAMS	**$**	**427,935,500**

AGENDA ITEM 9A

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Budget and Implementation Committee Michele Cisneros, Deputy Director of Finance
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Quarterly Sales Tax Analysis

BUDGET AND IMPLEMENTATION COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to receive and file the sales tax analysis for Quarter 3, 2018 (3Q 2018).

BACKGROUND INFORMATION:

At its December 2007 meeting, the Commission awarded an agreement with MuniServices, LLC (MuniServices), an Avenu Company, for quarterly sales tax reporting services plus additional fees contingent on additional sales tax revenues generated from the transactions and use tax (sales tax) audit services. As part of the recurring contracts process in June 2018, the Commission approved a five-year extension through June 30, 2023. The services performed under this agreement pertain to only the Measure A sales tax revenues.

Since the commencement of these services, MuniServices submitted audits, which reported findings and submitted to the California Department of Tax and Fee Administration (CDTFA), as successor to the California State Board of Equalization, for review and determination of errors in sales tax reporting related to 881 businesses. Through 3Q 2018, the CDTFA approved 573 of these accounts for a cumulative sales tax recovery of $9,526,043. Updated amounts for 3Q 2018 will be provided once received from MuniServices. If CDTFA concurs with the error(s) for the remaining claims, the Commission will receive additional revenues; however, the magnitude of the value of the remaining findings was not available. It is important to note that while the recoveries of additional revenues will be tangible, it will not be sufficient to alter the overall trend of sales tax revenues.

Additionally, MuniServices provided the Commission with the Quarterly Sales Tax Digest Summary report for 3Q 2018. Most of the 3Q 2018 Measure A sales tax revenues were received in the fourth quarter of calendar year 2018, during October 2018 through December 2018, due to a lag in the sales tax calendar. The summary section of the 3Q 2018 report is attached and includes an overview of California's economic outlook, local results, historical cash collections analysis by quarter, top 25 sales/use tax contributors, historical sales tax amounts, annual sales

tax by business category, and five-year economic trend for significant business category (general retail).

As reported to the Commission in November 2018, the CDTFA implemented a new automation system in May 2018, and encountered some issues that included delays in tax return processing. This included numerous sales tax returns for the first two quarters of calendar year 2018 unprocessed at the CDTFA. The CDTFA has been responsive and committed to resolving the issues and completed the 1Q and 2Q 2018 unprocessed sales tax returns and has an insignificant amount of 3Q 2018 unprocessed sales tax returns. Staff continues to work closely with MuniServices to receive regular updates on the CDTFA unprocessed sales tax returns.

Taxable transactions for the top 25 contributors in Riverside County generated 24.3 percent of taxable sales for the benchmark year ended 3Q 2018, slightly higher than the 22.8 percent for the benchmark year ended 3Q 2017. The top 100 tax contributors generated 38.8 percent, slightly higher than the 36.8 percent for the benchmark year ended 3Q 2017.

In the Economic Category Analysis below, five of the six categories experienced new highs in the 3Q 2018 benchmark year compared to the prior eight benchmark years. The Miscellaneous category is below the 3Q 2015 benchmark year due to the Department of Motor Vehicles (DMV) change to sales taxes being reported using a unique transaction code rather than historically as a sales tax permit. The DMV sales tax reporting change will be reflected correctly in the 4Q 2018 report.

ECONOMIC CATEGORY ANALYSIS

% of Total / % Change	RCTC	State Wide	Orange County	San Bernardino County	S.F. Bay Area	Sacramento Valley	Central Valley	South Coast	North Coast	Central Coast
General Retail	28.1 / 6.5	27.0 / 1.9	27.9 / 2.3	26.0 / 3.0	24.9 / 1.8	26.9 / 1.4	30.2 / 3.6	27.6 / 1.7	28.1 / -6.1	29.2 / 2.5
Food Products	17.4 / 8.1	20.8 / 5.1	20.4 / 6.0	15.2 / 7.9	21.6 / 3.8	17.4 / 6.4	16.3 / 5.3	22.5 / 5.5	17.1 / -10.9	30.7 / 5.1
Transportation	25.2 / 5.7	23.9 / 5.1	23.3 / 4.3	26.8 / 2.0	22.1 / 12.0	28.8 / 5.5	25.8 / 5.1	23.0 / 3.0	29.7 / -7.3	22.6 / 9.3
Construction	10.9 / 12.2	9.9 / 13.7	8.9/ 13.1	9.5 / 16.4	9.9 / 13.1	11.8 / 15.3	11.7 / 16.2	8.9 / 12.7	13.5 / 7.4	8.2 / 24.4
Business to Business	16.6 / 6.6	17.2 / 5.3	18.2 / 3.7	20.3 / 5.7	20.4 / 7.2	14.1 / 4.0	15.2 / 10.3	16.8 / 4.6	10.1 / -4.7	8.6 / 1.9
Miscellaneous	1.8 / -14.8	1.2 / 11.0	1.3 / 4.5	2.2 / 6.1	1.2 / 20.4	1.0 / 0.0	0.7 / 8.6	1.2 / 9.2	1.6 / 19.1	0.8 / 4.2
Total	**100.0 / 6.7**	**100.0 / 5.1**	**100.0 / 4.7**	**100.0 / 5.2**	**100.0 / 6.7**	**100.0 / 5.3**	**100.0 / 6.6**	**100.0 / 4.3**	**100.0 /-5.3**	**100.0 / 6.3**

General Retail: Apparel Stores, Department Stores, Furniture/Appliances, Drug Stores, Recreation Products, Florist/Nursery, and Misc. Retail
Food Products: Restaurants, Food Markets, Liquor Stores, and Food Processing Equipment
Construction: Building Materials Retail and Building Materials Wholesale
Transportation: Auto Parts/Repair, Auto Sales - New, Auto Sales - Used, Service Stations, and Misc. Vehicle Sales
Business to Business: Office Equip., Electronic Equip., Business Services, Energy Sales, Chemical Products, Heavy Industry, Light Industry, Leasing, Biotechnology, I.T. Infrastructure, and Green Energy
Miscellaneous: Health & Government, Miscellaneous Other, and Closed Account Adjustments

An analysis of sales tax performance by quarter through 3Q 2018 is attached and illustrates fairly consistent cycles for sales tax performance for most of the economic categories since 3Q 2013.

For 9 of the top 10 segments (auto sales-new, restaurants, department stores, miscellaneous retail, building materials-wholesale, apparel stores, food markets, building materials-retail, and heavy industry) during the eight benchmark year quarters, sales tax receipts reached a new high point. The segments represent 65.3 percent of the total sales tax receipts. Service stations representing 8.3 percent was higher than the last five benchmark year quarters since 3Q 2014.

The top 10 segments represent 73.6 percent of the total sales tax receipts. For the other 21 segments representing 26.4 percent of the total sales tax receipts, 11 segments representing 19 percent of the total sales tax receipts reached new high points in the benchmark year 3Q 2018.

In the Economic Segments Analysis below, auto sales-new and department stores have been in the top three economic segments. Restaurants replaced service station in the top three economic segments beginning in 4Q 2014. The service stations segments high occurred in 4Q 2012 and declined through 1Q 2017 due to lower fuel prices; the 3Q 2018 benchmark year quarter for service stations reflects an increase over the last five benchmark years quarters since 3Q 2014 due to rising fuel prices.

ECONOMIC SEGMENT ANALYSIS										
	RCTC	State Wide	Orange County	San Bernardino County	S.F. Bay Area	Sacramento Valley	Central Valley	South Coast	North Coast	Central Coast
Largest Segment	**Auto Sales - New**	**Restaurants**	**Restaurants**	**Restaurants**	**Restaurants**	**Auto Sales - New**	**Department Stores**	**Restaurants**	**Department Stores**	**Restaurants**
% of Total / % Change	11.2 / 0.7	14.8 / 3.6	15.1 / 4.3	10.3 / 4.9	15.6 / 3.8	13.4 / 3.6	12.1 / 0.9	16.6 / 3.6	10.8 / -3.7	21.9 / 4.0
2nd Largest Segment	**Restaurants**	**Auto Sales - New**	**Auto Sales - New**	**Department Stores**	**Auto Sales - New**	**Restaurants**	**Restaurants**	**Auto Sales - New**	**Restaurants**	**Auto Sales - New**
% of Total / % Change	11.2 / 4.8	10.9 / 3.3	11.5 / 3.8	10.0 / 0.4	11.7 / 13.1	11.6 / 5.3	10.6 / 3.9	10.5 / 0.8	10.5 / -9.0	11.4 / 10.4
3rd Largest Segment	**Department Stores**	**Department Stores**	**Department Stores**	**Service Stations**	**Department Stores**	**Department Stores**	**Auto Sales - New**	**Department Stores**	**Service Stations**	**Misc Retail**
% of Total / % Change	9.4 / 2.3	8.7 / 0.5	8.5 / 0.6	9.8 / 11.6	7.0 / 1.7	10.3 / 0.6	10.4 / -0.1	8.4 / 0.7	10.5 / -0.3	9.8 / 3.5

During the review of the 3Q 2018 detailed report with MuniServices, staff was informed of a reporting error by one of the top 25 sales/use tax contributors related to a misallocation of the district tax to the Commission during 2Q 2018 through 4Q 2018, resulting in an overpayment to the Commission estimated in the amount of $2.5 million. Staff is not certain in which period the misallocation correction will be completed; however, the Fiscal Year 2019 sales tax revenues after the correction are expected to continue to reflect an increase over the FY 2018 revenues.

Information regarding sales tax comparison by city and change in economic segments (two highest gains and two highest losses) from 3Q 2017 to 3Q 2018 is attached.

Staff continues to monitor monthly sales tax receipts and other available economic data to determine the need for any adjustments to the revenue projections. Staff will utilize the forecast scenarios included with the complete report and receipt trends in assessing such projection.

Attachment:
1) Sales Tax Digest Summary 3Q 2018
2) Sales Tax Performance by Quarter 3Q 2018
3) Quarterly Sales Tax Comparison by City for 3Q 2017 to 3Q 2018

Riverside County Transportation Commission
Sales Tax Digest Summary

Collections through December 2018
Sales through September 2018 (2018Q3)

CALIFORNIA'S ECONOMIC OUTLOOK

California sales tax receipts increased by 22.9% over the same quarter from the previous year, with Northern California reporting a 23.8% increase compared to 22.3% for Southern California. Receipts for the RCTC increased by 26.7% over the same periods. Unprecedented increases were due to California Department of Tax and Fee Administration implementation of new reporting system and processing of many sales tax returns filed for the prior three quarters in the current quarter.

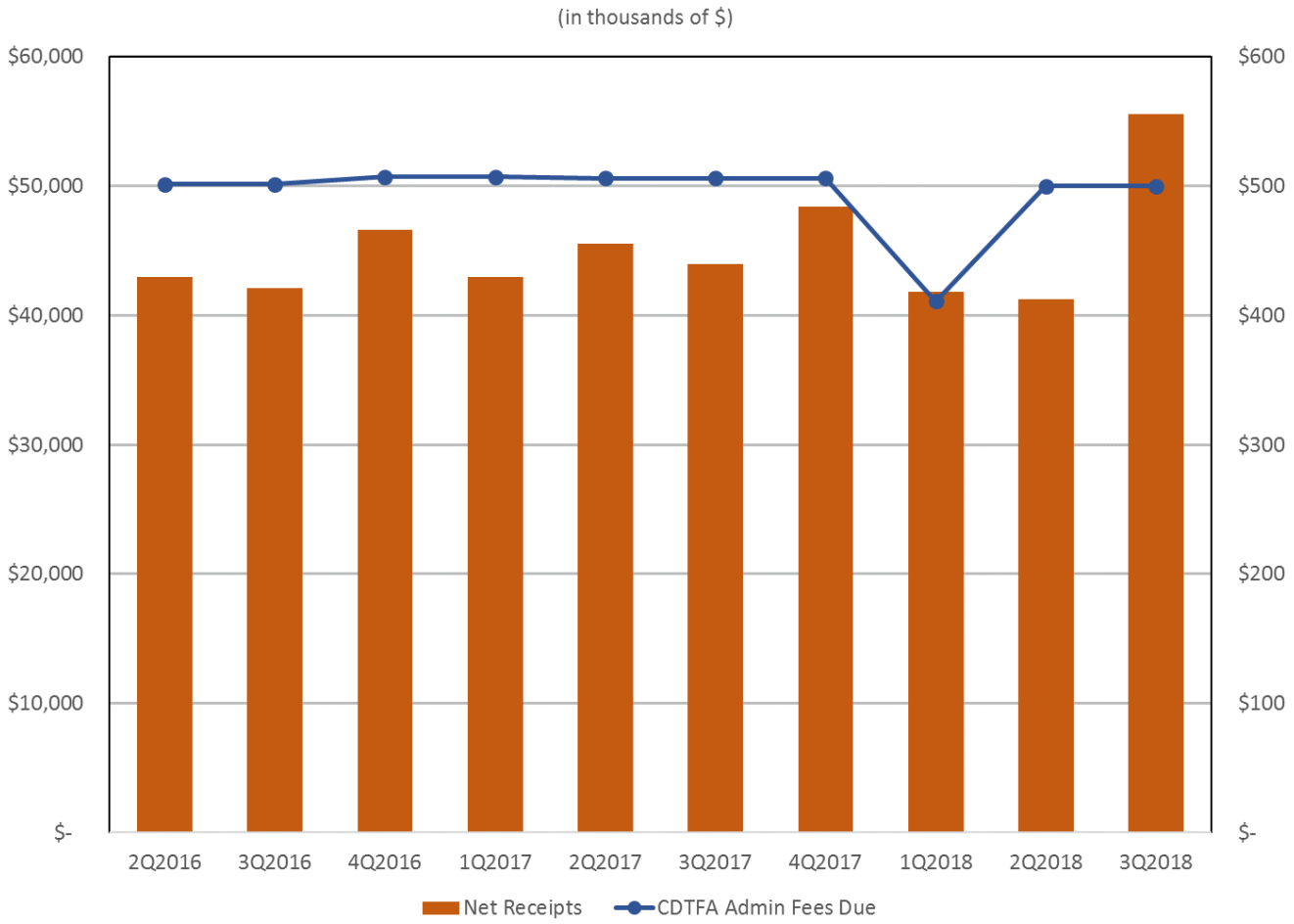
- **GDP:** Rose 3.4% in 3Q2018; 4.2% in 2Q2018. California GDP rose by 3.3% in the second quarter of 2018, following 3.7% growth in the first quarter on a year-over-year basis.
- **E-Commerce as a Percent of Total U.S. Sales (3Q2018):** 9.8% in 3Q2018. 9.6% in 2Q2018. 9.4% in 1Q2018. 9.1% in 4Q2017. 3Q2018 e-commerce estimate increased 14.5% from 3Q2018 while total retail sales increased 5.3% in the same period. E-commerce sales in 3Q2018 accounted for 9.8% of total sales.
- **Holiday Spending:** Retail sales rose 5.1% between November 1 and December 24 from a year ago. Total sales topped $850 billion this year. Online sales continued to grow, up more than 19% from a year ago. Online sales made up 13% of total retail sales.

LOCAL RESULTS

Net Cash Receipts Analysis	
Local Collections	$55,558,164
Share of County Pool 0.0%	0
Share of State Pool 0.0%	0
SBE Net Collections	55,558,164
Less: Amount Due County 0.0%	.00
Less: Cost of Administration	(500,220)
Net 3Q2018 Receipts	55,057,944
Net 3Q2017 Receipts	47,892,420
Actual Percentage Change	26.7%

Business Activity Performance Analysis	
Local Collections – Economic Basis 3Q2018	$46,291,846
Local Collections – Economic Basis 3Q2017	$43,882,787
Quarter over Quarter Change	2,409,059
Quarter over Quarter Percentage Change	5.5%
Avenu Insights & Analytics' On-Going Audit Results	
Total Recovered Year to Date	$9,526,403

HISTORICAL CASH COLLECTIONS ANALYSIS BY QUARTER



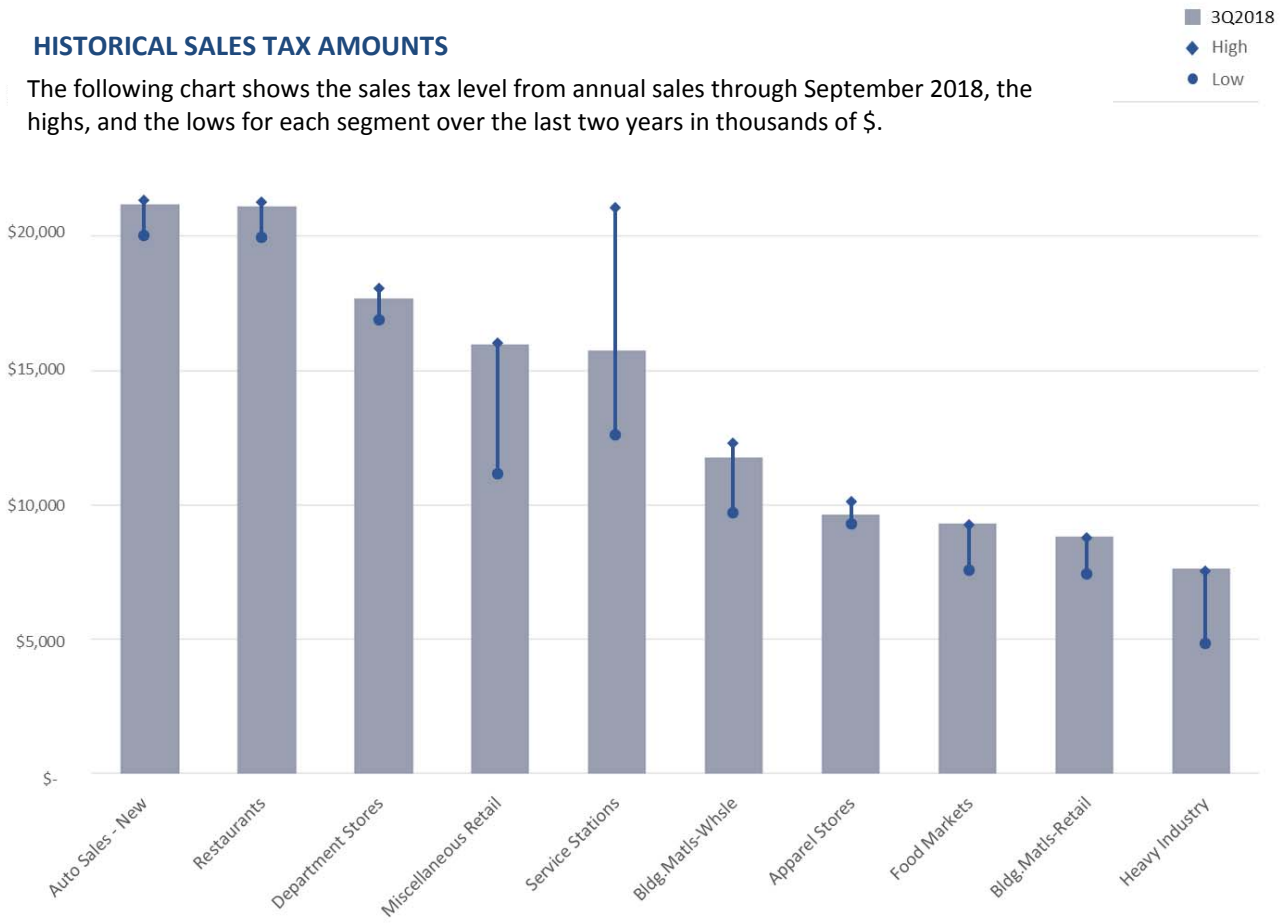
TOP 25 SALES/USE TAX CONTRIBUTORS

The following list identifies RCTC's Top 25 Sales/Use Tax contributors. The list is in alphabetical order and represents sales from October 2017 to September 2018. The Top 25 Sales/Use Tax contributors generate 24.3% of RCTC's total sales and use tax revenue.

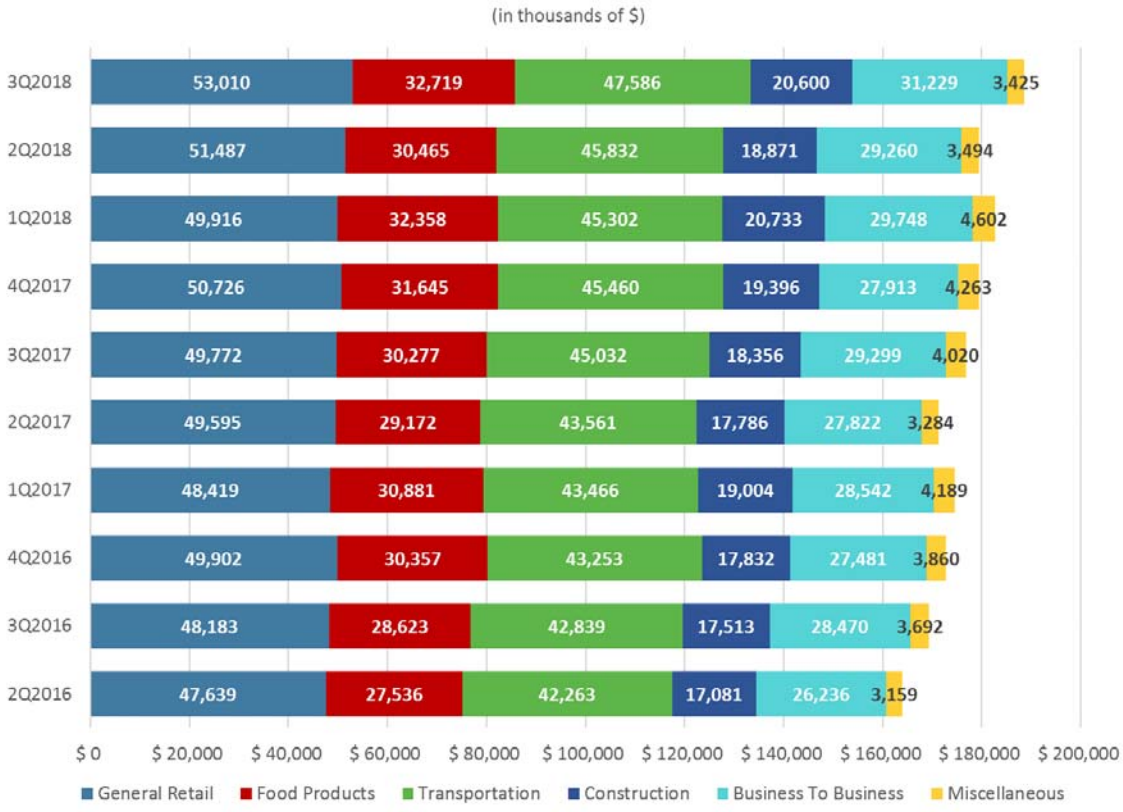
7-ELEVEN FOOD STORES
AMAZON.COM
ARCO AM/PM MINI MARTS
BEST BUY STORES
CARMAX THE AUTO SUPERSTORE
CHEVRON SERVICE STATIONS
CIRCLE K FOOD STORES
COSTCO WHOLESALE
DEPT OF MOTOR VEHICLES
FERGUSON ENTERPRISES
FOOD 4 LESS
HOME DEPOT
KOHL'S
LOWE'S HOME CENTERS
MACY'S DEPARTMENT STORE
MCDONALD'S
RALPH'S
ROSS STORES
SAM'S CLUB
SHELL SERVICE STATIONS
STATER BROS MARKETS
TARGET STORES
VERIZON WIRELESS
WAL MART STORES
WALGREEN'S

HISTORICAL SALES TAX AMOUNTS

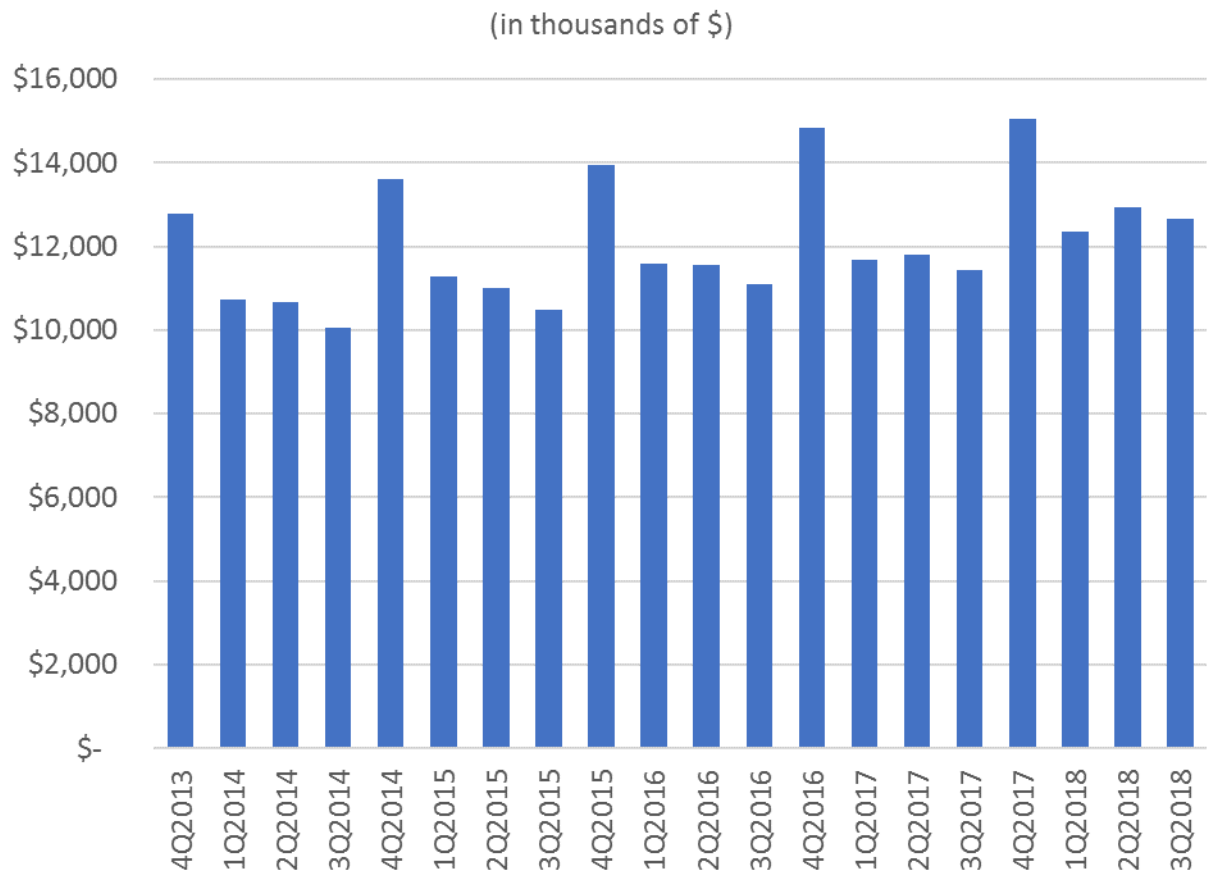
The following chart shows the sales tax level from annual sales through September 2018, the highs, and the lows for each segment over the last two years in thousands of $.



ANNUAL SALES TAX BY BUSINESS CATEGORY



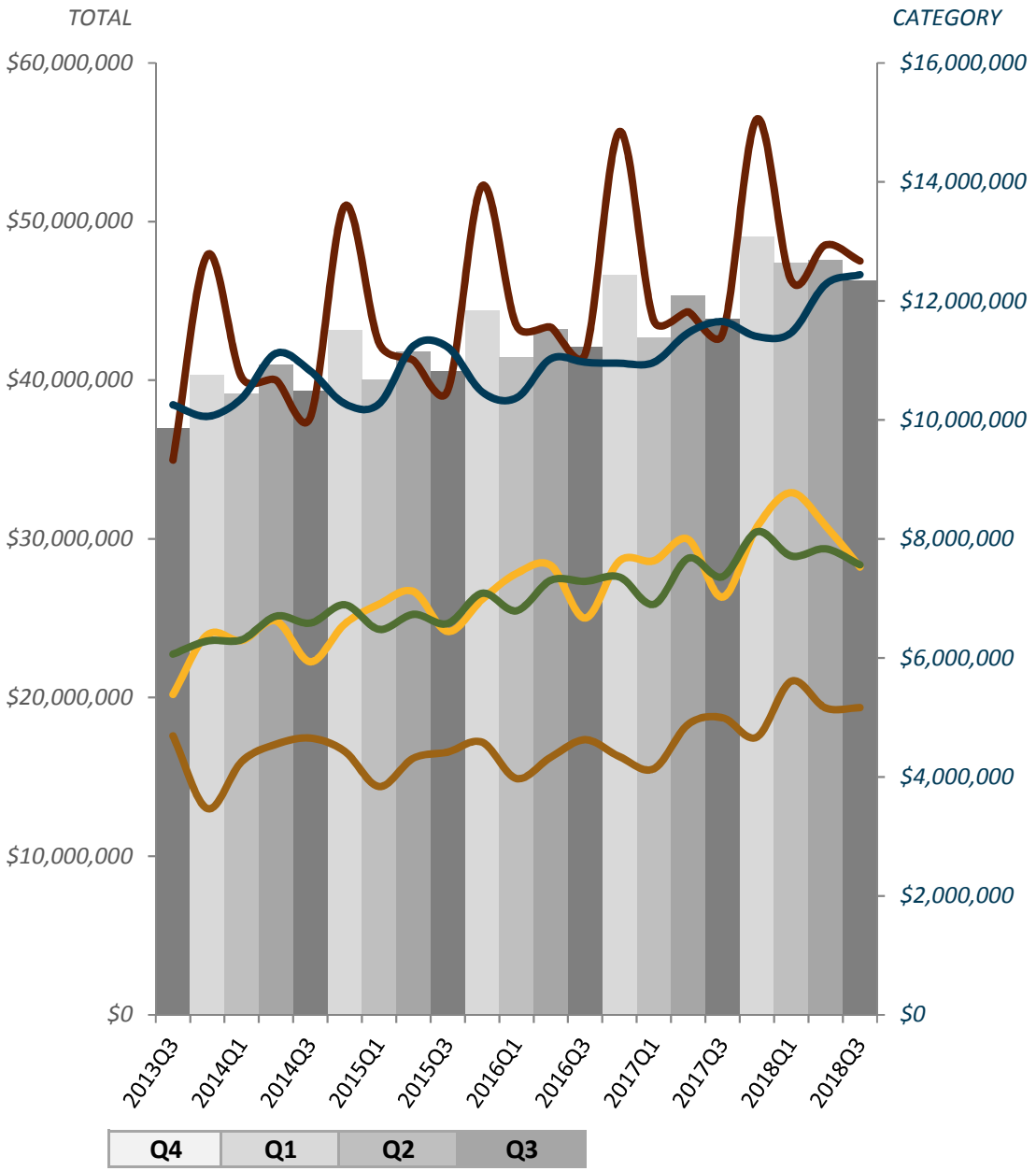
FIVE-YEAR ECONOMIC TREND: General Retail



RCTC: Sales Tax Performance Analysis by Quarter

TOTAL

Economic



TOTAL				
2018Q3	QoQ %Δ	QoQ $Δ	YoY %Δ	YoY $Δ
$46,291,846	5.5%	$2,409,059	6.6%	$11,829,643

GENERAL RETAIL				
2018Q3	QoQ %Δ	QoQ $Δ	YoY %Δ	YoY $Δ
$12,671,482	10.7%	$1,229,578	6.5%	$3,238,581
% of 2018Q3 Total:		27.4%		

FOOD PRODUCTS				
2018Q3	QoQ %Δ	QoQ $Δ	YoY %Δ	YoY $Δ
$7,527,056	7.2%	$504,870	8.1%	$2,441,684
% of Total:	16.3%			

TRANSPORTATION				
2018Q3	QoQ %Δ	QoQ $Δ	YoY %Δ	YoY $Δ
$12,440,661	6.8%	$789,580	5.7%	$2,553,482
% of Total:	26.9%			

CONSTRUCTION				
2018Q3	QoQ %Δ	QoQ $Δ	YoY %Δ	YoY $Δ
$5,163,949	3.4%	$169,143	12.2%	$2,244,007
% of Total:	11.2%			

BUSINESS TO BUSINESS				
2018Q3	QoQ %Δ	QoQ $Δ	YoY %Δ	YoY $Δ
$7,563,985	2.7%	$198,912	6.6%	$1,930,167
% of Total:	16.3%			

QoQ = 18Q3 / 17Q3 *YoY = YE 18Q3 / YE 17Q3*

Quarterly Comparison of 2017Q3 and 2018Q3 (July through September Sales)

	General Retail	Food Products	Transportation	Construction	Business To Bus	Miscellaneous	Jul - Sep 2018 (2018Q3)	Jul - Sep 2018 (2017Q3)	% Chg	Gain	Gain	Decline	Decline
RIVERSIDE COUNTY													
BANNING	-13.6%	9.9%	20.4%	-33.7%	229.4%	-8.3%	**692,759**	574,939	**20.5%**	Florist/Nursery	Light Industry	Energy Sales	Heavy Industry
BEAUMONT	-7.6%	4.7%	12.0%	7.5%	-35.0%	11.2%	**1,079,757**	1,075,196	**0.4%**	Auto Sales - Used	Business Services	Light Industry	Drug Stores
BLYTHE	-60.3%	12.1%	0.5%	1.0%	50.0%	-65.5%	**337,289**	351,850	**-4.1%**	Florist/Nursery	Light Industry	Business Services	Miscellaneous Other
CALIMESA	4.0%	14.1%	16.4%	-5.0%	36.6%	23.9%	**208,300**	181,363	**14.9%**	Electronic Equipment	Recreation Products	Business Services	Misc. Vehicle Sales
CANYON LAKE	-12.2%	15.9%	472.5%	-97.5%	-5.0%	-2.5%	**116,244**	52,712	**120.5%**	Auto Parts/Repair	Food Markets	Bldg.Matls-Whsle	Apparel Stores
CATHEDRAL CITY	4.3%	1.2%	4.9%	12.7%	-2.1%	-12.9%	**2,074,423**	1,998,905	**3.8%**	Miscellaneous Retail	Service Stations	Electronic Equipment	Energy Sales
COACHELLA	-5.2%	7.2%	11.0%	-20.3%	13.5%	-29.0%	**774,182**	727,380	**6.4%**	Leasing	Business Services	Health & Government	Drug Stores
CORONA	-5.6%	1.3%	2.5%	4.6%	-14.3%	-36.3%	**9,759,800**	10,015,616	**-2.6%**	Food Markets	Misc. Vehicle Sales	Health & Government	Food Processing Eqp
COUNTY OF RIVERSIDE	-1.1%	4.9%	11.4%	18.5%	-9.2%	-2.0%	**6,677,528**	6,427,519	**3.9%**	Auto Sales - Used	Auto Sales - New	Leasing	Drug Stores
DESERT HOT SPGS	1.7%	2.8%	14.2%	-32.0%	-19.1%	-71.7%	**352,545**	335,903	**5.0%**	Florist/Nursery	Miscellaneous Retail	Recreation Products	Bldg.Matls-Whsle
EASTVALE	24.0%	2.6%	31.7%	-11.0%	-43.7%	42.4%	**2,006,769**	1,986,431	**1.0%**	Florist/Nursery	Leasing	Electronic Equipment	Heavy Industry
HEMET	-3.3%	7.1%	-9.2%	1.2%	-6.7%	-3.7%	**2,580,137**	2,689,707	**-4.1%**	Bldg.Matls-Whsle	Service Stations	Food Processing Eqp	Heavy Industry
INDIAN WELLS	16.7%	29.3%	0.0%	303.1%	-59.1%	-91.6%	**128,056**	105,432	**21.5%**	Furniture/Appliance	Bldg.Matls-Whsle	Miscellaneous Other	Heavy Industry
INDIO	0.9%	5.7%	2.7%	-19.3%	11.3%	6.1%	**2,376,470**	2,362,535	**0.6%**	Heavy Industry	Food Processing Eqp	Electronic Equipment	Office Equipment
JURUPA VALLEY	1.0%	4.9%	11.7%	15.5%	6.8%	4.2%	**2,753,269**	2,552,602	**7.9%**	I.T. Infrastructure	Biotechnology	Florist/Nursery	Drug Stores
LA QUINTA	-0.3%	11.3%	-1.3%	7.5%	11.0%	-9.1%	**1,609,352**	1,559,981	**3.2%**	Chemical Products	Bldg.Matls-Whsle	Light Industry	Electronic Equipment
LAKE ELSINORE	-5.4%	0.7%	-6.4%	-0.2%	40.4%	-2.8%	**2,109,532**	2,146,476	**-1.7%**	Light Industry	Chemical Products	Green Energy	Misc. Vehicle Sales
MENIFEE	-6.7%	3.9%	19.9%	5.7%	12.0%	157.9%	**1,839,890**	1,750,999	**5.1%**	Miscellaneous Other	Business Services	Food Processing Eqp	Florist/Nursery
MORENO VALLEY	-3.7%	7.7%	9.3%	-0.5%	0.2%	37.8%	**4,344,816**	4,198,817	**3.5%**	Chemical Products	Florist/Nursery	Energy Sales	Drug Stores
MURRIETA	-2.8%	18.5%	-0.1%	-2.7%	16.6%	-41.4%	**3,975,991**	3,876,090	**2.6%**	Leasing	Food Markets	Electronic Equipment	Miscellaneous Other
NORCO	1.4%	7.8%	5.7%	-8.2%	9.6%	105.3%	**1,617,234**	1,542,336	**4.9%**	Miscellaneous Other	Misc. Vehicle Sales	Electronic Equipment	Energy Sales
PALM DESERT	-1.7%	2.9%	67.5%	8.7%	11.5%	-13.4%	**3,436,317**	3,218,214	**6.8%**	Auto Sales - New	Leasing	Drug Stores	Heavy Industry
PALM SPRINGS	1.6%	2.2%	6.3%	10.5%	19.0%	-19.9%	**2,425,165**	2,303,282	**5.3%**	Chemical Products	Energy Sales	Miscellaneous Other	Drug Stores
PERRIS	39.5%	10.4%	7.2%	-19.1%	-19.4%	10.6%	**4,219,494**	3,827,116	**10.3%**	Florist/Nursery	Apparel Stores	Food Processing Eqp	Light Industry
RANCHO MIRAGE	4.1%	4.5%	8.3%	7.0%	21.6%	5.5%	**1,071,792**	991,826	**8.1%**	Leasing	Food Processing Eqp	Heavy Industry	Liquor Stores
RIVERSIDE	-5.8%	4.6%	3.0%	12.6%	4.7%	-1.6%	**14,322,257**	13,953,839	**2.6%**	Electronic Equipment	Food Markets	I.T. Infrastructure	Food Processing Eqp
SAN JACINTO	0.3%	8.6%	16.9%	5.2%	-2.3%	-0.8%	**702,379**	650,573	**8.0%**	Light Industry	Auto Sales - Used	Recreation Products	Drug Stores
TEMECULA	-3.7%	6.8%	-4.6%	21.5%	-6.4%	-32.6%	**8,155,441**	8,288,529	**-1.6%**	I.T. Infrastructure	Biotechnology	Miscellaneous Other	Office Equipment
WILDOMAR	-8.3%	15.8%	23.3%	-11.6%	28.1%	26.3%	**465,223**	399,473	**16.5%**	Miscellaneous Other	Apparel Stores	Auto Sales - Used	Chemical Products

AGENDA ITEM 9B

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Budget and Implementation Committee Matt Wallace, Procurement Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Single Signature Authority Report

BUDGET AND IMPLEMENTATION COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to receive and file the Single Signature Authority report for the third quarter ended March 31, 2019.

BACKGROUND INFORMATION:

Certain contracts are executed under single signature authority as permitted in the Commission's Procurement Policy Manual adopted in June 2018. The Executive Director is authorized to sign services contracts that are less than $150,000 individually and in an aggregate amount not to exceed $1.5 million in any given fiscal year. Additionally, in accordance with Public Utilities Code Section 130323(c), the Executive Director is authorized to sign contracts for supplies, equipment, materials, and construction of all facilities and works under $50,000 individually.

The attached report details all contracts that have been executed for the third quarter ended March 31, 2019, under the single signature authority granted to the Executive Director. The unused capacity of single signature authority for services at March 31, 2019 is $1,226,119.

Attachment: Single Signature Authority Report as of March 31, 2019

SINGLE SIGNATURE AUTHORITY
AS OF March 31, 2019

CONSULTANT	DESCRIPTION OF SERVICES	ORIGINAL CONTRACT AMOUNT	PAID AMOUNT	REMAINING CONTRACT AMOUNT
AMOUNT AVAILABLE July 1, 2018		$1,500,000.00		
NetFile	Form 700 E-filing and administration system	15,000.00	0.00	15,000.00
ECS Imaging, Inc.	Laserfiche document management services	44,794.00	27,588.00	17,206.00
S2 Engineering, Inc.	Construction Management Svcs. - La Sierra Parking Lot Expansion Project	150,000.00	144,069.06	5,930.94
Potter Handy DBA Center for Disability	Settlement agreement	12,000.00	12,000.00	0.00
Macias, Gini, O'Connell	State of Good Repair audited financial statements for FY18 and FY19	7,000.00	0.00	7,000.00
UCR School of Business	Sales tax analysis for two additional revenue scenarios and a modified demographic forecast	16,000.00	0.00	16,000.00
Department of Toxic Substances Control	Provide environmental hazard oversight and assessment for Downtown Riverside station platform expansion project	29,087.00	29,087.00	0.00
AMOUNT USED		273,881.00		
AMOUNT USED		273,881.00		
AMOUNT REMAINING through March 31, 2019		$1,226,119.00		
Agreements that fall under Public Utilities Code 130323 (C)				
None	N/A	$-	$-	$-

Jose Mendoza
Prepared by

Theresia Trevino
Reviewed by

Note: Shaded area represents new contracts listed in the third quarter.

AGENDA ITEM 9C

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Budget and Implementation Committee Jillian Guizado, Legislative Affairs Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	State and Federal Legislative Update

BUDGET AND IMPLEMENTATION COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to:

1) Adopt the following bill position:
   a) AB 456 (Chiu, Bonta, Low) – Oppose; and
2) Receive and file an update on state and federal legislation.

DISCUSSION:

State Update

In September 2016, the Commission adopted an oppose position on AB 626 by Assemblymembers Chiu and Low. AB 626 (2016) was a bill that added a significant degree of complexity to the Public Contract Code relating to claims by contractors and subcontractors on public works contracts. The bill established a claims resolution process for public works contracts entered into on or after January 1, 2017, a process that was supplemental to existing claims processes spelled out in state law. As a result, public agencies have specific deadlines that need to be met to meet when reviewing and formally responding to claims submitted by contractors. This has brought about the potential for public agencies to be subject to additional claims due to the law prescribing a process that allows subcontractors that lack legal standing to bring a claim directly to an agency through the prime contractor. Untimely payment of claims are subjected to a 7 percent interest penalty. AB 626 (2016) included a sunset date of January 1, 2020.

DISCUSSION:

AB 456 (Chiu, Bonta, Low) – Staff Recommended Position: Oppose

This legislative session, the original authors of AB 626 (2016) have introduced AB 456. This bill would remove the sunset date of January 1, 2020, proposing to make the statute permanent. While the Commission has not yet seen an uptick in claims as it expected after the passage of AB 626 (2016), engaging on this bill is likely the last opportunity for the Commission to influence

this policy matter, which is consistent with both the Commission's past actions on legislation that add costs, delays, risk, and complexity to transportation projects and the Commission's adopted 2019 State and Federal Legislative Platform (Platform). The Commission's Platform includes a principle to protect our authority and revenue by opposing legislation that amends procurement law in a manner that increases the Commission's exposure to litigation, costs, decreased private sector competition, conflicts of interest, or deviation from best practices.

Federal Update

The United States Department of Transportation is expected to release a notice of funding opportunity for the Better Utilizing Investments to Leverage Development discretionary (competitive) grant program in mid-April. Staff anticipates having additional information to report on this opportunity at its April 22, 2019 Budget and Implementation Committee Meeting.

Attachment: Legislative Matrix – May 2019

Legislation/ Author	Description	Bill Status	Position	Date of Board Adoption
AB 252 (Daly, Frazier)	Removes the sunset date from the NEPA Reciprocity program.	Passed Transportation Committee; referred to Appropriations Committee and placed on suspense file. (March 20, 2019)	*SUPPORT*	3/13/19
AB 1402 (Petrie-Norris)	Makes substantive changes to the Active Transportation Program administered by the State, allocating 75% of funds to be distributed by large MPOs.	Referred to Committee on Transportation. (March 27, 2019)	*SUPPORT*	4/1/19
SB 152 (Beall)	Makes substantive changes to the Active Transportation Program administered by the State, allocating 75% of funds to be distributed by large MPOs.	Passed Senate Transportation Committee, referred to Senate Appropriations. (April 10, 2019)	*SUPPORT*	4/1/19
AB 626 (Quirk-Silva)	Seeks to dictate that professionals who provide professional services on one phase of a project be deemed not to have a conflict of interest in subsequent project phases, disregarding the Commission's adopted Procurement Policy.	Passed Assembly Elections and Redistricting Committee, referred to Assembly Appropriations Committee. (April 10, 2019)	*OPPOSE UNLESS AMENDED*	4/10/19

AGENDA ITEM 9D

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Western Riverside County Programs and Projects Committee Stephanie Blanco, Capital Projects Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Agreement with HDR Engineering, Inc. for the Completion of Project Approval/Environmental Document for the Interstate 15 Express Lanes Project-Southern Extension

WESTERN RIVERSIDE COUNTY PROGRAMS AND PROJECTS COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to:

1) Award Agreement No. 19-31-025-00 to HDR Engineering, Inc. (HDR) to provide preliminary engineering and environmental analysis services for the Interstate 15 Express Lanes Project - Southern Extension (I-15 ELPSE), in the amount of $26,320,011, plus a contingency amount of $2,632,001, for a total amount not to exceed $28,952,012;
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement on behalf of the Commission; and
3) Authorize the Executive Director, or designee, to approve contingency work as may be required for the Project.

BACKGROUND INFORMATION:

The I-15 ELPSE would add two express lanes in each direction on I-15 from Cajalco Road to State Route 74 (Central Avenue). See Figure 1 below for a project location map. The purpose of the project is to:

- Improve traffic operations and travel times for general purpose lane users;
- Expand travel choices with the addition of express lanes and carpooling;
- Increase travel time reliability for all corridor users; and
- Provide travel time-savings and travel time certainty for express lane users.

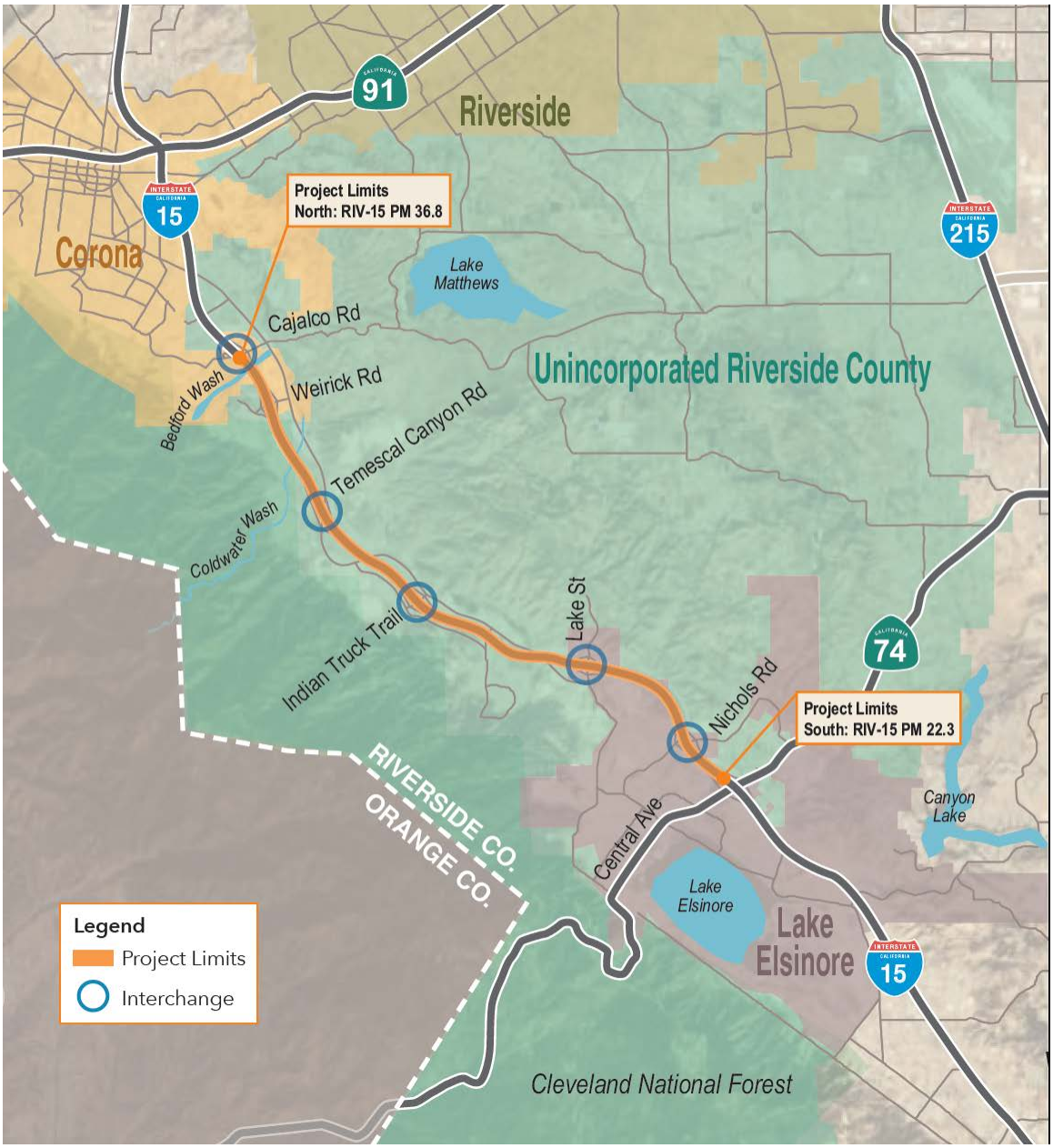


Figure 1: Project Location Map

At its September 2017 meeting, the Commission approved the I-15 ELPSE as one of three project recommendations to the California Transportation Commission (CTC) for the 2018 State Transportation Improvement Program (STIP). In March 2018, the CTC approved $50 million of STIP funding for the project approval/environmental document (PA/ED) development phase of the I-15 ELPSE. However, this STIP funding will not be available for obligation until Fiscal Year 2022/23. Therefore, staff conducted a programming analysis and identified that the PA/ED development phase was eligible for Congestion Mitigation/Air Quality (CMAQ) funds. The PA/ED services will be funded with about $29 million in CMAQ funds.

The I-15 ELPSE environmental document is anticipated to be an environmental impact report/environmental impact statement (EIR/EIS) based on prior studies and overall experience in the I-15 corridor. Formal scoping meetings are expected to start in July 2019. It is expected that the PA/ED phase with an EIR/EIS will be completed in five years with anticipated completion in 2024.

Procurement Process:

Pursuant to Government Code 4525 et seq, the selection of architect, engineer, and related services shall be on the basis of demonstrated competence and on professional qualifications necessary for the satisfactory performance of the services required. Therefore, staff used the qualification method of selection for the procurement of these services. Evaluation criteria included elements such as qualifications of firm, qualifications of personnel, project understanding and approach, and the ability to respond to the requirements set forth under the terms of a request for qualifications (RFQ).

RFQ No. 19-31-025-00 for preliminary engineering and environmental analysis services for the I-15 ELPSE was released on November 7, 2018. A public notice was advertised in the *Press Enterprise*, and the RFQ was posted on the Commission's PlanetBids website, which is accessible through the Commission's website. Through PlanetBids, 100 firms downloaded the RFQ, 16 of these firms are located in Riverside County. A pre-proposal conference was held on November 21, 2018, and attended by 31 firms. Staff responded to all questions submitted by potential proposers prior to the December 20, 2018, clarification deadline date. Five firms – AECOM (Orange); EXP U.S. Services, Inc. (San Bernardino); HDR (Riverside); WKE, Inc. (Santa Ana); and WSP USA Inc. (San Bernardino) – submitted responsive and responsible statements of qualifications (SOQ) prior to the 2:00 p.m. submittal deadline on January 28, 2019. Based on the evaluation criteria set forth in the RFQ, the firms were evaluated and scored by an evaluation committee comprised of Commission, Bechtel, and Caltrans staff.

Based on the evaluation committee's assessment of the written SOQs and pursuant to the terms of the RFQ, the evaluation committee shortlisted and invited four firms (AECOM, HDR, WKE, Inc. and WSP USA Inc.) to the interview phase of the evaluation and selection process. Interviews were conducted on February 21, 2019.

The evaluation committee conducted a subsequent evaluation of each firm, based on both written and interview components presented to the evaluation committee by each proposer. Accordingly, the evaluation committee recommends contract award to HDR to provide preliminary engineering and environmental analysis services for the I-15 ELPSE, as it earned the highest total evaluation score.

Subsequently, staff negotiated the scope (including the appropriate level of effort, labor categories/mix, etc.), cost, and schedule proposal received from HDR for the project services and established a fair and reasonable price. As part of the federal procurement process for architectural and engineering services, HDR and its subconsultants' proposed Indirect Cost

Rates subject to audit by Caltrans' Independent Office of Audits and Investigations (IOAI). The proposed cost is $26,320,011 and may change slightly as a result of the IOAI audit. The proposed cost is expected to be finalized prior to Commission approval in May.

Recommendation

Staff recommends award of Agreement No. 19-31-025-00 to HDR to perform preliminary engineering and environmental analysis services for the I-15 ELPSE, based on the final project scope and cost, in the amount of $26,320,011, plus a contingency amount of $2,632,001, for a total amount not to exceed $28,952,012. The Commission's model professional services agreement will be entered into with HDR, subject to any changes approved by the Executive Director and pursuant to legal counsel review. Further, staff recommends authorization for the Chair or Executive Director to execute the agreement on behalf of the Commission and for the Executive Director or designee to approve contingency work up to the total not to exceed amount as required for the project.

Financial Information					
In Fiscal Year Budget:	Yes Yes N/A	Year:	FY 2018/19 FY 2019/20 FY 2020/21+	Amount:	$ 150,000 $ 6,000,000 $ 22,802,012
Source of Funds:	CMAQ			Budget Adjustment:	No No N/A
GL/Project Accounting No.:	003044 81101 00000 0000 262 31 81101				
Fiscal Procedures Approved:	Theresia Trevino			Date:	04/23/2019

Attachment: Draft Agreement No. 19-31-025-00

Agreement No. 19-31-025-00

PROFESSIONAL SERVICES AGREEMENT
WITH FHWA FUNDING/ASSISTANCE

RIVERSIDE COUNTY TRANSPORTATION COMMISSION
AGREEMENT WITH
HDR ENGINEERING, INC.
FOR
PRELIMINARY ENGINEERING ENVIRONMENTAL ANALYSIS, PUBLIC OUTREACH, AND PROJECT MANAGEMENT SERVICES
FOR THE
INTERSTATE 15 EXPRESS LANES PROJECT – SOUTHERN EXTENSION

Parties and Date.

This Agreement is made and entered into this ___ day of _____, 2019, by and between the RIVERSIDE COUNTY TRANSPORTATION COMMISSION ("the Commission") and HDR ENGINEERING, INC. ("Consultant"), a CORPORATION. The Commission and Consultant are sometimes referred to herein individually as “Party”, and collectively as the “Parties”.

Recitals.

A. On November 8, 1988 the Voters of Riverside County approved Measure A authorizing the collection of a one-half percent (1/2 %) retail transactions and use tax (the “tax”) to fund transportation programs and improvements within the County of Riverside, and adopting the Riverside County Transportation Improvement Plan (the “Plan”).

B. Pursuant to Public Utility Code Sections 240000 et seq., the Commission is authorized to allocate the proceeds of the Tax in furtherance of the Plan.

C. On November 5, 2002, the voters of Riverside County approved an extension of the Measure A tax for an additional thirty (30) years for the continued funding of transportation and improvements within the County of Riverside.

D. A source of funding for payment for professional services provided under this Agreement is federal funds administered by the California Department of Transportation (“Caltrans”) from the United States Department of Transportation pursuant to the following project/program: CMAQ.

E. Consultant desires to perform and assume responsibility for the provision of certain professional services required by the Commission on the terms and conditions set forth in this Agreement. Consultant represents that it is experienced in providing preliminary engineering environmental analysis, public outreach, and project management services to public clients, is licensed in the State of California (if necessary), and is familiar with the plans of the Commission.

F. The Commission desires to engage Consultant to render such services for the Interstate 15 Express Lanes Project – Southern Extension ("Project"), as set forth in this Agreement.

Terms.

1. General Scope of Services. Consultant shall furnish all technical and professional services, including labor, material, equipment, transportation, supervision and expertise, and incidental and customary work necessary to fully and adequately supply the professional preliminary engineering environmental analysis, public outreach, and project management services necessary for the Project ("Services"). The Services are more particularly described in Exhibit "A" attached hereto and incorporated herein by reference. All Services shall be subject to, and performed in accordance with, this Agreement, the exhibits attached hereto and incorporated herein by reference, and all applicable local, state and federal laws, rules and regulations.

2. Commencement of Services.

The Consultant shall commence work upon receipt of a written "Notice to Proceed" or "Limited Notice to Proceed" from Commission.

3. Pre-Award Audit. As a result of the federal funding for this Project, and to the extent Caltrans procedures apply in connection therewith, issuance of a "Notice to Proceed" may be contingent upon completion and approval of a pre-award audit. Any questions raised during the pre-award audit shall be resolved before the Commission will consider approval of this Agreement. The federal aid provided under this Agreement is contingent on meeting all Federal requirements and could be withdrawn, thereby entitling the Commission to terminate this Agreement, if the procedures are not completed. The Consultant's files shall be maintained in a manner to facilitate Federal and State process reviews. In addition, the applicable federal agency, or Caltrans acting in behalf of a federal agency, may require that prior to performance of any work for which Federal reimbursement is requested and provided, that said federal agency or Caltrans must give to Commission an "Authorization to Proceed".

4. Caltrans Audit Procedures. Consultant and subconsultant contracts, including cost proposals and ICR, are subject to audits or reviews such as, but not limited to, a contract audit, an incurred cost audit, an Independent Cost Review (ICR) Audit, or a CPA ICR audit work paper review. If selected for audit or review, this Agreement, Consultant's cost proposal and ICR and related work papers, if applicable, will be

reviewed to verify compliance with 48 CFR, Part 31 and other related laws and regulations. In the instances of a CPA ICR audit work paper review it is Consultant's responsibility to ensure federal, state, or local government officials are allowed full access to the CPA's work papers including making copies as necessary. This Agreement, Consultant's cost proposal, and ICR shall be adjusted by Consultant and approved by the Commission's contract manager to conform to the audit or review recommendations. Consultant agrees that individual terms of costs identified in the audit report shall be incorporated into this Agreement by this reference if directed by Commission at its sole discretion. Refusal by Consultant to incorporate audit or review recommendations, or to ensure that the federal, state or local governments have access to CPA work papers, will be considered a breach of the Agreement terms and cause for termination of this Agreement and disallowance of prior reimbursed costs. Additional audit provisions applicable to this Agreement are set forth in Sections 23 and 24 of this Agreement.

5. Term.

5.1 This Agreement shall go into effect on the date first set forth above, contingent upon approval by Commission, and Consultant shall commence work after notification to proceed by Commission's Contract Administrator. This Agreement shall end on June 30, 2025, unless extended by contract amendment.

5.2 Consultant is advised that any recommendation for Agreement award is not binding on Commission until this Agreement is fully executed and approved by the Commission.

5.3 This Agreement shall remain in effect until the date set forth above, unless earlier terminated as provided herein. Consultant shall complete the Services within the term of this Agreement, and shall meet any other established schedules and deadlines. All applicable indemnification provisions of this Agreement shall remain in effect following the termination of this Agreement.

6. Commission's Contract Administrator. The Commission hereby designates the Commission's Executive Director, or his or her designee, to act as its Contract Administrator for the performance of this Agreement ("Commission's Contract Administrator"). Commission's Contract Administrator shall have the authority to act on behalf of the Commission for all purposes under this Agreement. Commission's Contract Administrator shall also review and give approval, as needed, to the details of Consultant's work as it progresses. Consultant shall not accept direction or orders from any person other than the Commission's Contract Administrator or his or her designee.

7. Consultant's Representative. Consultant hereby designates Mark Hager to act as its Representative for the performance of this Agreement ("Consultant's Representative"). Consultant's Representative shall have full authority to act on behalf of Consultant for all purposes under this Agreement. The Consultant's Representative shall supervise and direct the Services, using his or her professional skill and attention,

and shall be responsible for all means, methods, techniques, sequences and procedures and for the satisfactory coordination of all portions of the Services under this Agreement. Consultant shall work closely and cooperate fully with Commission's Contract Administrator and any other agencies which may have jurisdiction over, or an interest in, the Services. Consultant's Representative shall be available to the Commission staff at all reasonable times. Any substitution in Consultant's Representative shall be approved in writing by Commission's Contract Administrator.

8. Substitution of Key Personnel. Consultant has represented to the Commission that certain key personnel will perform and coordinate the Services under this Agreement. Should one or more of such personnel become unavailable, Consultant may substitute other personnel of at least equal competence upon written approval by the Commission. In the event that the Commission and Consultant cannot agree as to the substitution of the key personnel, the Commission shall be entitled to terminate this Agreement for cause, pursuant to the provisions herein. The key personnel for performance of this Agreement are as follows: Mark Hager, Brooke Bannasch, Jason Pack, Brian Calvert, and Robert Chevez.

9. Standard of Care; Licenses. Consultant represents and maintains that it is skilled in the professional calling necessary to perform all Services, duties and obligations required by this Agreement to fully and adequately complete the Project. Consultant shall perform the Services and duties in conformance to and consistent with the standards generally recognized as being employed by professionals in the same discipline in the State of California. Consultant warrants that all employees and subcontractors shall have sufficient skill and experience to perform the Services assigned to them. Consultant further represents and warrants to the Commission that its employees and subcontractors have all licenses, permits, qualifications and approvals of whatever nature that are legally required to perform the Services, and that such licenses and approvals shall be maintained throughout the term of this Agreement. Consultant shall perform, at its own cost and expense and without reimbursement from the Commission, any services necessary to correct errors or omissions which are caused by the Consultant's failure to comply with the standard of care provided for herein, and shall be fully responsible to the Commission for all damages and other liabilities provided for in the indemnification provisions of this Agreement arising from the Consultant's errors and omissions. Any employee of Consultant or its sub-consultants who is determined by the Commission to be uncooperative, incompetent, a threat to the adequate or timely completion of the Project, a threat to the safety of persons or property, or any employee who fails or refuses to perform the Services in a manner acceptable to the Commission, shall be promptly removed from the Project by the Consultant and shall not be re-employed to perform any of the Services or to work on the Project.

10. Independent Contractor. The Services shall be performed by Consultant or under its supervision. Consultant will determine the means, methods and details of performing the Services subject to the requirements of this Agreement. Commission retains Consultant on an independent contractor basis and not as an employee, agent

or representative of the Commission. Consultant retains the right to perform similar or different services for others during the term of this Agreement. Any additional personnel performing the Services under this Agreement on behalf of Consultant shall at all times be under Consultant's exclusive direction and control. Consultant shall pay all wages, salaries and other amounts due such personnel in connection with their performance of Services and as required by law. Consultant shall be responsible for all reports and obligations respecting such personnel, including but not limited to, social security taxes, income tax withholdings, unemployment insurance, disability insurance, and workers' compensation insurance.

11. Schedule of Services. Consultant shall perform the Services expeditiously, within the term of this Agreement, and in accordance with the Schedule of Services set forth in Exhibit "B" attached hereto and incorporated herein by reference. Consultant represents that it has the professional and technical personnel to perform the Services in conformance with such conditions. In order to facilitate Consultant's conformance with the Schedule, the Commission shall respond to Consultant's submittals in a timely manner. Upon request of Commission's Contract Administrator, Consultant shall provide a more detailed schedule of anticipated performance to meet the Schedule of Services.

11.1 Modification of the Schedule. Consultant shall regularly report to the Commission, through correspondence or progress reports, its progress in providing required Services within the scheduled time periods. Commission shall be promptly informed of all anticipated delays. In the event that Consultant determines that a schedule modification is necessary, Consultant shall promptly submit a revised Schedule of Services for approval by Commission's Contract Administrator.

11.2 Trend Meetings. Consultant shall conduct trend meetings with the Commission's Contract Administrator and other interested parties, as requested by the Commission, on a bi weekly basis or as may be mutually scheduled by the Parties at a standard day and time. These trend meetings will encompass focused and informal discussions concerning scope, schedule, and current progress of Services, relevant cost issues, and future Project objectives. Consultant shall be responsible for the preparation and distribution of meeting agendas to be received by the Commission and other attendees no later than three (3) working days prior to the meeting.

11.3 Progress Reports. As part of its monthly invoice, Consultant shall submit a progress report, in a form determined by the Commission, which will indicate the progress achieved during the previous month in relation to the Schedule of Services. Submission of such progress report by Consultant shall be a condition precedent to receipt of payment from the Commission for each monthly invoice submitted.

12. Delay in Performance.

12.1 Excusable Delays. Should Consultant be delayed or prevented from the timely performance of any act or Services required by the terms of the Agreement by reason of acts of God or of the public enemy, acts or omissions of the Commission or other governmental agencies in either their sovereign or contractual capacities, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes or unusually severe weather, performance of such act shall be excused for the period of such delay.

12.2 Written Notice. If Consultant believes it is entitled to an extension of time due to conditions set forth in subsection 12.1, Consultant shall provide written notice to the Commission within seven (7) working days from the time Consultant knows, or reasonably should have known, that performance of the Services will be delayed due to such conditions. Failure of Consultant to provide such timely notice shall constitute a waiver by Consultant of any right to an excusable delay in time of performance.

12.3 Mutual Agreement. Performance of any Services under this Agreement may be delayed upon mutual agreement of the Parties. Upon such agreement, Consultant's Schedule of Services shall be extended as necessary by the Commission. Consultant shall take all reasonable steps to minimize delay in completion, and additional costs, resulting from any such extension.

13. Preliminary Review of Work. All reports, working papers, and similar work products prepared for submission in the course of providing Services under this Agreement shall be submitted to the Commission's Contract Administrator in draft form, and the Commission may require revisions of such drafts prior to formal submission and approval. In the event plans and designs are to be developed as part of the Project, final detailed plans and designs shall be contingent upon obtaining environmental clearance as may be required in connection with Federal funding. In the event that Commission's Contract Administrator, in his or her sole discretion, determines the formally submitted work product to be not in accordance with the standard of care established under this Agreement, Commission's Contract Administrator may require Consultant to revise and resubmit the work at no cost to the Commission.

14. Appearance at Hearings. If and when required by the Commission, Consultant shall render assistance at public hearings or other meetings related to the Project or necessary to the performance of the Services. However, Consultant shall not be required to, and will not, render any decision, interpretation or recommendation regarding questions of a legal nature or which may be construed as constituting a legal opinion.

15. Opportunity to Cure; Inspection of Work. Commission may provide Consultant an opportunity to cure, at Consultant's expense, all errors and omissions which may be disclosed during Project implementation. Should Consultant fail to make such correction in a timely manner, such correction may be made by the Commission, and the cost thereof charged to Consultant. Consultant shall allow the Commission's

Contract Administrator, Caltrans and FHWA to inspect or review Consultant's work in progress at any reasonable time.

16. Claims Filed by Contractor.

16.1 If claims are filed by the Commission's contractor for the Project ("Contractor") relating to work performed by Consultant's personnel, and additional information or assistance from the Consultant's personnel is required by the Commission in order to evaluate or defend against such claims; Consultant agrees to make reasonable efforts to make its personnel available for consultation with the Commission's construction contract administration and legal staff and for testimony, if necessary, at depositions and at trial or arbitration proceedings.

16.2 Consultant's personnel that the Commission considers essential to assist in defending against Contractor claims will be made available on reasonable notice from the Commission. Consultation or testimony will be reimbursed at the same rates, including travel costs that are being paid for the Consultant's personnel services under this Agreement.

16.3 Services of the Consultant's personnel and other support staff in connection with Contractor claims will be performed pursuant to a written contract amendment, if necessary, extending the termination date of this Agreement in order to finally resolve the claims.

16.4 Nothing contained in this Section shall be construed to in any way limit Consultant's indemnification obligations contained in Section 29. In the case of any conflict between this Section and Section 29, Section 29 shall govern. This Section is not intended to obligate the Commission to reimburse Consultant for time spent by its personnel related to Contractor claims for which Consultant is required to indemnify and defend the Commission pursuant to Section 29 of this Agreement.

17. Final Acceptance. Upon determination by the Commission that Consultant has satisfactorily completed the Services required under this Agreement and within the term herein, the Commission shall give Consultant a written Notice of Final Acceptance. Upon receipt of such notice, Consultant shall incur no further costs hereunder, unless otherwise specified in the Notice of Final Acceptance. Consultant may request issuance of a Notice of Final Acceptance when, in its opinion, it has satisfactorily completed all Services required under the terms of this Agreement. In the event copyrights are permitted under this Agreement, then in connection with Federal funding, it is hereby acknowledged and agreed that the United States Department of Transportation shall have the royalty-free non-exclusive and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use, the work for governmental purposes.

18. Laws and Regulations. Consultant shall keep itself fully informed of and in compliance with all local, state and federal laws, rules and regulations in any manner

affecting the performance of the Project or the Services, including all Cal/OSHA requirements, and shall give all notices required by law. For example, and not by way of limitation, Consultant shall keep itself fully informed of and in compliance with all implementing regulations, design standards, specifications, previous commitments that must be incorporated in the design of the Project, and administrative controls including those of the United States Department of Transportation. Compliance with Federal procedures may include completion of the applicable environmental documents and approved by the United States Department of Transportation. For example, and not by way of limitation, a signed Categorical Exclusion, Finding of No Significant Impact, or published Record of Decision may be required to be approved and/or completed by the United States Department of Transportation. Consultant shall be liable for all violations of such laws and regulations in connection with Services. If the Consultant performs any work knowing it to be contrary to such laws, rules and regulations and without giving written notice to the Commission, Consultant shall be solely responsible for all costs arising therefrom. Consultant shall defend, indemnify and hold Commission, its officials, directors, officers, employees and agents free and harmless, pursuant to the indemnification provisions of this Agreement, from any claim or liability arising out of any failure or alleged failure to comply with such laws, rules or regulations.

19. Fees and Payment.

19.1 The method of payment for this Agreement will be based on actual cost plus a fixed fee. Commission shall reimburse Consultant for actual costs (including labor costs, employee benefits, travel, equipment rental costs, overhead and other direct costs) incurred by Consultant in performance of the Services. Consultant shall not be reimbursed for actual costs that exceed the estimated wage rates, employee benefits, travel, equipment rental, overhead, and other estimated costs set forth in the approved Consultant cost proposal attached hereto as Exhibit "C" and incorporated herein by reference ("Cost Proposal") unless additional reimbursement is provided for by a written amendment. In no event shall Consultant be reimbursed for overhead costs at a rate that exceeds Commission's approved overhead rate set forth in the Cost Proposal. The overhead rates included in the attached Exhibit "C" shall be fixed for the term of the Master Agreement, and shall not be subject to adjustment. In the event that Commission determines that a change to the Services from that specified in the Cost Proposal and this Agreement is required, the contract time or actual costs reimbursable by Commission shall be adjusted by contract amendment to accommodate the changed work. The maximum total cost as specified in Section 19.8 shall not be exceeded, unless authorized by a written amendment.

19.2 In addition to the allowable incurred costs, Commission shall pay Consultant a fixed fee of one million four hundred thirteen thousand and one hundred nineteen dollars [$1,413,119]. The fixed fee is nonadjustable for the term of this Agreement, except in the event of a significant change in the Scope of Services, and such adjustment is made by written amendment.

19.3 Reimbursement for transportation and subsistence costs shall not exceed the rates specified in the approved Cost Proposal. In addition, payments to Consultant for travel and subsistence expenses claimed for reimbursement or applied as local match credit shall not exceed rates authorized to be paid exempt non-represented State employees under current State Department of Personnel Administration (DPA) rules, unless otherwise authorized by Commission. If the rates invoiced are in excess of those authorized DPA rates, and Commission has not otherwise approved said rates, then Consultant is responsible for the cost difference and any overpayments shall be reimbursed to the Commission on demand.

19.4 When milestone cost estimates are included in the approved Cost Proposal, Consultant shall obtain prior written approval for a revised milestone cost estimate from the Contract Administrator before exceeding such cost estimate.

19.5 Progress payments shall be made monthly in arrears based on Services provided and allowable incurred costs. A pro rata portion of Consultant's fixed fee shall be included in the monthly progress payments. If Consultant fails to submit the required deliverable items according to the schedule set forth in the Scope of Services, Commission shall have the right to delay payment or terminate this Agreement in accordance with the provisions of Section 21 Termination.

19.6 No payment shall be made prior to approval of any Services, nor for any Services performed prior to approval of this Agreement.

19.7 Consultant shall be reimbursed, as promptly as fiscal procedures will permit upon receipt by Commission's Contract Administrator of itemized invoices in triplicate. Invoices shall be submitted no later than 45 calendar days after the performance of work for which Consultant is billing. Invoices shall detail the work performed on each milestone and each project as applicable. Invoices shall follow the format stipulated for the approved Cost Proposal and shall reference this Agreement number and project title. Final invoice must contain the final cost and all credits due Commission including any equipment purchased under the Equipment Purchase provisions of this Agreement. The final invoice should be submitted within 60 calendar days after completion of Consultant's work. Invoices shall be mailed to Commission's Contract Administrator at the following address:

Riverside County Transportation Commission
Attention: Accounts Payable
P.O. 12008
Riverside, CA 92502

19.8 The total amount payable by Commission including the fixed fee shall not exceed twenty-six million three hundred twenty thousand and eleven dollars [$26,320,011].

19.9 Salary increases shall be reimbursable if the new salary is within the salary range identified in the approved Cost Proposal and is approved by Commission's Contract Administrator. For personnel subject to prevailing wage rates as described in the California Labor Code, all salary increases, which are the direct result of changes in the prevailing wage rates are reimbursable.

19.10 Consultant shall not be reimbursed for any expenses unless authorized in writing by the Commission's Contract Administrator.

19.11 All subcontracts in excess of $25,000 shall contain the above provisions.

20. Disputes.

20.1 Any dispute, other than audit, concerning a question of fact arising under this Agreement that is not disposed of by mutual agreement of the Parties shall be decided by a committee consisting of RCTC's Contract Administrator and the Director of Capital Projects, who may consider written or verbal information submitted by Consultant.

20.2 Not later than 30 days after completion of all Services under this Agreement, Consultant may request review by the Commission's Executive Director of unresolved claims or disputes, other than audit. The request for review will be submitted in writing.

20.3 Neither the pendency of a dispute, nor its consideration by the committee will excuse Consultant from full and timely performance in accordance with the terms of this Agreement.

21. Termination.

21.1 Commission reserves the right to terminate this Agreement for any or no reason upon thirty (30) calendar days written notice to Consultant with the reasons for termination stated in the notice.

21.2 Commission may terminate this Agreement with Consultant should Consultant fail to perform the covenants herein contained at the time and in the manner herein provided. In the event of such termination, Commission may proceed with the work in any manner deemed proper by Commission. If Commission terminates this Agreement with Consultant, Commission shall pay Consultant the sum due to Consultant under this Agreement for Services completed and accepted prior to termination, unless the cost of completion to Commission exceeds the funds remaining in this Agreement. In such case, the overage shall be deducted from any sum due Consultant under this Agreement and the balance, if any, shall be paid to Consultant upon demand.

21.3 In addition to the above, payment upon termination shall include a prorated amount of profit, if applicable, but no amount shall be paid for anticipated profit on unperformed Services. Consultant shall provide documentation deemed adequate by Commission's Contract Administrator to show the Services actually completed by Consultant prior to the effective date of termination. This Agreement shall terminate on the effective date of the Notice of Termination.

21.4 Discontinuance of Services. Upon receipt of the written Notice of Termination, Consultant shall discontinue all affected Services as directed in the Notice or as otherwise provided herein, and deliver to the Commission all Documents and Data, as defined in this Agreement, as may have been prepared or accumulated by Consultant in performance of the Services, whether completed or in progress.

21.5 Effect of Termination for Cause. In addition to the above, Consultant shall be liable to the Commission for any reasonable additional costs incurred by the Commission to revise work for which the Commission has compensated Consultant under this Agreement, but which the Commission has determined in its sole discretion needs to be revised, in part or whole, to complete the Project because it did not meet the standard of care established herein. Termination of this Agreement for cause may be considered by the Commission in determining whether to enter into future agreements with Consultant.

21.6 Cumulative Remedies. The rights and remedies of the Parties provided in this Section are in addition to any other rights and remedies provided by law or under this Agreement.

21.7 Waivers. Consultant, in executing this Agreement, shall be deemed to have waived any and all claims for damages which may otherwise arise from the Commission's termination of this Agreement, for convenience or cause, as provided in this Section.

21.8 Consultant may not terminate this Agreement except for cause.

22. Cost Principles and Administrative Requirements.

22.1 Consultant agrees that the Contract Cost Principles and Procedures, 48 CFR, Federal Acquisition Regulations System, Chapter 1, Part 31.000 et seq., shall be used to determine the cost allowability of individual items.

22.2 Consultant also agrees to comply with federal procedures in accordance with 2 CFR, Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

22.3 Any costs for which payment has been made to Consultant that are determined by subsequent audit to be unallowable under 2 CFR, Part 200 and 48 CFR,

Federal Acquisition Regulations System, Chapter 1, Part 31.000 et seq., are subject to repayment by Consultant to Commission.

22.4 All subcontracts in excess of $25,000 shall contain the above provisions.

23. Retention of Records/Audit. For the purpose of determining compliance with Public Contract Code 10115, et seq. and Title 21, California Code of Regulations, Chapter 21, Section 2500 et seq., when applicable and other matters connected with the performance of this Agreement pursuant to Government Code 8546.7; Consultant, subconsultants, and Commission shall maintain and make available for inspection all books, documents, papers, accounting records, and other evidence pertaining to the performance of this Agreement, including but not limited to, the costs of administering this Agreement. All parties shall make such materials available at their respective offices at all reasonable times during this Agreement period and for three years from the date of final payment under this Agreement. The state, State Auditor, Commission, FHWA, or any duly authorized representative of the Federal Government shall have access to any books, records, and documents of Consultant and it's certified public accountants (CPA) work papers that are pertinent to this Agreement and indirect cost rates (ICR) for audit, examinations, excerpts, and transactions, and copies thereof shall be furnished if requested. Subcontracts in excess of $25,000 shall contain this provision.

23.1 Accounting System. Consultant and its subcontractors shall establish and maintain an accounting system and records that properly accumulate and segregate expenditures by line item for the Services. The accounting system of Consultant and its subcontractors shall conform to Generally Accepted Accounting Principles (GAAP), enable the determination of incurred costs at interim points of completion, and provide support for reimbursement payment vouchers or invoices.

24. Audit Review Procedures.

24.1 Any dispute concerning a question of fact arising under an interim or post audit of this Agreement that is not disposed of by agreement, shall be reviewed by Commission's Chief Financial Officer.

24.2 Not later than 30 days after issuance of the final audit report, Consultant may request a review by Commission's Chief Financial Officer of unresolved audit issues. The request for review shall be submitted in writing.

24.3 Neither the pendency of a dispute nor its consideration by Commission shall excuse Consultant from full and timely performance, in accordance with the terms of this Agreement.

25. Subcontracting.

25.1 Nothing contained in this Agreement or otherwise, shall create any contractual relation between Commission and any subconsultant(s), and no subcontract shall relieve Consultant of its responsibilities and obligations hereunder. Consultant agrees to be as fully responsible to Commission for the acts and omissions of its subconsultant(s) and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by Consultant. Consultant's obligation to pay its subconsultant(s) is an independent obligation from Commission's obligation to make payments to the Consultant.

25.2 Consultant shall perform the Services with resources available within its own organization and no portion of the Services shall be subcontracted without written authorization by Commission's Contract Administrator, except that, which is expressly identified in the approved Cost Proposal.

25.3 Consultant shall pay its subconsultants within ten (10) calendar days from receipt of each payment made to Consultant by Commission.

25.4 Any subcontract in excess of $25,000 entered into as a result of this Agreement shall contain all the provisions stipulated in this Agreement to be applicable to subconsultants.

25.5 Any substitution of subconsultant(s) must be approved in writing by Commission's Contract Administrator prior to the start of work by the subconsultant(s).

25.6 Exhibit "C" may also set forth the rates at which each subconsultant shall bill the Consultant for Services and that are subject to reimbursement by the Commission to Consultant. Additional Direct Costs, as defined in Exhibit "C" shall be the same for both the Consultant and all subconsultants, unless otherwise identified in Exhibit "C". The subconsultant rate schedules and cost proposals contained herein are for accounting purposes only.

26. Equipment Purchase

26.1 Prior authorization, in writing, by Commission's Contract Administrator shall be required before Consultant enters into any unbudgeted purchase order, or subcontract for supplies, equipment, or Consultant services. Consultant shall provide an evaluation of the necessity or desirability of incurring such costs.

26.2 For purchase of any item, service or consulting work not covered in Consultant's Cost Proposal and exceeding $5,000 prior authorization by Commission's Contract Administrator is required. Three competitive quotations must be submitted with the request for such purchase, or the absence of bidding must be adequately justified.

26.3 Any equipment purchased as a result of this Agreement is subject to the following:

Consultant shall maintain an inventory of all nonexpendable property. Nonexpendable property is defined as having a useful life of at least two years and an acquisition cost of $5,000 or more. If the purchased equipment needs replacement and is sold or traded in, Commission shall receive a proper refund or credit at the conclusion of this Agreement, or if this Agreement is terminated, Consultant may either keep the equipment and credit Commission in an amount equal to its fair market value, or sell such equipment at the best price obtainable at a public or private sale, in accordance with established Commission procedures; and credit Commission in an amount equal to the sales price. If Consultant elects to keep the equipment, fair market value shall be determined at Consultant's expense, on the basis of a competent independent appraisal of such equipment. Appraisals shall be obtained from an appraiser mutually agreeable to Commission and Consultant. If Consultant determines to sell the equipment, the terms and conditions of such sale must be approved in advance by Commission. 2 CFR, Part 200 requires a credit to Federal funds when participating equipment with a fair market value greater than $5,000 is credited to the project.

26.4 All subcontracts in excess $25,000 shall contain the above provisions.

27. Labor Code Requirements.

27.1 Prevailing Wages.

(a) Consultant shall comply with the State of California's General Prevailing Wage Rate requirements in accordance with California Labor Code, Section 1770, and all Federal, State, and local laws and ordinances applicable to the Services.

(b) Any subcontract entered into as a result of this Agreement, if for more than $25,000 for public works construction or more than $15,000 for the alteration, demolition, repair, or maintenance of public works, shall contain all of the provisions of this Section.

(c) When prevailing wages apply to the Services described in the Scope of Services, transportation and subsistence costs shall be reimbursed at the minimum rates set by the Department of Industrial Relations (DIR) as outlined in the applicable Prevailing Wage Determination. See http://www.dir.ca.gov.

(d) Copies of the prevailing rate of per diem wages in effect at commencement of this Agreement are on file at the Commission's offices. Consultant shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to execute the Services available to interested parties upon request, and shall post copies at the Consultant's principal place of business and at the project site. Consultant shall defend, indemnify and hold the Commission, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

27.2 DIR Registration. If the Services are being performed as part of an applicable "public works" or "maintenance" project, then pursuant to Labor Code Sections 1725.5 and 1771.1, the Consultant and all subconsultants must be registered with the Department of Industrial Relations. If applicable, Consultant shall maintain registration for the duration of the Project and require the same of any subconsultants. This Project may also be subject to compliance monitoring and enforcement by the Department of Industrial Relations. It shall be Consultant's sole responsibility to comply with all applicable registration and labor compliance requirements.

27.3 Eight-Hour Law. Pursuant to the provisions of the California Labor Code, eight hours of labor shall constitute a legal day's work, and the time of service of any worker employed on the work shall be limited and restricted to eight hours during any one calendar day, and forty hours in any one calendar week, except when payment for overtime is made at not less than one and one-half the basic rate for all hours worked in excess of eight hours per day ("Eight-Hour Law"), unless Consultant or the Services are not subject to the Eight-Hour Law. Consultant shall forfeit to Commission as a penalty, $50.00 for each worker employed in the execution of this Agreement by him, or by any sub-consultant under him, for each calendar day during which such workman is required or permitted to work more than eight hours in any calendar day and forty hours in any one calendar week without such compensation for overtime violation of the provisions of the California Labor Code, unless Consultant or the Services are not subject to the Eight-Hour Law.

27.4 Employment of Apprentices. This Agreement shall not prevent the employment of properly indentured apprentices in accordance with the California Labor Code, and no employer or labor union shall refuse to accept otherwise qualified employees as indentured apprentices on the work performed hereunder solely on the ground of race, creed, national origin, ancestry, color or sex. Every qualified apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade in which he or she is employed and shall be employed only in the craft or trade to which he or she is registered.

If California Labor Code Section 1777.5 applies to the Services, Consultant and any subcontractor hereunder who employs workers in any apprenticeable craft or trade shall apply to the joint apprenticeship council administering applicable standards for a certificate approving Consultant or any sub-consultant for the employment and training of apprentices. Upon issuance of this certificate, Consultant and any sub-consultant shall employ the number of apprentices provided for therein, as well as contribute to the fund to administer the apprenticeship program in each craft or trade in the area of the work hereunder.

The parties expressly understand that the responsibility for compliance with provisions of this Section and with Sections 1777.5, 1777.6 and 1777.7 of the California Labor Code in regard to all apprenticeable occupations lies with Consultant

28. Ownership of Materials/Confidentiality.

28.1 Documents & Data. This Agreement creates an exclusive and perpetual license for Commission to copy, use, modify, reuse, or sub-license any and all copyrights and designs embodied in plans, specifications, studies, drawings, estimates, materials, data and other documents or works of authorship fixed in any tangible medium of expression, including but not limited to, physical drawings or data magnetically or otherwise recorded on computer diskettes, which are prepared or caused to be prepared by Consultant under this Agreement ("Documents & Data").

Consultant shall require all subcontractors to agree in writing that Commission is granted an exclusive and perpetual license for any Documents & Data the subcontractor prepares under this Agreement.

Consultant represents and warrants that Consultant has the legal right to grant the exclusive and perpetual license for all such Documents & Data. Consultant makes no such representation and warranty in regard to Documents & Data which were prepared by design professionals other than Consultant or provided to Consultant by the Commission.

Commission shall not be limited in any way in its use of the Documents & Data at any time, provided that any such use not within the purposes intended by this Agreement shall be at Commission's sole risk.

28.2 Intellectual Property. In addition, Commission shall have and retain all right, title and interest (including copyright, patent, trade secret and other proprietary rights) in all plans, specifications, studies, drawings, estimates, materials, data, computer programs or software and source code, enhancements, documents, and any and all works of authorship fixed in any tangible medium or expression, including but not limited to, physical drawings or other data magnetically or otherwise recorded on computer media ("Intellectual Property") prepared or developed by or on behalf of Consultant under this Agreement as well as any other such Intellectual Property prepared or developed by or on behalf of Consultant under this Agreement.

The Commission shall have and retain all right, title and interest in Intellectual Property developed or modified under this Agreement whether or not paid for wholly or in part by Commission, whether or not developed in conjunction with Consultant, and whether or not developed by Consultant. Consultant will execute separate written assignments of any and all rights to the above referenced Intellectual Property upon request of Commission.

Consultant shall also be responsible to obtain in writing separate written assignments from any subcontractors or agents of Consultant of any and all right to the above referenced Intellectual Property. Should Consultant, either during or following termination of this Agreement, desire to use any of the above-referenced Intellectual Property, it shall first obtain the written approval of the Commission.

All materials and documents which were developed or prepared by the Consultant for general use prior to the execution of this Agreement and which are not the copyright of any other party or publicly available and any other computer applications, shall continue to be the property of the Consultant. However, unless otherwise identified and stated prior to execution of this Agreement, Consultant represents and warrants that it has the right to grant the exclusive and perpetual license for all such Intellectual Property as provided herein.

Commission further is granted by Consultant a non-exclusive and perpetual license to copy, use, modify or sub-license any and all Intellectual Property otherwise owned by Consultant which is the basis or foundation for any derivative, collective, insurrectional, or supplemental work created under this Agreement.

28.3 Confidentiality. All ideas, memoranda, specifications, plans, procedures, drawings, descriptions, computer program data, input record data, written information, and other Documents and Data either created by or provided to Consultant in connection with the performance of this Agreement shall be held confidential by Consultant. Such materials shall not, without the prior written consent of Commission, be used by Consultant for any purposes other than the performance of the Services. Nor shall such materials be disclosed to any person or entity not connected with the performance of the Services or the Project. Nothing furnished to Consultant which is otherwise known to Consultant or is generally known, or has become known, to the related industry shall be deemed confidential. Consultant shall not use Commission's name or insignia, photographs of the Project, or any publicity pertaining to the Services or the Project in any magazine, trade paper, newspaper, television or radio production or other similar medium without the prior written consent of Commission.

28.4 Infringement Indemnification. Consultant shall defend, indemnify and hold the Commission, its directors, officials, officers, employees, volunteers and agents free and harmless, pursuant to the indemnification provisions of this Agreement, for any alleged infringement of any patent, copyright, trade secret, trade name, trademark, or any other proprietary right of any person or entity in consequence of the use on the Project by Commission of the Documents & Data, including any method, process, product, or concept specified or depicted.

29. Indemnification. To the fullest extent permitted by law, Consultant shall defend (with counsel of Commission's choosing), indemnify and hold Commission, its directors, officials, officers, employees, consultants, volunteers, and agents free and harmless from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage or injury, in law or equity, to property or persons, including wrongful death, in any manner arising out of or incident to alleged negligent acts, omissions, or willful misconduct of Consultant, its officials, officers, employees, agents, consultants, and contractors arising out of or in connection with the performance of the Services, the Project or this Agreement, including without limitation the payment of consequential damages, expert witness fees, and attorneys fees and other related costs and

expenses. Consultant shall defend, at Consultant's own cost, expense and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against Commission, its directors, officials, officers, employees, consultants, agents, or volunteers. Consultant shall pay and satisfy any judgment, award or decree that may be rendered against Commission or its directors, officials, officers, employees, consultants, agents, or volunteers, in any such suit, action or other legal proceeding. Consultant shall reimburse Commission and its directors, officials, officers, employees, consultants, agents, and/or volunteers, for any and all legal expenses and costs, including reasonable attorney's fees, incurred by each of them in connection therewith or in enforcing the indemnity herein provided. Consultant's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by Commission, its directors, officials officers, employees, consultants, agents, or volunteers.

If Consultant's obligation to defend, indemnify, and/or hold harmless arises out of Consultant's performance as a "design professional" (as that term is defined under Civil Code section 2782.8), then, and only to the extent required by Civil Code section 2782.8, which is fully incorporated herein, Consultant's indemnification obligation shall be limited to claims that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the Consultant, and, upon Consultant obtaining a final adjudication by a court of competent jurisdiction, Consultant's liability for such claim, including the cost to defend, shall not exceed the Consultant's proportionate percentage of fault.

Consultant's obligations as set forth in this Section shall survive expiration or termination of this Agreement.

30. Insurance.

30.1 Time for Compliance. Consultant shall not commence work under this Agreement until it has provided evidence satisfactory to the Commission that it has secured all insurance required under this Section, in a form and with insurance companies acceptable to the Commission. In addition, Consultant shall not allow any subcontractor to commence work on any subcontract until it has secured all insurance required under this Section.

30.2 Minimum Requirements. Consultant shall, at its expense, procure and maintain for the duration of the Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Agreement by the Consultant, its agents, representatives, employees or subcontractors. Consultant shall also require all of its subcontractors to procure and maintain the same insurance for the duration of the Agreement. Such insurance shall meet at least the following minimum levels of coverage:

(a) Minimum Scope of Insurance. Coverage shall be at least as broad as the latest version of the following: (1) General Liability: Insurance Services Office

Commercial General Liability coverage (occurrence form CG 0001 or exact equivalent); (2) Automobile Liability: Insurance Services Office Business Auto Coverage (form CA 0001, code 1 (any auto) or exact equivalent); and (3) Workers' Compensation and Employer's Liability: Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

(b) Minimum Limits of Insurance. Consultant shall maintain limits no less than: (1) General Liability: $2,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with general aggregate limit is used, either the general aggregate limit shall apply separately to this Agreement/location or the general aggregate limit shall be twice the required occurrence limit. Limits may be achieved by any combination of primary and excess or umbrella liability insurance; (2) Automobile Liability: $2,000,000 per accident for bodily injury and property damage. Limits may be achieved by any combination of primary and excess or umbrella liability insurance; and (3) Workers' Compensation and Employer's Liability: Workers' Compensation limits as required by the Labor Code of the State of California. Employer's Practices Liability limits of $1,000,000 per accident.

30.3 Professional Liability. Consultant shall procure and maintain, and require its sub-consultants to procure and maintain, for a period of five (5) years following completion of the Project, errors and omissions liability insurance appropriate to their profession. For Consultant, such insurance shall be in an amount not less than $1,000,000 per claim. This insurance shall be endorsed to include contractual liability applicable to this Agreement and shall be written on a policy form coverage specifically designed to protect against acts, errors or omissions of the Consultant. "Covered Professional Services" as designated in the policy must specifically include work performed under this Agreement. The policy must "pay on behalf of" the insured and must include a provision establishing the insurer's duty to defend. Subconsultants of Consultant shall obtain such insurance in an amount not less than $1,000,000 per claim. Notwithstanding the foregoing, the Commission may consider written requests to lower or dispense with the errors and omissions liability insurance requirement contained in this Section for certain subconsultants of Consultant, on a case-by-case basis, depending on the nature and scope of the Services to be provided by the subconsultant. Approval of such request shall be in writing, signed by the Commission's Contract Administrator.

30.4 Aircraft Liability Insurance. Prior to conducting any Services requiring use of aircraft, Consultant shall procure and maintain, or cause to be procured and maintained, aircraft liability insurance or equivalent form, with a single limit as shall be required by the Commission. Such insurance shall include coverage for owned, hired and non-owned aircraft and passengers, and shall name, or be endorsed to name, the Commission, Caltrans and their directors, officials, officers, employees and agents as additional insureds with respect to the Services or operations performed by or on behalf of the Consultant.

30.5 Insurance Endorsements. The insurance policies shall contain the following provisions, or Consultant shall provide endorsements on forms approved by the Commission to add the following provisions to the insurance policies:

(a) General Liability.

(i) Commercial General Liability Insurance must include coverage for (1) bodily Injury and property damage; (2) personal Injury/advertising Injury; (3) premises/operations liability; (4) products/completed operations liability; (5) aggregate limits that apply per Project; (6) explosion, collapse and underground (UCX) exclusion deleted; (7) contractual liability with respect to this Agreement; (8) broad form property damage; and (9) independent consultants coverage.

(ii) The policy shall contain no endorsements or provisions limiting coverage for (1) contractual liability; (2) cross liability exclusion for claims or suits by one insured against another; or (3) contain any other exclusion contrary to this Agreement.

(iii) The policy shall give the Commission, its directors, officials, officers, employees, and agents insured status using ISO endorsement forms 20 10 10 01 and 20 37 10 01, or endorsements providing the exact same coverage.

(iv) The additional insured coverage under the policy shall be "primary and non-contributory" and will not seek contribution from the Commission's or Caltrans' insurance or self-insurance and shall be at least as broad as CG 20 01 04 13, or endorsements providing the exact same coverage.

(b) Automobile Liability. The automobile liability policy shall be endorsed to state that: (1) the Commission, Caltrans and their directors, officials, officers, employees and agents shall be covered as additional insureds with respect to the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Consultant or for which the Consultant is responsible; and (2) the insurance coverage shall be primary insurance as respects the Commission, Caltrans and their directors, officials, officers, employees and agents, or if excess, shall stand in an unbroken chain of coverage excess of the Consultant's scheduled underlying coverage. Any insurance or self-insurance maintained by the Commission, Caltrans and their directors, officials, officers, employees and agents shall be excess of the Consultant's insurance and shall not be called upon to contribute with it in any way.

(c) Workers' Compensation and Employers Liability Coverage.

(i) Consultant certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing work under this Agreement.

(ii) The insurer shall agree to waive all rights of subrogation against the Commission, its directors, officials, officers, employees and agents for losses paid under the terms of the insurance policy which arise from work performed by the Consultant.

(d) All Coverages.

(i) Defense costs shall be payable in addition to the limits set forth hereunder.

(ii) Requirements of specific coverage or limits contained in this Section are not intended as a limitation on coverage, limits, or other requirement, or a waiver of any coverage normally provided by any insurance. It shall be a requirement under this Agreement that any available insurance proceeds broader than or in excess of the specified minimum insurance coverage requirements and/or limits set forth herein shall be available to the Commission, Caltrans and their directors, officials, officers, employees and agents as additional insureds under said policies. Furthermore, the requirements for coverage and limits shall be (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured; whichever is greater.

(iii) The limits of insurance required in this Agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the Commission (if agreed to in a written contract or agreement) before the Commission's own insurance or self-insurance shall be called upon to protect it as a named insured. The umbrella/excess policy shall be provided on a "following form" basis with coverage at least as broad as provided on the underlying policy(ies).

(iv) Consultant shall provide the Commission at least thirty (30) days prior written notice of cancellation of any policy required by this Agreement, except that the Consultant shall provide at least ten (10) days prior written notice of cancellation of any such policy due to non-payment of premium. If any of the required coverage is cancelled or expires during the term of this Agreement, the Consultant shall deliver renewal certificate(s) including the General Liability Additional Insured Endorsement to the Commission at least ten (10) days prior to the effective date of cancellation or expiration.

(v) The retroactive date (if any) of each policy is to be no later than the effective date of this Agreement. Consultant shall maintain such coverage continuously for a period of at least three years after the completion of the work under this Agreement. Consultant shall purchase a one (1) year extended reporting period A) if the retroactive date is advanced past the effective date of this Agreement; B) if the

policy is cancelled or not renewed; or C) if the policy is replaced by another claims-made policy with a retroactive date subsequent to the effective date of this Agreement.

(vi) The foregoing requirements as to the types and limits of insurance coverage to be maintained by Consultant, and any approval of said insurance by the Commission, is not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Consultant pursuant to this Agreement, including but not limited to, the provisions concerning indemnification.

(vii) If at any time during the life of the Agreement, any policy of insurance required under this Agreement does not comply with these specifications or is canceled and not replaced, Commission has the right but not the duty to obtain the insurance it deems necessary and any premium paid by Commission will be promptly reimbursed by Consultant or Commission will withhold amounts sufficient to pay premium from Consultant payments. In the alternative, Commission may cancel this Agreement. The Commission may require the Consultant to provide complete copies of all insurance policies in effect for the duration of the Project.

(viii) Neither the Commission nor any of its directors, officials, officers, employees or agents shall be personally responsible for any liability arising under or by virtue of this Agreement.

Each insurance policy required by this Agreement shall be endorsed to state that:

30.6 Deductibles and Self-Insurance Retentions. Any deductibles or self-insured retentions must be declared to and approved by the Commission. If the Commission does not approve the deductibles or self-insured retentions as presented, Consultant shall guarantee that, at the option of the Commission, either: (1) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Commission, its directors, officials, officers, employees and agents; or, (2) the Consultant shall procure a bond guaranteeing payment of losses and related investigation costs, claims and administrative and defense expenses.

30.7 Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating no less than A:VIII, licensed to do business in California, and satisfactory to the Commission.

30.8 Verification of Coverage. Consultant shall furnish Commission with original certificates of insurance and endorsements effecting coverage required by this Agreement on forms satisfactory to the Commission. The certificates and endorsements for each insurance policy shall be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements must be received and approved by the Commission before work commences. The Commission reserves the right to require complete, certified copies of all required insurance policies, at any time.

30.9 Subconsultant Insurance Requirements. Consultant shall not allow any subcontractors or subconsultants to commence work on any subcontract until they have provided evidence satisfactory to the Commission that they have secured all insurance required under this Section. Policies of commercial general liability insurance provided by such subcontractors or subconsultants shall be endorsed to name the Commission as an additional insured using ISO form CG 20 38 04 13 or an endorsement providing the exact same coverage. If requested by Consultant, the Commission may approve different scopes or minimum limits of insurance for particular subcontractors or subconsultants.

30.10 Other Insurance. At its option, the Commission may require such additional coverage(s), limits and/or the reduction of deductibles or retentions it considers reasonable and prudent based upon risk factors that may directly or indirectly impact the Project. In retaining this option Commission does not warrant Consultant's insurance program to be adequate. Consultant shall have the right to purchase insurance in addition to the insurance required in this Section.

31. Safety. Consultant shall execute and maintain its work so as to avoid injury or damage to any person or property. In carrying out its Services, the Consultant shall at all times be in compliance with all applicable local, state and federal laws, rules and regulations, and shall exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed. Safety precautions as applicable shall include, but shall not be limited to: (A) adequate life protection and life saving equipment and procedures; (B) instructions in accident prevention for all employees and subcontractors, such as safe walkways, scaffolds, fall protection ladders, bridges, gang planks, confined space procedures, trenching and shoring, equipment and other safety devices, equipment and wearing apparel as are necessary or lawfully required to prevent accidents or injuries; and (C) adequate facilities for the proper inspection and maintenance of all safety measures.

As between Consultant and the construction contractors only, the construction contractors shall remain solely responsible for construction safety notwithstanding any safety obligations of Consultant at the jobsite. The foregoing sentence shall not impact nor in any way modify or alter Consultant's indemnity and defense obligations to the Commission, as set forth in Section 29 of this Agreement, not any of Consultant's duties or obligations set forth under this Agreement, including the attached exhibits.

Pursuant to the authority contained in Section 591 of the Vehicle Code, the Commission has determined that the Project will contain areas that are open to public traffic. Consultant shall comply with all of the requirements set forth in Divisions 11, 12, 13, 14, and 15 of the Vehicle Code. Consultant shall take all reasonably necessary precautions for safe operation of its vehicles and the protection of the traveling public from injury and damage from such vehicles.

32. Additional Work. Any work or activities that are in addition to, or otherwise outside of, the Services to be performed pursuant to this Agreement shall only be

performed pursuant to a separate agreement between the parties. Notwithstanding the foregoing, the Commission's Executive Director may make a change to the Agreement, other than a Cardinal Change. For purposes of this Agreement, a Cardinal Change is a change which is "outside the scope" of the Agreement; in other words, work which should not be regarded as having been fairly and reasonably within the contemplation of the parties when the Agreement was entered into. An example of a change which is not a Cardinal Change would be where, in a contract to construct a building there are many changes in the materials used, but the size and layout of the building remains the same. Cardinal Changes are not within the authority of this provision to order, and shall be processed by the Commission as "sole source" procurements according to applicable law, including the requirements of FTA Circular 4220.1D, paragraph 9(f).

(a) In addition to the changes authorized above, a modification which is signed by Consultant and the Commission's Executive Director, other than a Cardinal Change, may be made in order to: (1) make a negotiated equitable adjustment to the Agreement price, delivery schedule and other terms resulting from the issuance of a Change Order, (2) reflect definitive letter contracts, and (3) reflect other agreements of the parties modifying the terms of this Agreement ("Bilateral Contract Modification").

(b) Consultant shall not perform, nor be compensated for any change, without written authorization from the Commission's Executive Director as set forth herein. In the event such a change authorization is not issued and signed by the Commission's Executive Director, Consultant shall not provide such change.

33. Prohibited Interests.

33.1 Solicitation. Consultant maintains and warrants that it has not employed nor retained any company or person, other than a bona fide employee working solely for Consultant, to solicit or secure this Agreement. Further, Consultant warrants that it has not paid nor has it agreed to pay any company or person, other than a bona fide employee working solely for Consultant, any fee, commission, percentage, brokerage fee, gift or other consideration contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the Commission shall have the right to rescind this Agreement without liability.

33.2 Consultant Conflict of Interest (Construction Management/ Administration).

(a) Consultant shall disclose any financial, business, or other relationship with Commission that may have an impact upon the outcome of this Agreement, or any ensuing Commission construction project. Consultant shall also list current clients who may have a financial interest in the outcome of this Agreement, or any ensuing Commission construction project, which will follow.

(b) Consultant hereby certifies that it does not now have, nor shall it acquire any financial or business interest that would conflict with the performance of Services under this Agreement.

(c) Any subcontract in excess of $25,000 entered into as a result of this Agreement, shall contain all of the provisions of this Article.

(d) Consultant hereby certifies that neither Consultant, nor any firm affiliated with Consultant will bid on any construction contract, or on any contract to provide construction inspection for any construction project resulting from this Agreement. An affiliated firm is one, which is subject to the control of the same persons through joint-ownership, or otherwise.

(e) Except for subconsultants whose services are limited to providing surveying or materials testing information, no subconsultant who has provided design services in connection with this Agreement shall be eligible to bid on any construction contract, or on any contract to provide construction inspection for any construction project resulting from this Agreement.

33.3 Commission Conflict of Interest. For the term of this Agreement, no member, officer or employee of the Commission, during the term of his or her service with the Commission, shall have any direct interest in this Agreement, or obtain any present or anticipated material benefit arising therefrom.

33.4 Conflict of Employment. Employment by the Consultant of personnel currently on the payroll of the Commission shall not be permitted in the performance of this Agreement, even though such employment may occur outside of the employee's regular working hours or on weekends, holidays or vacation time. Further, the employment by the Consultant of personnel who have been on the Commission payroll within one year prior to the date of execution of this Agreement, where this employment is caused by and or dependent upon the Consultant securing this or related Agreements with the Commission, is prohibited.

33.5 Covenant Against Contingent Fees. As required in connection with federal funding, the Consultant warrants that he/she has not employed or retained any company or person, other than a bona fide employee working for the Consultant, to solicit or secure this Agreement, and that he/she has not paid or agreed to pay any company or person, other than a bona fide employee, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or formation of this Agreement. For breach or violation of this warranty, the Commission shall have the right to terminate this Agreement without liability pursuant to the terms herein, or at its discretion to deduct from the Agreement price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

33.6 Rebates, Kickbacks or Other Unlawful Consideration. Consultant warrants that this Agreement was not obtained or secured through rebates kickbacks or other unlawful consideration, either promised or paid to any Commission employee. For breach or violation of this warranty, Commission shall have the right in its discretion; to

terminate this Agreement without liability; to pay only for the value of the work actually performed; or to deduct from the contract price; or otherwise recover the full amount of such rebate, kickback or other unlawful consideration.

33.7 Covenant Against Expenditure of Commission, State or Federal Funds for Lobbying. The Consultant certifies that to the best of his/ her knowledge and belief no state, federal or local agency appropriated funds have been paid, or will be paid by or on behalf of the Consultant to any person for the purpose of influencing or attempting to influence an officer or employee of any state or federal agency; a Member of the State Legislature or United States Congress; an officer or employee of the Legislature or Congress; or any employee of a Member of the Legislature or Congress, in connection with the award of any state or federal contract, grant, loan, or cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any state or federal contract, grant, loan, or cooperative agreement.

(a) If any funds other than federal appropriated funds have been paid, or will be paid to any person for the purpose of influencing or attempting to influence an officer or employee of any federal agency; a Member of Congress; an officer or employee of Congress, or an employee of a Member of Congress; in connection with this Agreement, the Consultant shall complete and submit the attached Exhibit "F", Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with the attached instructions.

(b) The Consultant's certification provided in this Section is a material representation of fact upon which reliance was placed when this Agreement was entered into, and is a prerequisite for entering into this Agreement pursuant to Section 1352, Title 31, US. Code. Failure to comply with the restrictions on expenditures, or the disclosure and certification requirements set forth in Section 1352, Title 31, US. Code may result in a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

(c) The Consultant also agrees by signing this Agreement that he/she shall require that the language set forth in this Section be included in all Consultant subcontracts which exceed $100,000, and that all such subcontractors shall certify and disclose accordingly.

33.8 Employment Adverse to the Commission. Consultant shall notify the Commission, and shall obtain the Commission's written consent, prior to accepting work to assist with or participate in a third-party lawsuit or other legal or administrative proceeding against the Commission during the term of this Agreement.

34. Equal Opportunity Employment. Consultant represents that it is an equal opportunity employer and it shall not discriminate against any subcontractor, employee or applicant for employment because of race, religion, color, national origin, ancestry, sex or age. Such non-discrimination shall include, but not be limited to, all activities

related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination.

35. Right to Employ Other Consultants. Commission reserves the right to employ other consultants in connection with the Project.

36. Governing Law. This Agreement shall be governed by and construed with the laws of the State of California. Venue shall be in Riverside County.

37. Disputes; Attorneys' Fees.

37.1 Prior to commencing any action hereunder, the Parties shall attempt in good faith to resolve any dispute arising between them. The pendency of a dispute shall not excuse Consultant from full and timely performance of the Services.

37.2. If the Parties are unable to resolve a dispute after attempting in good faith to do so, the Parties may seek any other available remedy to resolve the dispute. If either Party commences an action against the other Party, either legal, administrative or otherwise, arising out of or in connection with this Agreement, the prevailing Party in such litigation shall be entitled to have and recover from the losing Party reasonable attorneys' fees and, all other costs of such actions.

38. Time of Essence. Time is of the essence for each and every provision of this Agreement.

39. Headings. Article and Section Headings, paragraph captions or marginal headings contained in this Agreement are for convenience only and shall have no effect in the construction or interpretation of any provision herein.

39.1 Notices. All notices permitted or required under this Agreement shall be given to the respective parties at the following address, or at such other address as the respective parties may provide in writing for this purpose:

CONSULTANT:	COMMISSION:
HDR ENGINERING	Riverside County Transportation Commission
2280 Market Street, Suite 100	4080 Lemon Street, 3rd Floor
Riverside, CA 92501	Riverside, CA 92501
ATTN: Kip Field	Attn: Executive Director

Such notice shall be deemed made when personally delivered or when mailed, forty-eight (48) hours after deposit in the U.S. mail, first class postage prepaid, and addressed to the Party at its applicable address. Actual notice shall be deemed adequate notice on the date actual notice occurred, regardless of the method of service.

40. Conflicting Provisions. In the event that provisions of any attached exhibits conflict in any way with the provisions set forth in this Agreement, the language, terms and conditions contained in this Agreement shall control the actions and obligations of the Parties and the interpretation of the Parties' understanding concerning the performance of the Services.

41. Amendment or Modification. No supplement, modification, or amendment of this Agreement shall be binding unless executed in writing and signed by both Parties.

42. Entire Agreement. This Agreement contains the entire agreement of the Parties relating to the subject matter hereof and supersedes all prior negotiations, agreements or understandings.

43. Invalidity; Severability. If any portion of this Agreement is declared invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions shall continue in full force and effect.

44. Provisions Applicable When Federal Department of Transportation Funds Are Involved. When funding for the Services provided by this Agreement are provided, in whole or in part, from the United States Department of Transportation, Consultant shall also fully and adequately comply with the provisions included in Exhibit "D" (Federal Department of Transportation Requirements and California Department of Transportation (Caltrans) DBE program requirements) attached hereto and incorporated herein by reference.

45. Survival. All rights and obligations hereunder that by their nature are to continue after any expiration or termination of this Agreement, including, but not limited to, the indemnification and confidentiality obligations, shall survive any such expiration or termination.

46. No Third Party Beneficiaries. There are no intended third party beneficiaries of any right or obligation assumed by the Parties.

47. Labor Certification. By its signature hereunder, Consultant certifies that it is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and agrees to comply with such provisions before commencing the performance of the Services.

48. Counterparts. This Agreement may be signed in counterparts, each of which shall constitute an original.

49. Subpoenas or Court Orders. Should Consultant receive a subpoena or court order related to this Agreement, the Services or the Project, Consultant shall immediately provide written notice of the subpoena or court order to the Commission. Consultant shall not respond to any such subpoena or court order until notice to the

Commission is provided as required herein, and shall cooperate with the Commission in responding to the subpoena or court order.

50. Assignment or Transfer. Consultant shall not assign, hypothecate, or transfer, either directly or by operation of law, this Agreement or any interest herein, without the prior written consent of the Commission. Any attempt to do so shall be null and void, and any assignees, hypothecates or transferees shall acquire no right or interest by reason of such attempted assignment, hypothecation or transfer.

51. Successors and Assigns. This Agreement shall be binding on the successors and assigns of the parties, and shall not be assigned by Consultant without the prior written consent of Commission.

52. Incorporation of Recitals. The recitals set forth above are true and correct and are incorporated into this Agreement as though fully set forth herein.

53. No Waiver. Failure of Commission to insist on any one occasion upon strict compliance with any of the terms, covenants or conditions hereof shall not be deemed a waiver of such term, covenant or condition, nor shall any waiver or relinquishment of any rights or powers hereunder at any one time or more times be deemed a waiver or relinquishment of such other right or power at any other time or times.

[Signatures on following page]

SIGNATURE PAGE
TO
PROFESSIONAL SERVICES AGREEMENT
WITH FHWA FUNDING/ASSISTANCE

IN WITNESS WHEREOF, this Agreement was executed on the date first written above.

RIVERSIDE COUNTY TRANSPORTATION COMMISSION By: _____ Anne Mayer Executive Director *Approved as to Form:* By: _____ Best, Best & Krieger LLP General Counsel	CONSULTANT By: _____ Signature _____ Name _____ Title ATTEST: By: _____ Its: _____

* A corporation requires the signatures of two corporate officers.

One signature shall be that of the chairman of board, the president or any vice president and the second signature (on the attest line) shall be that of the secretary, any assistant secretary, the chief financial officer or any assistant treasurer of such corporation.

If the above persons are not the intended signators, evidence of signature authority shall be provided to RCTC.

EXHIBIT “A”

SCOPE OF SERVICES

[attached behind this page]

April 11, 2019

I-15 EXPRESS LANES PROJECT SOUTHERN EXTENSION PROJECT
DRAFT SCOPE OF WORK TASKS

This document describes the scope of work of the preliminary engineering and environmental services for the development of a Project Report (PR) and Environmental Document (ED) for the Interstate 15 (I-15) Express Lanes Project Southern Extension (ELPSE). This project will address the existing and future capacity needs of the corridor. The project limits extend from SR-74 (Central Avenue) IC in Lake Elsinore to Cajalco Road IC in Corona. The PR and ED will be prepared based on the Caltrans approved Project Study Report (PSR), October 2007, the supplemental PSR, and the scope of services as outlined in the Riverside County Transportation Commission (RCTC) *Request for Proposal for Preliminary Engineering & Environmental Services for the I-15 ELPSE,* dated November 7, 2018. The project will study two Build Alternatives and the No Build Alternative. The Build Alternatives include the addition of high-occupancy vehicle (HOV) / Express Lane (EL) lanes with no mixed flow lane additions. All work will be performed using US Customary (English) units of measure.

The level of effort is based on (1) preparation of an Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) with an option to down scope to an EIR/EA or IS/EA if acceptable based on impacts and Caltrans concurrence, (2) a schedule of up to 60 months per the RFQ to complete PA/ED, (3) evaluation of two build alternatives and the No Build condition, and (4) the project will not be processed pursuant to the National Environmental Policy Act (NEPA)/404 Integration Memorandum of Understanding (MOU) (2006). In the event the project schedule extends beyond the anticipated 60 months, scope and budget will be discussed with RCTC to determine the next course of action. Environmental documentation will be prepared pursuant to the most current laws, regulations, policies, reference materials/guidelines available or known of at the time the work is undertaken. In addition, environmental analysis procedures will be followed pursuant to the most current information available within the Caltrans Standards.

The following assumptions have been made with regard to the proposed project. Where appropriate, assumptions have been included under the appropriate technical studies.

General Assumptions:

- Proposed project lane improvements are expected to extend along I-15 from SR-74(Central Avenue) to Cajalco Road.
- The proposed project will address two build alternatives as defined in the Riverside County Transportation Commission (RCTC):
    - No Build – Alternative 1 will not construct any improvements on the corridor.
    - Build Alternative – Alternative 2 is described by Caltrans Project Study Report (PSR) for the I-15 Corridor from the San Bernardino County Line to I-215, October, 2007 and was followed by a Supplemental PSR in 2017 by RCTC. This alternative consists of adding one HOV lane in each direction now from SR-74 to Cajalco Road IC.

- Build Alternative – Alternative 3 is the addition of two Express Lanes (EL) in each direction from SR-74 to Cajalco Road IC and supporting toll facilities (i.e. signage / access points with related toll gantries / enforcement / maintenance).

- The proposed improvements of I-15 ELPSE and I-15 COP (if authorized under NTP #2) overlap just north of the Weirick Road IC. To provide consistency, primary Express Lane tasks have been assigned to the ELPSE for consistency in a final condition and recommendations of EL access points.
- If authorized, the I-15 COP will evaluate operational benefits on I-15 between Weirick Road IC to as far north as Magnolia Avenue IC. Emphasis will be on the extension of the NB EL ingress beyond Bedford Wash with a potential auxiliary lane in the SB direction of travel to join the recently constructed Cajcalco Road IC auxiliary lane.
- The I-15 COP will utilize a CE/CE and follows the same deliverables outline in this scope that are necessary to support this level of document. The Pavement Survey task is the only additional item in this scope specifically conducted to support the COP.
- It is assumed that issues related to logical termini for ELPSE will be coordinated with the California Department of Transportation (Caltrans) and RCTC. It is expected this would likely occur at SR-74 and Cajalco Road (CETAP West) but will be validated with the PDT early in PA/ED.
- The NEPA document will be an EIS and the California Environmental Quality Act (CEQA) document will be an EIR for the ELPSE.
- Caltrans will be the lead agency for NEPA and CEQA. RCTC will be a NEPA and CEQA responsible agency.
- It is assumed that Caltrans District 8 is the review and final approval agency and that the Federal Highway Administration (FHWA) will NOT be involved in the review or approval of any of the environmental documentation, with the exception of air quality conformity. The District 8 staff involved in the approval process herein will be called the NEPA Assignment.
- NEPA/404 integration process will not be required.
- A MAR is not deemed necessary since changes to ramps are not planned under the Project.

Technical Assumptions

- Focused protocol surveys for any species are not included in this scope and cost, other than those specified under the Natural Environment Study (NES) scope. If focused surveys are identified during the biological field reconnaissance, then this will be communicated to RCTC and Caltrans and a scope and cost for this work will be provided.
- No Section 7 or Section 10 consultation or California Endangered Species Act Section 2081 or 2080.1 consultation will be required, other than the consistency determination and Determination of Biologically Equivalent or Superior Preservation (DBESP) required under the MSHCP.
- Permit applications and processing (Section 401 Water Quality Certification, Section 404 permit, and Section 1602 Streambed Alternation Agreement) are not included in this scope of work because permits would be obtained during the final design. Initial coordination efforts with appropriate resource agencies on permits are included as part of this environmental document preparation process.
- A Visual Impact Assessment (VIA) for the corridor (SR-74 IC to Cajalco Road IC) will be prepared per current Caltrans and FHWA guidelines.

- The VIA will be a stand-alone document and will be used as a technical appendix to the project EIR/EIS.
- Only two project build alternatives will be evaluated during the assessment.
- There will not be a flyover or drop ramp network system at the various OC/UC/interchanges included in this scope.
- Aerial photography (georeferenced with existing topography) at a scale suitable for preparation of project mapping, figures, and analysis will be provided (1 inch = 50 feet scale minimum, with an outside range of 2,000 feet to the east and west of I-15 shown and any other areas of improvement). Pixel size shall be no more than 0.25 foot and the image shall be orthorectified. New aerial photography and mapping will be provided by this team for the I-15 ELPSE from RR Canyon Road IC to Hidden Valley Parkway IC to more than cover the planned improvements for connectivity to the I-15 and SR-91 Express Lane Networks.
- A master landscape plan is not included in the scope and cost, however, a project landscape palette will be provided for the corridor based on previous work associated with I-15 ELP along with general rules for planting placement. A California Registered Landscape Architect (RLA) will review and approve the VIA, per FHWA guidelines.
- We will coordinate with adjacent projects – I-15 ELP, Cajalco Road IC, SR-74 IC (Central Avenue), and miscellaneous interchange projects along I-15 that may arise with the Corona, Lake Elsinore, Caltrans, RCTC, or RCTD.
- For the purposes of this scope of work, it is assumed that the current RIVTAM (2016 update with 2012 base year and 2040 future year) traffic model will be used for the project.

Only those tasks specifically identified in this scope and cost are assumed to be included. No other effort or tasks are assumed or implied. The California Department of Transportation (Caltrans) Work Breakdown Structure Release 11.1 (WBS) is the basis for the project tasks outlined in this scope of work.

100 PROJECT MANAGEMENT

100.10 Project Management – PA/ED Component

This task includes the management of the PA/ED component, from initiation through completion. The services provided include the initiation, planning, execution, control, and closeout of the PA/ED component.

We will provide overall project management, coordination, and supervision of project staff and subconsultants to facilitate the performance of the work in accordance with the scope and requirements of RCTC. In meetings with Caltrans and other local agencies, we would act as agents of RCTC, communicating the needs and intentions of RCTC to the other agencies. This strategy of project management depends on clear and frequent communication with RCTC, which we will accomplish through the following tasks.

100.10.05 PA/ED Component Initiation and Planning

The Project Management Plan will be created under this activity. The specific elements of the Project Management Plan are listed below:

Create work plan for the PA/ED component which includes the projects scope, cost, and schedule elements.

Create Quality Management Plan for the PA/ED component.

Create Communication Management Plan for the PA/ED component.

Create Risk Management Plan for the PA/ED component.

Deliverable: Project Management Plan

100.10.10 Project Management PA/ED Execution and Control

We will provide overall project management, coordination, and supervision of our project staff and subconsultants to complete the scope of the work in accordance with the contract and requirements of RCTC. We will assimilate the project goals and perspective of our client into our Management Plan and act on their behalf to attain their goals. In meetings with Caltrans and other local agencies, we would act as agents of RCTC communicating the needs and intentions of RCTC to the other agencies. We will have clear and frequent communication with RCTC which we will accomplish through face-to-face meetings, telephone consultations, e-mail and written progress reports. The objective is to develop and establish all of the management tools and documents to implement RCTC's goals and the contract scope. This will be implemented through preparation of a Project Management Plan and the following subtasks.

100.10.10.1 Project Scheduling

Prepare a *Microsoft Project* schedule that will be updated on a monthly basis.

Deliverables: Project Schedule

100.10.10.2 Project Guide/Communications Plan/Risk Management Plan/Project Fact Sheet

We will develop project management tools as documented in the Project Management Plan at the project's onset. This includes a Project Charter, Communications Plan, Risk Management Plan, and update the existing I-15 Project Fact Sheet with review of information occurring semi-annually.

Public Communications Plan will be developed in close coordination with RCTC project manager and will serve as a guide for all public outreach activities. This plan will also be used to bridge the gap between the technical issues and the public and elected officials to build and maintain consensus among all stakeholders.

1. Organize and attend three (3) scoping meetings or public workshops as required by the selected environmental document to obtain input and feedback for preparation of roadway improvement alternatives within the project area. We are proposing two workshops – one for the southern portion of the project, near Lake Elsinore, and one for the north portion of the project, near Corona. The third set of meetings/workshops will occur with regularly reoccurring meetings RCTC holds with Temecula Valley residents. These workshops will assist RCTC and the project team to better understand the public concerns and will provide the team with an opportunity to address these concerns as the project moves forward.
2. Identify stakeholders, using the existing MIS database and the SR-91 CIP, I-15 ELP and any RCTC stakeholder data to develop a comprehensive list of project stakeholders. Additionally, the PDT will determine any additional stakeholders and community / focus groups that are affected by the project.

3. Develop clear and thematic presentations, tailored with specific messages, and provide them on an ongoing basis to appropriate individuals and organizations. The intent of these presentations is to educate the public and bring out major issues early in the process so that the project team can address these challenges in a timely manner. These presentations will be available in English with translation to Spanish if required.
4. Collateral materials – prepare brochures, text materials, agendas, boards, and PowerPoint presentations to support public meetings, public hearing, and stakeholder meetings. Handout materials can be made available in both English and Spanish.
5. Create electronic media that can be uploaded to RCTC's I-15 ELPSE project web site.
6. Administer two (2) public hearings, which will be set up as part of circulation of the Draft Environmental Document. A third meeting with the Temecula Valley residents may be added if deemed necessary by RCTC. This would occur at a regularly reoccurring meeting already being held by RCTC if within the public review period for the ELPSE.

Risk Management Plan will enable the project team to identify, analyze and manage risks as they arise and change through the life of a project. It allows potential obstacles to successful project delivery to be identified and dealt with early, thereby minimizing their impact on project cost, scope, schedule, and quality. Appropriately managing risks will help the Department meet its project delivery commitments and provide project stakeholders better information on which to make project decisions.

The Risk Management Plan will include risk identification, analysis, an appropriate risk response strategy, monitoring, and control. The Risk Management Plan will be initially developed at the beginning of the project. Since risks change and emerge as the project progresses, the Risk Management Plan will be continually managed and re-evaluated throughout the project development process. At a minimum, the plan shall be re-assessed at major project milestones.

Project Fact Sheet will be reviewed semi-annually with RCTC and updated if deemed necessary for stakeholders and will be posted on the project website. It will include periodic updates to the background, project purpose, project description/scope statement, location map, major milestone delivery dates, estimated cost and project contacts.

Deliverables: Public Communications Plan, Risk Management Plan, and a Project Fact Sheet.

100.10.10.3 Monthly Progress Reports/Invoices

We will prepare a Progress Report and Invoice on a monthly basis which will reflect progress through the previous month. The Progress Report will include spreadsheets showing hours expended by roll-up tasks activities undertaken during the previous month. The progress report will summarize work completed during this period, upcoming work, and any issues to address that affect scope, schedule, progress, or risks related to PA/ED.

Deliverables: Monthly Progress Reports/Invoices.

100.10.10.4 Monthly PDT Meetings (60)

We will hold monthly PDT meetings for the project duration, with an anticipated total of sixty (60) meetings. RCTC, Caltrans, and relevant stakeholders (as determined by RCTC and Caltrans) will be invited. The purpose of the PDT meetings will be to discuss project status, convey information, receive data, discuss issues, coordinate with affected agencies, submit deliverables, receive comments, and discuss tasks to be worked on in the next 30-60 days.

100.10.10.4.1 PDT Agenda and Meeting Minutes

We will prepare an agenda for each meeting to be distributed no less than 72 hours before the meeting. We will also prepare meeting minutes that will be sent to RCTC for review and approval no more than five (5) working days after the meeting. The agenda will include the look ahead schedule.

Deliverables: PDT Meeting Agendas and Minutes

100.10.10.5 Bi-Monthly "Trend" Meetings (120)

Progress meetings will be held with RCTC, monthly with an anticipated total of one-hundred-twenty (120) Trend meetings. The purpose of Trend meetings will be to provide an opportunity to discuss coordination activities with project participants in addition to status of the work and issues to be resolved. We will also refine the agenda for the monthly PDT meetings. In addition, our subconsultants' representative shall attend these meetings as requested. It is anticipated that one-hundred (100) meetings will be attended by key subconsultants (Environmental / Public Information).

100.10.10.5.1 Trend Meeting Agenda and Meeting Minutes

We will prepare an agenda for each meeting to be distributed no less than 72 hours before the meetings. We will also prepare meeting minutes that will be sent to RCTC for review and approval no more than five (5) working days after the meeting.

Deliverables: Trend meeting agendas and minutes

100.10.10.6 Quality Assurance (QA) Program

We will prepare and maintain a quality assurance plan that will be in effect during performance of the services under this Agreement. The quality assurance program will address reports, plans, studies, estimates, and other formal deliverables and documents submitted under the Agreement.

Deliverables: Quality Assurance Plan

100.10.10.8 Design, Create, and Administer a Public Outreach Web Page

The RCTC web page will be used as a link for electronic media for the project, www.rctc.org – Projects and Planning. The proposal hours reflect the development of an information-based collateral for posting on the RCTC web and will leverage "push" email notification of public hearings and workshops. The web page will be updated with data provided to RCTC periodically to reflect the current Project information.

Deliverables: Periodic Electronic Media Updates for use on the RCTC Project Web Page

100.10.10.9 Electronic Document Control (ProjectWise)

We will use ProjectWise for document control to promote real-time collaboration and information sharing in a secure project file storage environment. The site will be password protected with firewalls to preserve security and project team members will have access via a standard web browser and Internet connection. RCTC and select team members will have access to review and share reports, drawings, exhibits, and other electronic files.

Deliverables: ProjectWise – file storage database

100.10.15 Project Management PA/ED Close-Out

We will perform the activities to close out the project and provide hard copy reports for RCTC to retain. It is assumed that these activities would be limited to final project documentation preservation activities related to PA/ED. They include archiving report and technical study files from the team, memos, letters, other key agency correspondence and deliverables in chronological order.

Deliverables: PA/ED Close-Out Checklist

160 PERFORM PRELIMINARY ENGINEERING STUDIES AND DRAFT PROJECT REPORT

160.05 Update Project Information

This activity includes review of the information assembled and developed during the previous phases of work, as well as a preliminary assessment of what additional information may be required during the project report and environmental document development.

We will collect and review existing data from sources including Caltrans Districts 8 and Headquarters; RCTC; Cities of Corona, Lake Elsinore, and Riverside County; and water resource agencies. These data will include geotechnical information, survey monuments, traffic data, as-builts, and other studies and reports applicable to the corridor.

In addition, we will review the available reports, studies, and plans along I-15 and its connection with SR-91. The purpose of this review will be to determine the locations for tolling points and advance signing, as well as to become familiar with any issues or concerns.

Field reviews will be performed by the Lead Team as it pertains to each specialty disciplines.

160.05.99 Lessons Learned – Alternative Cross Section Workshop

We will conduct one workshop for one (1) day to discuss roadway cross section alternatives to be further developed and studied. The scope of the work shall include the following:

- Provide Alternative Cross Section Workshop memo to document the findings and recommendations.
- Provide the following technical team members for the following disciplines to coordinate with RCTC staff including I-15 ELP and SR-91 CIP Team Members:
  - Highway design
  - Traffic forecasts
  - Traffic operations
  - Toll facility design
  - Structural design
  - Pavement design
  - Drainage / Water Quality design
  - Environmental planning
  - Public Outreach

Deliverables: Alternative Cross Section Workshop Memo

160.10 Engineering Studies

This activity includes developing in more detail or updating those studies initiated during the PID. It also includes additional engineering studies required during the PA/ED phase of the project. These studies are described below.

160.10.10 Traffic Forecasts/Modeling

Traffic forecasts will be prepared through the application of the SCAG, RIVTAM, or RIVCOM Transportation Analysis Model. To provide a level of consistency between the forecasts for the SR-91 corridor and the I-15 corridor, final, post-processed traffic volumes from 2019 traffic counts will occur for this segment of I-15 and the interchanges between Hidden Valley Parkway and Main Street (Lake Elsinore) will be obtained through traffic counts. The volumes entering and exiting the freeway mainline and EL facility at Hidden Valley Parkway will be the northern most point for traffic counts for the remainder of the I-15 corridor extending south to Main Street in Lake Elsinore.

Existing a.m. and p.m. peak-period volume counts are recommended to be collected at up to fifty (50) interchange ramps, and 24-hour machine counts will be collected for three (3) days at up to one-hundred five (105) roadway segments. Existing freeway mainline volumes will be obtained from Caltrans count stations in the study area but verified for mainline conditions at overpasses at each end of the study corridor. Field reconnaissance of roadway characteristics will be performed throughout the study area to gather data on circulation system characteristics such as lane configurations, intersection control, and signal phasing. The field reconnaissance will be supplemented by review of as-built plans data available from Caltrans and the local jurisdictions, as well as available aerial photography.

Traffic forecasts will be developed for each local interchange, system interchange, and EL lane ingress/egress point in the study area. Express/egress point locations will be determined in consultation with RCTC. The model highway network will be reviewed to confirm that it is consistent with the financially constrained Regional Transportation Plan (RTP). RCTC and Caltrans will provide concurrence regarding the methodology used to post-process raw 2019 or 2020 modeled volumes to the anticipated 2029 opening year of the project and a 2049 design year. INRIX speed data (to help calibrate the operations model and understand corridor characteristics) and Streetlight data origin-destination data (to understand travel patterns, address potential weaving issues with access/egress locations to the express lanes, and understand use of parallel facilities along the corridor).

Traffic forecasts will be developed for each mainline segment, and ramp, for the traffic analysis. Average daily traffic (ADT), as well as a.m. and p.m. peak-hour volumes will be generated for the no build and two build alternatives. Separate traffic forecasts will be prepared for the 2029 opening year and 2049 design year for each alternative which will be confirmed with Caltrans and project programming documents.

Traffic forecasts for the project opening year (2029) will be developed in a similar manner as those for 2049. Zonal socioeconomic data (SED) inputs for the project area will be developed in consultation with RCTC and local agencies through review of existing and future forecast SED and recent development trends in the area. The project opening year highway network will be developed in consultation with local jurisdictions' staffs, based on each jurisdiction's Capital Improvement Plans and committed projects identified in the Regional Transportation Improvement Program (RTIP).

The study area for the traffic forecasts along the I-15 Corridor and the transportation analysis will be as follows:

- I-15 mainline and proposed HOV/EL facility from the Main Street in Lake Elsinore to SR-91 in Corona (approximately 20 miles of freeway mainline)
- All local interchanges between SR-91 and Main Street, SR-74(Central Avenue), Nichols Road, Lake Street, Indian Truck Trail Road, Temescal Canyon Road, Weirick Road, Cajalco Road / CETAP West, El Cerrito Road, Ontario Avenue, Magnolia Avenue)
- 1 system interchange (SR-91), south facing ramp connectors and express lanes
- 50 ramps at each local interchange (ramp termini, plus one in each direction), as well as 10 other discretionary locations if required to analyze project impacts as identified during course of study
- 105 local roadway segments to include those local roads anticipated for noise model development and modeling purposes

Deliverables:

Traffic Methodology Memo – will define corridor network assumptions as a basis for the volumes development and operational analysis (Draft and Final)

Traffic Forecasts – Volumes Development Report (Draft and Final)

160.10.15 Geometric Plans for Project Alternatives

Geometric layout plans will be prepared at 1" = 50' scale (approximately 1"= 100' for reduced plans). Lane shoulder and buffer widths will be labeled. Right-of-way requirements will be shown. Retaining wall and sound wall locations will be shown with approximate heights. Daylight limits of standard 2:1 or 4:1 slopes will be delineated for outside widening.

Geometric plan development for the Project Report will include the following three alternatives:

- Alternative 1 – No Build Alternative
- Alternative 2 – Caltrans-approved PSR Alternative (add one HOV lane in each direction)
- Alternative 3 – 2-Express Lanes in each direction

Profiles/superelevation diagrams for the PR alternatives will be provided for ramps and connectors for the two build alternatives. Profiles will also be provided for mainline widening using aerial topographic mapping and record drawing information.

Conceptual interchange analysis will be completed for each local interchange affected by the outside widening of the I-15 mainline. The project is divided into four separate phases, each of which is designated for a specific number of lanes and specific lane types for each alternative.

The project limits of each phase are as follows:

- NTP #1: I-15 ELPSE - SR-74 to Cajalco Road
- NTP #2: I-15 COP - Weirick Road to Magnolia Avenue

Alternatives will also include development of EL ingress and egress points at specific locations to be determined within the I-15 corridor. For the purposes of this proposal, we estimate a maximum of five (5) ingress/egress locations will be adequate to study the ELPSE.

We will provide input on express lane configuration and review plans for consistency with tolling concepts and for suitability for toll operations.

Deliverables: Geometric plans for two (2) build alternatives at 1"=50' scale. Project length is 15 miles and the total number of sheets for Alternative 1 and 2 are estimated at 70 layout sheets for each alternative for a Project Report Plan Sheet Set including Layouts / Existing Utilities / Grading-Drainage-R/W consisting of 210 cut plan view sheets and up to 40 typical section sheets for each build alternative included the Project Report plus the addition of the Advance Planning Study (APS) general plans sheets.

160.10.16 Prepare Construction Staging Concept Plans

We will prepare concept stage construction schematic for each of the two build alternatives. The construction staging concept schematic will depict the overall sequencing of construction for each alternative to balance the construction production, advance construction area signage for the temporary footprint determinations, traffic delay impact, laydown areas, material / equipment staging areas and related cost such as Temporary Construction Easements (TCE) if beyond the State or Public R/W. A summary providing a brief comparison of advantages and challenges of the alternatives from the perspective of construction staging will be included. The construction staging concept plans will show where the construction is occurring and where traffic is maintained during construction (i.e., identify opened lanes of travel and general construction areas). The construction staging concept plans basically consist of an overview. Details will be included when further clarification is needed to illustrate complex aspects of the plan. The concept stage construction plans (25 sheets) will be prepared at 1" = 200' scale (approximately 1" = 400' for reduced plans).

Assumptions: Scope is based on developing construction staging concept plans for each alternative. The I-15 Corridor will be split into a maximum of 2 distinct construction stages. At this point it should be assumed that there will be one D-B construction contract for the ELPSE.

Deliverables: Concept stage construction plans for two (2) alternatives (maximum).

160.10.20 Value Engineering

We will conduct a Value Engineering (VE) Workshop over no more than three (3) days for the study and review effort of the previous VA Study. If the previously approved VA Study (2014) is not deemed adequate to proceed with PA/ED, a three day VA Study will be completed under this scope item in place of the VE Workshop. The scope of the work shall include the following:

- Provide a qualified, independent VE team leader to lead a VE workshop.
- Provide VE workshop memo to document the findings and recommendations.
- Provide the following technical team members for the following disciplines:
  - Highway design
  - Traffic design
  - Traffic operations
  - Toll facility design
  - Structural design
  - Pavement design
  - Drainage / Water Quality design
  - Environmental planning
  - Construction Management

- Other team members to be provided by stakeholder agencies

Deliverables: Draft and Final VE Workshop Memo or VA Memo

160.10.25 Hydraulics/Hydrology Studies

Upon review of the available "as-builts" plans for existing culverts, bridges, channel facilities, and previous hydrology and hydraulic (H&H) reports within the project limits, a preliminary hydrology study will be performed based on acreage determinations tributary to the proposed drainage systems shown on the proposed Geometric Plans for the project prepared under WBS 160.10.15. The analysis will be based on the Caltrans drainage criteria and Riverside County Flood Control & Water Conservation District (RCFC&WCD) hydrology manual. A qualitative assessment will be made for existing drainage systems to assess potential deficiencies, possible upsizing, and relocation requirements. A detailed hydraulic analysis is not included in the scope of work at this time.

Deliverables: Preliminary On-Site Hydrology Study (Draft & Final)

160.10.26 Drainage Concept Plans

Existing freeway drainage systems will be plotted on drainage layout sheets based on information available on record drawings from Caltrans. On-site drainage facilities for the widening will be evaluated and identified in a qualitative manner for the selected alternative. We will identify critical locations to determine the extent of potential on-site drainage improvements/modifications including drainage inlets (i.e. sumps, super elevation reversal points, and on/off ramps), and develop conveyance systems to accommodate the inlet locations. Estimates of design discharges will be developed based on the Preliminary Hydrology Study completed in WBS item 160.10.25. These values will be used to determine the adequacy of the existing facilities and estimate preliminary sizing of the proposed drainage systems/modifications within the project limits. The capacity of existing storm drain systems for the PA/ED phase will be estimated using normal depth calculations to determine if the existing facilities have adequate capacity to accommodate increases in storm water runoff. Conceptual drainage plans will be prepared at a scale of 1" = 50 ft for the project length. No profiles sheets will be provided.

Deliverables: Drainage Concept Plans (Layout only, 70 sheets) 2 alternatives at 1"=50 ft scale.

160.10.27 Storm Water Data Report

In accordance with the Project Planning and Design Guide dated July 2017, a Storm Water Data Report (SWDR) shall be prepared. The SWDR will include the following information: Project description, identification of the receiving water bodies, geotechnical information, design pollution prevention and post-construction BMPs proposed, costs, and checklists. The SWDR will be signed by the Project Engineer and then submitted to Caltrans for review and approval by the District/Regional Design Storm Water Coordinator, the designated Landscape Representative, the designated Maintenance Representative, and final approval by the Project Manager to verify that storm water quality design issues have been addressed, and that the data are complete, current, and accurate. The SWDR will be prepared and revised at the Draft and Final PR phases.

Deliverables: Storm Water Data Report (long form) for 2 build alternatives (maximum)

160.10.35 & 160.10.36 Traffic Operational Analysis

We will analyze the study locations under AM and PM peak hour conditions using traffic simulation (either VISSIM or TransModeler) software. The simulation analysis will model the effects of grade, vehicle type, acceleration and deceleration characteristics, and driver behavior parameters and their effect on merge/diverge/weave activities more accurately than the macroscopic equations provided by the Highway Capacity Manual (HCM). The simulation model will be calibrated and validated to the existing operating conditions observed in the field measured through the GPS travel time runs and with the use of INRX and Streetlight Data obtained for this effort.

Using the microsimuation models, we will determine on-ramp merge, off-ramp diverge, basic freeway mainline and weaving section density and level of service consistent with the Highway Capacity Manual – 6th edition Volume 2 – Uninterrupted Flows using a freeway analysis tool that we developed in-house to work directly with microsimulation model output data.

Key performance metrics, such as average travel speed by segment and corridor, average travel time by segment and corridor, vehicle hours of delay, vehicle hours of travel, density, and level of service will be summarized. The traffic simulation results will be based on a statistically valid set of multiple runs using different random value seeds using FHWA Microsimulation Guidelines and/or other available state guidance.

Traffic operations analysis will be conducted for existing, opening year, and design year conditions for the analysis scenarios identified above for the respective projects and alternatives.

In addition to completing the traffic operations assessment for the freeway system, we will also report on the benefits to the local roadway system for parallel routes to I-15 with the project using the results of the travel demand forecasting model and volume-to-capacity assessment.

Lastly, for a specified area of the travel demand forecasting model, we will prepare Vehicle Miles Traveled by Speed Bin to identify the regional benefits of the project and use in the Air Quality Analysis and for assessment of SB 743 requirements.

We will also utilize a proprietary tool developed in-house to test the sensitivity of the analysis results utilizing the microsimulation tool. Specifically, this tool is an automated process where different input parameters are modified to “proof” the analysis results. For example, we could modify traffic volumes by plus or minus 5%, 10%, or 20% to determine how that would affect operations. Alternatively, we could test autonomous vehicle fleet penetration percentages as part of this tool. Although we do not anticipate including these results in the TOAR, we believe it will provide valuable information to RCTC and the project team to ensure that the project is designed with a high level of confidence.

Draft and Final TOAR

We will prepare the Traffic Operations Analysis Report (TOAR) summarizing the results and findings. We will prepare an Initial Draft TOAR to submit to Caltrans and other PDT members for two rounds of review and comments. We will submit the Final Draft TOAR for a second

review and the Final TOAR will be submitted in both hard copy and electronic format. It is anticipated that the TOAR will be incorporated into the Project Approval Report and Environmental Document by others.

General Purpose & HOV Lane Assessment

As part of this effort, we will evaluate a general-purpose lane concept. To complete this assessment, we will develop new project forecasts (for the horizons noted above) and will complete the operations assessment (using the same methodologies noted above) for this concept. This task assumes that the analysis will be completed to inform RCTC and the project team but will not be included in our official deliverables for the project. As such, we will summarize the results in memorandum format and provide that information to RCTC for informational purposes. The HOV Lane Validation Memo will determine the benefits of a single lane HOV facility including performance measures such: Daily AM/PM Peak Period VMT / Daily AM/PM Peak Period VHT / AM/PM Peak Period VHD / Daily AM/PM Peak Period Congested VHT at LOS E & F / Hours the HOV Lane experiences degradation on an average day / Operational Failure at the Termini of the HOV Facility.

Deliverables:

Initial Draft TOAR, Final Draft TOAR, and Final TOAR

General Purpose Lane & HOV Lane Validation Memo

160.10.40 Updated Right-of-Way Data Sheets

We will prepare Right-of-Way Data Sheets in accordance with the Caltrans *Right of Way Manual* (based on the most recent revision) for two (2) build alternatives including the following information:

- ROW requirement cost estimate (permanent & temporary)
- Parcel data utility
- Facility conflicts; railroad facility conflicts
- Identification of previously unidentified hazardous materials
- Displacement requirements
- Borrow or disposal sites required
- Potential relinquishments and/or abandonments
- Existing and/or potential airspace sites
- Estimated right-of-way schedule and lead time

Deliverables: Right-of-Way Data Sheets

160.10.41 Determine Right-of-Way Requirements

We will determine right-of-way requirements for two (2) build alternatives. Right-of-way requirements will be established in Microstation format and tabulated in an Excel spreadsheet with parcel number identification and area of acquisition required.

Deliverables: Tabulated Right-of-Way Requirements

160.10.45 Utility Locations Determined for Preliminary Engineering

We will research and obtain existing utility record drawings and establish a utility contact list. Contacts will be made with each utility company affected and a preliminary determination of relocation requirements will be made. Conceptual relocation alignments will be shown on the utility base maps. Prior rights determination is not included in this work program.

Using the record drawings obtained from the utility search, we will map existing utilities within the project area from Main Street to Magnolia Avenue contained in State R/W and adjacent frontage roads in County or City R/W. Potholing of existing utilities is not included in the work program. A utility matrix will be used to document no conflict, relocations, or protection requirements for owning agencies, the size of the utility, and existing facility material as available from record maps to develop costs estimates used in the R/W Data Sheet and Project Report.

Deliverables: Utility record drawings, owner contact list and existing utility mapping; Utility conflict matrix, Photo Log, and Conceptual Utility Relocation or Protection Cost Estimates

160.10.70 Traffic Studies

A traffic study will be prepared to document the traffic operations analysis of the I-15 corridor. The study will include existing conditions, analysis methodologies, and conclusions. The traffic study will be submitted under separate cover as a technical report. This technical report will be used as the basis to support other engineering and environmental technical studies, such as air quality and noise impacts, and it will be included as an appendix to the environmental document. An administrative draft will be prepared and submitted electronically for review by RCTC, Caltrans and specific technical team members. Responses to comments will be incorporated, and a second draft will be distributed electronically to the same reviewing team members.

The traffic study will describe the traffic forecasting procedure used in Task 160.10.10 and the analysis methodologies used in Task 160.10.35. All assumptions of the analyses will be clearly detailed. The results of the operational analyses of the mainline, HOV/EL facilities, interchanges, and arterial intersections will be presented, using tables and graphics as appropriate.

The methodology for the preparation of the traffic analysis will be described, including the following:

- Definition of alternatives
- Travel demand modeling process
- Study area
- Traffic forecasts
- Capacity analysis
- Level of Service standards
- Recommended improvements

No project conditions and two build alternatives for the I-15 corridor will be evaluated. Traffic analysis will include collision analysis, mainline analysis, and ramp merge-diverge analysis. The following components of the circulation system will be evaluated:

- System Interchange—AM and PM peak hour traffic forecasts will be prepared for the I-15 system interchange at SR-91. Traffic forecasts for all mainline segments and ramps in the interchange will be included. System interchange ramps will be evaluated using HCM consistent procedures for "major merges" or "major diverges" as appropriate.
- Freeway Mainline—Directional AM and PM peak hour traffic forecasts will be prepared for the I-15 mainline, the HOV/EL facility, and any collector-distributor roadways. Freeway mainline segments will be evaluated using HCM consistent procedures for "major merges" or "major diverges" as appropriate.
- Local Interchanges—AM and PM peak hour traffic forecasts will be prepared for entry and exit ramps at up to 12 local interchanges. Local interchange ramps will be evaluated using HCM consistent procedures for merges, diverges, or weaving segments, as appropriate.

We will work with Caltrans, RCTC, and the local jurisdictions to establish analysis procedures and level of service standards for each facility type. The base case for lane geometry assumptions will consist of the existing conditions plus any committed improvements only. Wherever the appropriate standard is not met, improvement strategies will be recommended. To the extent possible, the General Plans of each jurisdiction will form the basis for recommended improvements.

Deliverables: Traffic technical report.

160.10.80 Updated Geotechnical Information & LCC

Findings of investigations, preliminary considerations for design, potential impacts, and general design and construction recommendations (sufficient for Advance Planning Studies and Type Selection) will be documented in two types of reports. A Preliminary Geotechnical Information Report that addresses cuts, fills, retaining walls, noise barriers, overhead signs, drainage facilities, and pavement structural design will be prepared for review and comment by RCTC and Caltrans. It is assumed that there will be up to two (2) submittals of the draft of this technical report, a final report, and a revised final report.

The purpose of preliminary geotechnical investigation is to provide adequate geotechnical data and recommendations for preliminary engineering design of the project. Preliminary engineering analyses, recommendations and a Preliminary Geotechnical Design Reports (PGDR) for roadways and PGDR for Advanced Planning Study for 30 bridges (15 locations) will be provided in accordance with Caltrans requirements.

Review of Background Information

We will collect and review available relevant as-built roadway and bridge plans, existing soil, geology, seismic hazard, and groundwater data and maps maintained and provided by Caltrans and other agencies. This will include bridge general and foundation plans, Log of Test Borings (LOTB) sheets, roadway materials reports, and bridge foundation reports. No geotechnical borings will be taken for the PA/ED phase of this project.

Preliminary Engineering Analyses and Report Preparation

Based on the results of our review of as-built data, site-specific field exploration and laboratory testing results, we will perform preliminary geotechnical engineering analyses. Preliminary geotechnical findings and design parameters will be evaluated and provided, including site geology, encountered subsurface conditions, faulting and seismicity, liquefaction potential, corrosion potential, earthwork and grading, roadway structural

sections/pavement design, embankment fill induced settlement, excavations, slope stability, lateral earth pressures, rippability evaluation, material specifications, material sources and disposal. Geotechnical recommendations will be provided for preliminary design of bridges, retaining walls, tie-back walls, sound walls, drainage improvements and proposed culverts.

The reports will be signed and stamped by a California licensed Geotechnical Engineer (GE) and a Certified Engineering Geologist (CEG) and will include exploration logs and field test data, geotechnical laboratory test data, and possibly geotechnical cross sections in addition to the following:

- **Alignment Conditions**: We will review and summarize the surface and subsurface geologic conditions and materials, groundwater conditions, and the engineering properties of earth materials encountered during this investigation.
- **Seismic Design Parameters**: We will present the results of site-specific seismic hazard evaluation including recommended soil profile type, peak bedrock acceleration and design acceleration response spectra (ARS) curves for a Maximum Credible Earthquake (MCE) seismic event in accordance with the latest version of *Caltrans Seismic Design Criteria* (SDC).
- **Foundation Design Recommendations**: Using the data collected during our investigation, we will recommend a suitable foundation type for the proposed structures. Preliminary foundation design parameters, if required, will be provided in these reports but only a preliminary recommendation will be developed. Final foundation design is not included in this task. Shallow foundation design parameters include: footing data table, bearing pressures and settlements. Pile foundation design parameters include: pile data table, axial and lateral pile capacities, design pile tip elevations, pile settlement and deflection, and recommended p-y (load-deformation) curves for lateral load analysis of pile shafts.
- **Retaining Wall Design Recommendations**: Recommendations for suitable retaining wall and shoring systems for bridge abutments and wingwalls will be provided. Static and seismic lateral earth pressures (active, passive and at-rest pressures) and sliding friction parameters will also be included.
- **Earthwork and Grading**: We will present earthwork criteria, including recommendations for clearing and site preparation, subgrade preparation, recommendations for removal of unsuitable soil or fill, utility trench backfill, surface drainage, and landscaping considerations, as necessary. Recommendations for import soil engineering and compaction criteria will also be provided.
- **Corrosion Potential**: Results of corrosively data will be compiled and analyzed in accordance with *Caltrans Corrosion Guidelines*. Recommendations for preliminary corrosion protection and mitigation of steel and concrete foundation elements will also be provided.
- **Pavement Design**: We will present both flexible hot mix asphalt concrete (HMA) and Portland cement concrete (PCC) pavement sections for Traffic Indexes (TI) specified by a Caltrans District 8 Memo. The latest edition of *Caltrans Highway Design Manual* and local (District 8) design practice will be used in evaluating pavement sections. Pavement design will be based on measured R-values of encountered subgrade soils and anticipated properties of import soils. A life-cycle cost analysis of proposed pavement sections will also be performed in accordance with the current policy of Caltrans District 8.

Deliverables: Preliminary Materials Report (PMR) & District Preliminary Geotechnical Report (DPGR) - Earthwork, Cuts, Fills, Retaining Walls, Noise Barriers, & Pavement Structural Sections and the LCCA.

160.10.85 Structure Advance Planning Study

- Perform Advance Planning Study (APS) for each structure to evaluate the type of structure, foundation and its constructability issues, calculations of horizontal and vertical clearances, staging, preliminary construction durations, structure cost and structure interaction with roadway and railroad facilities.
- Develop the APS Report based on Caltrans' *Memo to Designers (MTD) 1-8* and Caltrans' Office of Specially Funded Projects' (OSFP) *Information and Procedures Guide*, including a preliminary seismic retrofit assessment of the existing bridge structures.
- Two General Plans (GPs) will be developed for each structure based on the two proposed project alternatives. One structure type will be recommended in the APS report.

The widening of the following existing bridges and undercrossings will be studied:

Item No.	Structure Name	No.	Type
1	Gavilan Wash	56-7[illegible] R/L	Bridge
2	Lake Street UC	56-682 R/L	UC
3	Alberhill OH (Temescal Canyon Rd UC)	56-681 R/L	OH
4	Temescal Wash	56-[illegible] R/L	Bridge
5	Horsethief Canyon Rd UC	56-679 R/L	UC
6	Horsethief Canyon Wash	56-678 R/L	Bridge
7	Indian Wash	56-677 R/L	Bridge
8	Indian Truck Trail Rd UC	56-676 R/L	UC
9	Temescal Canyon Rd UC*	56-675 R/L	UC
10	Mayhew Wash	56-674 R/L	Bridge
11	Coldwater Wash	56-543 R/L	Bridge
12	Glen Ivy UC (Temescal Canyon Rd UC)*	56-542 R/L	UC
13	Brown Canyon Wash	56-559 R/L	Bridge
14	Weirick Rd UC	56-541 R/L	UC
15	Bedford Wash	56-540 R/L	Bridge

Deliverables: APS Report per structure will included: bridge Advance Planning Study exhibit, structural plans for complex and connector-type structures, prepared Advance Planning Study Checklist, a design memo, itemized construction cost estimates consistent with Project Report requirements.

160.10.85.05 Structures Preliminary Geotechnical Report (SPGR)

This task includes work to produce a Structures Preliminary Geotechnical Report (SPGR). An SPGR is required during the early stages of a project and shall be included as part of the Structures Advanced Planning Study. The SPGR is used to document existing foundation conditions, make preliminary foundation recommendations, and identify the need for additional investigations and studies. The SPGR will provide the following using Caltrans' *Guidelines for Structure Foundation Reports*, Chapter 2:

- Project location
- Summary of site geology and subsurface conditions
- Preliminary scour evaluation based on observation of existing data
- Corrosion evaluation
- Preliminary seismic study
- As-built foundation data
- Preliminary foundation recommendations

15 preliminary bridge design reports will be prepared based primarily on as-built data and LOTB data. These reports will follow Caltrans *Guidelines for Structures Foundation Reports* and will address the following items:

- Brief discussion of subsurface conditions,
- Site-specific seismicity,
- Site-specific liquefaction discussion,
- Site-specific ARS design curve,
- Foundation type recommendation,
- Preliminary retaining wall design parameters,
- Embankment fill settlement estimates.

A total of 15 separate, brief reports will be prepared primarily to document foundation and to provide other preliminary geotechnical parameters for conceptual design and initial cost estimates to support the PA/ED.

160.10.90 Managed Lanes Engineering Study (MLES)

An MLES will be prepared in accordance with TOPD 11-02 which is consistent with current guidance and work previously completed on I-15 ELP. Caltrans noted that TOPD 11-02 guidelines have not changed since being issued and agreed the approach for RCTC's I-15 ELPSE Team to prepare the MLES with the required operational analysis and narrative section on meeting the Streets and Highways Code will be acceptable. Caltrans indicated the MLES will need to complete the safety analysis section per TOPD 11-02. Caltrans District 8 staff completed the safety analysis section for I-15 ELP (2016) this approach will be followed by the I-15 ELPSE Team and the HDR Team will be include the safety analysis section in the MLES.

The report will document existing conditions and evaluate the effects of HOV and EL options on congestion and capacity. The HOV and EL options will be compared with each other and with the mixed-flow lane options. Existing and forecast future vehicle occupancy will be evaluated. Potential policy measures to maintain efficient operations of the HOV/EL, such as toll adjustments or increasing the minimum occupancy requirements, will be discussed. Integration of the HOV/EL into the regional network of such facilities, including the existing EL facility on I-15, will also be evaluated and discussed.

Deliverables:

Draft and Final MLES Report

160.10.90 Preliminary Signing Concept

A Preliminary Signing Concept will be prepared as a 1:200 scale strip plot that will show draft locations of all OH signs and CMS/ DMS that conform to Caltrans standards.

Deliverables:

Preliminary Signing Concept

160.10.90.1 Modified Access Report (MAR) memo & FHWA Project Oversight Agreement

A MAR memo will be prepared to document that a MAR is not required as part of this project in accordance with FHWA guidelines. A formal MAR is not required for I-15 ELPSE since ramp modifications are not planned for this Project.

An Oversight Agreement will be prepared in conjunction with RCTC staff related to the capital expenditure cost, funding sources, and Design-Build delivery for the project and will be submitted by RCTC to Caltrans and FHWA for review and approval.

Deliverables: Draft and Final MAR Memo, Draft and Final Project Oversight Agreement

160.10.91 Constructability Review

A preliminary Constructability review will be performed on the plans for the preferred Build Alternative Staging Plans and will evaluate the following items:

- Structure Widening
- R/W Requirements including TCE's, Construction Access, and Potential Staging Areas
- Utility Relocations and Service Drop Locations
- Conceptual Drainage and Storm Water Treatment Locations
- Retaining wall and noise barrier locations

Deliverables: Draft and Final PA/ED Phase Constructability Memo

160.10.95 Updated Preliminary Transportation Management Plan

We will evaluate the feasibility of traffic control to develop the associated costs with the current Caltrans TMP checklist template for PA/ED to support project cost estimates. The TMP will be updated by the Design-Build contractor in the final delivery phase.

Deliverables: Preliminary Transportation Management Plan Checklist (Draft & Final).

160.10.99 Toll Concept Report

A Toll Concept Repot will be prepared and include high-level information related to express lanes, including toll policy goals, toll policies, potential business rules, toll system components and infrastructure, toll signage, enforcement methods, ingress/egress design, and operation and maintenance considerations.

Includes early tolling strategy and lessons learned workshop and three (3) workshops associated with the Toll Policy Report.

Deliverables: Draft and Final TCR

160.15.05 Prepare Cost Estimates for Alternatives

We will provide "order of magnitude" cost estimates for two (2) alternatives based on Caltrans *Project Development Procedures Manual* guidelines for Project Report cost estimates.

In addition, we will develop preliminary cost estimates for the toll collection equipment for the capital equipment needed for violation enforcement. Estimates will be based on the number of tolling locations (ingress/egress points), data collection backbone (fiber and/or wireless), and toll facility signs that are necessary for the express lanes.

Deliverables: Project Report cost estimates. (Preliminary Capital Cost / Draft & Final Engineers Estimate) and preliminary estimates for anticipated toll equipment and signage.

160.15.10 Prepare DSDD for Exceptions to Design Standards

We will identify non-standard design features based on the Design Checklist (DIB 78-02, dated 2018) for each of the two (2) build alternatives. DSDD will be prepared for exceptions to Bold and Underline standards for the selected/preferred alternative only. Up to four submittals (three review cycles) of the DSDD are anticipated.

Deliverables: List of Non-Standard Features for two (2) alternatives, DSDD for Exceptions to Design Standards for the selected alternative.

160.15.20 Prepare Draft Project Report

This task entails preparing a Project Report based on the *Project Development Procedures Manual* (PDPM) Appendix K. All information prepared as part of Task 160.10 will be incorporated into the Project Report in accordance with the PDPM. A preliminary Draft Project Report will be submitted to RCTC and Caltrans for review and comment. Following receipt of one consolidated set of comments, a comment review workshop will be held with the respondents to review their comments and provide appropriate responses. A Final Draft Project Report will be prepared and submitted for review and approval. Based on the current *Project Development Procedures Manual*, the Draft Project Report will be submitted to FHWA as the basis for approval related to improvements on I-15 if needed. It is assumed that minimal changes to the Draft Project Report will be necessary to satisfy FHWA requirements if a MAR is required due to changes in ramp connections to I-15 which are not expected under this Project. Up to four (4) submittals (three review cycles) of the Draft Project Report.

In addition, we will prepare the tolling section of the Project Report. A preliminary Draft Project Report will be submitted to RCTC and Caltrans for review and comment. Following receipt of one consolidated set of comments, a comment review workshop will be held with the respondents to review the comments and provide appropriate responses. A Final Draft Project Report will be prepared and submitted for review and approval.

Deliverables: Preliminary Draft and Final Draft Project Report

160.15.25 Circulate, Review and Approve Draft Project Report

Once the Final Draft Project Report has been submitted for review and approval, our project manager or his designee will work with RCTC and Caltrans to obtain the appropriate signatures. If issues or questions arise during the approval phase, we will work with RCTC and/or Caltrans staff to answer any remaining questions, provides additional information, and obtain signatures as appropriate.

Deliverables: Signed Draft Project Report

160.20.30 Land Net Surveys & 160.20.35 Land Net Map

The existing land net digital data will be obtained, reviewed and updated to include new developments since the 2009 surveys. Cadastral research will be performed within Caltrans District 8, the county of Riverside, and other applicable entities for new mapping that affects the

Caltrans right of way, and other adjacent and intersecting rights-of-way within the project limits. The new mapping will be calculated and tied into the existing land net mapping via field surveys.

Deliverables: Field survey notes and updated land net mapping file.

160.20.50 Control Surveys

Horizontal and vertical corridor control will be established along the corridor to support the aerial photogrammetry, land net surveys, engineering surveys and future design and construction activities along the corridor. The survey control will be set in accordance with Caltrans survey standards and will be tied into the North American Datum of 1983 (NAD83 NSRS 2007) and the North American Vertical Datum of 1988 (NAVD88 Riverside County) or as specified by the client.

160.20.55 Photogrammetric Mapping

Current aerial photogrammetric mapping will be obtained for the project limits defined above in accordance with the Caltrans A-B-C process and Caltrans photogrammetric and CAD mapping standards and specifications. This mapping will replace the 2005 aerial mapping captured during the PSR. While the Caltrans A-B-C process is not required for PA/ED, it will be required for PS&E and/or final design. It is recommended that the aerial mapping be captured in accordance with the A-B-C process so that it is available for future design phases of this project.

Aerial mapping will be obtained for the I-15 corridor between Railroad Canyon Rd IC and Hidden Valley Parkway IC. The limits of the photo mapping will include a swath of 2000-feet on each side of the centerline of the I-15 corridor for aerial photography.

The aerial mapping will be prepared in conformance with Caltrans CAD mapping standards and photogrammetric specifications. Horizontal and vertical aerial control panels will be set to meet aerial triangulation requirements. The mapping will be prepared to 1" = 50' scale with 1-foot contours and will be delivered in a Microstation v8 format.

Survey crews will field verify the aerial mapping to delineate planimetrics obstructed by tree coverage or shadows and to verify the contours and spot elevations generated from the aerial mapping.

A color digital orthophoto with 3" pixel resolution will be prepared from the 50-scale imagery. The digital orthophoto will cover the same mapping limits described above.

Deliverables - Mapping at 1" = 50' scale in a Microstation v8 format.

160.20.60 Engineering Surveys

Supplemental topographic surveys will be performed as needed in join areas to locate existing pavement (asphalt / concrete) and other hard surface elevations and to locate large drainage structures, box culverts, bridge structures, surface utilities, flood plains, drainage ditches, base of retaining walls, noise barriers, OH sign structures, CT fiber optic access vaults/manholes and other major features along the corridor in support of the preliminary design studies of alternatives.

The topographic survey information will be plotted at a scale comparable to the aerial mapping in a Microstation v8 format.

Deliverables: Topographic survey information at a scale comparable to the aerial mapping in a Microstation v8 format and ASCII file of the topographic survey points.

160.20.70 Pavement Surveys

Pavement surveys will be performed as needed to verify edge of traveled way, edge of shoulder and other pavement features along the corridor for the COP only. The survey crew will use reflectorless total station technology or other scanning capabilities to obtain this data, no formal lane or shoulder closures have been included in this cost estimate.

The topographic survey information will be plotted at a scale comparable to the aerial mapping in a Microstation v8 format.

Deliverables: Topographic survey information at a scale comparable to the aerial mapping in a Microstation v8 format and ASCII file of the topographic survey points.

160.30.05 Maps for Environmental Evaluation

We will prepare environmental study maps for the alternatives selected for further study.

- Project vicinity map
- Project location map
- Proposed project/alternatives plans
- State right-of-way and adjacent parcel mapping
- Hydrologic and floodplain identification from existing data
- Fault and environmental geology mapping from existing data
- Biological and cultural mapping

Deliverables: Environmental study maps.

160.30.10.01 Create and Maintain GIS Database

We will create and maintain a GIS database that shall be used throughout the PA/ED phase. The objective of this task is to establish environmental baseline data in a manner compatible with engineering and topographic mapping. Accurate mapping of the environmental constraints and considerations within the project study area is essential to facilitate analysis of potential impacts associated with each of the alternatives under consideration. Environmental components/data to be included in the GIS database include Section 4(f) resources, historic properties, the 100-year floodplain, water features, waters of the U.S., hazardous materials sites, sensitive visual features, land uses and right-of-way, and noise receptors. Data from publicly available sources will be used as a starting point and adjusted, as appropriate, based on field surveys and observations. Data will be provided in a manner consistent with the project base mapping to ensure that the datasets are compatible and can be used for evaluation of each alternative's effects on the environment.

Deliverables: GIS Database - electronic shape files used for build alternative maps will be transferred to RCTC via ftp, external drive, or cloud based share site from PA/ED

160.30.15 Obtain Rights of Entry for Environmental Studies

We will require access to some private and public lands as needed for environmental technical studies. We will coordinate with RCTC and Caltrans to identify properties where property access is needed for the technical studies. We will provide a draft right-of-entry (ROE) request letter for distribution to affected property owners to be reviewed by RCTC. The Draft ROE letter will specify the duration and purpose of property access. We will make changes to the ROE letter as specified by RCTC. The final ROE will be distributed in the manner specified by RCTC with reimbursement for preparation and mailing if required. All field personnel will be provided

with copies of the appurtenant ROE documents in the event that field verification of permission is requested.

Deliverables:

Mapping itemized under Task 165.05.20

Aerial and site photos

Identification of properties requiring ROEs (200 parcels maximum)

Draft and Final ROE letters

165 Perform Environmental Studies and Prepare Draft ED

165.05 Environmental Scoping of Alternatives Identified for Studies in PID

It is assumed that two Build Alternatives and a No Build Alternative will be studied as identified in the RCTC *Request for Qualifications for Completion of PA/ED for the I-15 Express Lanes Project – Southern Extension*. No additional alternatives are assumed in this scope to be evaluated during the environmental process. The tasks included under 165.05 are described below.

We will obtain and examine applicable information from prior stages of the project development process to support the environmental evaluation during PA/ED.

165.05.05 Project Information Review

We will obtain and review previous documentation supporting the development of the original Project Study Report, as well as information from other related projects.

Subtasks:

- Obtain and examine project plans from earlier stages
- Discuss and verify initial Purpose and Need, Alternatives, and previous environmental evaluations with the Project team
- Obtain and examine RTP and FSTIP listings
- Verify Clean Air Act conformity status of project and alternatives
- Start Project File

Deliverables: Initial Environmental Project File Setup

165.05.10 Perform Public and Agency Scoping and Community Outreach

The consultant will provide assistance to the Project Team to organize and facilitate up to two public scoping meetings to inform the public and responsible agencies about the proposed project and the environmental process, and to solicit input from the agencies and public regarding the alternative to be evaluated in the EIR/EIS and environmental parameters and potential impacts to be assessed in the EIR/EIS. We will follow the Caltrans SER in preparing the NEPA and CEQA notices and initiating the scoping process. A third meeting may be held if deemed necessary by RCTC in conjunction with a regularly occurring meeting held for outreach with Temecula Valley residents.

165.05.10.01 Initiation of Studies Letters

We will prepare the Cooperating and Participating Agency letters based on the letter templates available on the Caltrans SER. The Cooperating and Participating Agencies will be identified

and agreed upon with the PDT. Letters will be mailed via certified mail to the agencies and the responses (or lack thereof) will be tracked. Any comments received from the agencies will be shared with the PDT and will be taken into consideration when preparing the technical studies and environmental document.

Deliverables: Prepare and distribute Cooperating and Participating Agency letters and track responses

165.05.10.02 Prepare and Distribute NOI and NOP

We will prepare a draft NOP using the CEQA Initial Study (IS) Checklist. The NOP will include a summarized project description, project map, the CEQA IS Checklist, and brief answers to the checklist questions based on existing available information. No new information is assumed to be developed in completing the checklist. Because it is anticipated that an EIR/EIS will be prepared, detailed answers to the checklist questions will not be developed. Rather, the responses will be brief and will indicate the anticipated range of potential impacts of the proposed project that will be addressed in the EIR/EIS. We will provide the Draft NOP to RCTC and Caltrans for review. It is assumed that only the two previously identified build alternatives will be addressed in the NOP.

Based on comments received, we will revise the documents and submit the final NOP and distribution list to Caltrans for approval.

HDRs outreach consultant will develop the distribution list and will distribute the NOP via certified mail to the State Office of Planning and Research (State Clearinghouse), elected officials, affected agencies, interested groups, and property owners within 500 feet of the project utilizing the property ownership list to be provided by HDRs right of way consultant.

As part of this task an initial purpose and need and project description will be prepared and logical termini will be reviewed to confirm that the project meets the requirements for logical termini.

<u>Responses Received on the NOP and NOI</u>
All written responses received related to the NOP and NOI will be tracked and shared with the PDT. These responses will be taken into consideration when preparing the technical studies and environmental document. No responses will be prepared to the comments received; they will, however, be considered when preparing the environmental document.

Deliverables: Draft and Final NOP with Initial Study (CEQA Checklist), with written responses, Draft and Final distribution list. NOI and NOP responses tracking matrix

165.05.10.03 Prepare for and Conduct Scoping Meetings

We will attend up to two (2) public scoping meetings, in the project area, to inform the public and responsible agencies about the proposed project and the environmental process, and to solicit input from agencies and the public regarding the alternatives to be evaluated in the EIR/EIS and environmental parameters and potential impacts to be assessed in the EIR/EIS. We will prepare a draft and final public scoping meeting notice for publication in newspapers (English and Spanish language) as agreed upon by the PDT. A third meeting may be held if deemed necessary by RCTC in conjunction with a regularly occurring meeting held for outreach with Temecula Valley residents.

The following will be prepared;

- Prepare sign-in sheets and comment cards
- Provide a Spanish translator at meetings
- Provide a court report at meetings if needed
- Prepare a written summary of written comments received on comment cards at the scoping meetings
- Prepare all display boards
- Conduct and document environmental scoping meeting(s)
- Conduct and document other formal and informal public participation activities such as citizen's committees, focus groups, presentations to political bodies, and media appearances, not directly related to preparation and coordination of a technical work product.
- Prepare and circulate newsletters and other public informational and press materials
- Prepare and maintain Project Distribution/Mailing List
- Coordinate posting of public information documents to agency website
- Any project website development and maintenance
- Coordinate public input for the project alternatives and purpose and need
- Publish meeting notices in newspapers as identified by the PDT
- Identify and reserve meeting locations
- Provide refreshments and other materials needed for the scoping meetings
- Prepare Summary of Public Scoping Meetings document

Deliverables:

Draft and Final scoping meeting notices (Eng/Sp)

Review and input to public scoping materials prepared by others

165.05.10.04 Draft Scoping Summary Report

A Draft Scoping Summary Report will be prepared to document the Project Team's and Caltrans' efforts to identify key issues related to the scope of the environmental issues and the range of project alternatives that should be addressed in the EIR/EIS for the proposed project. The scoping report will summarize the scoping meetings and the issues raised in response to the NOP and NOI and the scoping meetings. The scoping report will include copies of the NOP, and NOI, the distribution list, the newspaper notices, and the written comments received at the scoping meeting and in response to the NOP and NOI. The Draft Scoping Summary Report will be submitted to RCTC for review. Based on comments received, we will revise the document and submit the Draft Scoping Summary Report to Caltrans for review.

Deliverables: Draft Scoping Summary Report

165.05.10.05 Final Scoping Summary Report

The Draft Scoping Summary Report will be revised based on the comments received from Caltrans and a final Scoping Summary Report will be prepared and distributed to RCTC and Caltrans. The information received during the project scoping process will be incorporated into the environmental review and analysis in a manner consistent with the requirements of CEQA and NEPA.

Deliverables:

Draft Initiation of Studies Letters (electronic submittal)

Final Initiation of Studies Letters (hard copy submittal to the addressees)

Draft NOP and NOP Distribution List (10 hard copies and electronic submittal to RCTC)

Final NOP and NOP Distribution List (115 hard copies; 100 for distribution and 15 for RCTC)

Draft and Final newspaper notices (electronic submittals to RCTC and the newspapers)

Draft Display Materials and Handouts for the scoping meetings (electronic submittals to RCTC)

Final Display Materials and Handouts for the scoping meetings (150 hard copies of the handout; one hard set of the display materials)

Draft Scoping Summary Report (electronic submittal to RCTC)

Final Scoping Summary Report (10 hard copies and electronic submittal to RCTC)

Court Reporter, as requested by RCTC.

SAFETEA-LU Section 6002 Coordination Plan

In cooperation with Caltrans, we will prepare a coordination plan to identify participating agencies that will be part of the NEPA review process. The coordination plan's goals are as follows:

- Actively involve and establish lines of communication with affected agencies
- Encourage early and continuing participation and input
- Promote project understanding and project development
- Identify opportunities for agency review and comment on the project's Purpose and Need, goals and objectives, range of alternatives, analysis methodologies, and issues of concern
- Promote timely notice of meetings, hearing(s), and other project events
- Streamline the review of environmental documents

Deliverables:

Draft and Final Coordination Plan Memorandum

Updates to Project Risk Matrix

165.05.15 Alternatives for Further Study

Identification of the initial alternatives from preliminary design concepts for the corridor will be one of the critical milestones. The initial set of alternatives considered will address, to varying degrees, the project Purpose and Need. Alternatives must also have support from RCTC, Caltrans, other project stakeholders, and the public. The list of alternatives will be cataloged as early operational analysis and engineering viability assessment progresses stemming from early concepts deemed as viable for early further study and will be organized into the following groupings for PA/ED:

- Alternatives reviewed and removed from further consideration
- Alternatives that will be subjected to preliminary analysis to determine if they should be carried forward or removed from further consideration
- Additional alternatives that will be carried forward for additional analysis in the environmental technical studies

These findings will be organized into a brief alternatives selection memorandum that will be presented to the PDT for review and comment. Once the PDT agrees upon the findings, we will prepare a revised report for distribution to the PDT.

Two build alternatives, identified previously, and the No-Build Alternative are assumed to be evaluated for the proposed project. No additional alternative selection is assumed.

Deliverables: Draft and Final Alternatives Selection Memorandum.

165.10 Perform General Environmental Studies

Preparation of all technical analyses and reports will follow local, state, and federal environmental guidelines, primarily consisting of the Caltrans Standard Environmental Reference (SER) website, *Caltrans Project Development Procedures Manual*, local and state CEQA *Guidelines*, and FHWA Technical Advisory 6640.81 *Guidance on Preparing and Processing Environmental and Section 4(f) Documents*. The formats to be used for the technical studies will follow the guidance available on the Caltrans SER website as of the date that those studies are initiated.

See scope of work for each technical study for details regarding studies to be prepared. Only those technical studies identified in this scope of work are assumed or included. Any other technical studies or efforts included under WBS sub codes under 165 are assumed to be not required or addressed by others.

For this scope of work, the technical studies for which a specific scope of work has been included have been assumed based on a review of existing project information and a preliminary review of the project site. If additional studies are identified during the environmental phase of the project a scope of work and cost will be submitted for approval prior to their initiation.

For each report the following submittals will be made.

- Draft Technical Study (electronically to RCTC and then Caltrans)
- Revised Draft Technical Study (electronically to RCTC and Caltrans)
- Final Technical Study for approval (electronically to RCTC and Caltrans)
- Final approved Technical Study for file (4 hardcopies each to RCTC and Caltrans)

The following assumptions have been made with regard to the technical studies and permits that are to be prepared:

- No Section 7 consultation or California Endangered Species Act Section 2081 or 2080.1 consultation will be required, other than the consistency determination and Determination of Biologically Equivalent or Superior Preservation (DBESP) required under the MSHCP.
- Permit applications and processing (Section 401 Water Quality Certification, Section 404 permit, and Section 1602 Streambed Alternation Agreement), plus any associated Habitat Mitigation Maintenance and Monitoring Plan are not included in this scope of work.
- NEPA/404 integration process will not be required.

165.10.15 Community Impact Analysis, Land Use, and Growth Studies

A Community Impact Assessment (CIA) will be prepared and will identify the community impacts on surrounding neighborhoods, businesses, and minority and low-income populations as a result of project implementation. The CIA will assess the project's compatibility with the existing and future land uses and consistency with local land use plans, including municipal (Murrieta, Lake Elsinore, Corona, Norco, and Riverside) and Riverside and San Bernardino County general plans, regional transportation plans, and habitat conservation plans. The CIA will be

prepared following the *Caltrans Environmental Handbook: Volume 4 - Community Impact Assessment* (http://www.dot.ca.gov/ser/vol4/envhb4.pdf) and the Community Impact Assessment Template as provided by the Caltrans Standard Environmental Reference (SER) Guidelines (http://www.dot.ca.gov/ser/guidance.htm).

The CIA will consider residential and business acquisitions and relocations; and changes to access/circulation, community cohesion characteristics, demographic characteristics, growth, and community facilities. The area of measurement for demographic analysis may be conducted in one of two ways. This includes utilizing data from the 2010 U.S. Census for information at the census block group level or from the 2013-2017 American Community Survey 5-Year Estimates for information at the census tract level to identify characteristics of populations that are traversed by or adjacent to the proposed project. The nature and size of the area of measurement should be based on the level of detail of available data, the size of the project, and the potential area affected. Community profiles will be collected for the cities of Murrieta, Lake Elsinore, Corona, Norco, and Riverside, Riverside and San Bernardino County, and the State of California to help identify regional and local trends regarding demographics, local industry, occupations, and tax base. Property tax and sales tax revenue issues will be identified and discussed.

Maps and graphics for the CIA will be prepared using geographic information systems (GIS). GIS-based maps and graphics will be formatted for publication in a printed document. Up to 20 maps will be included in the CIA.

The CIA will include documentation on Environmental Justice (EJ) issues pursuant to Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The EJ analysis will include information on demographic and economic characteristics of the project area population and will identify the presence of any minority and low-income population groups. Potential adverse effects on the project area population, including minority and low-income population groups and disproportionately high and adverse effects on minority and low-income populations groups, will be analyzed.

Growth Inducement and Cumulative Impacts – We will prepare growth-related, indirect impacts analysis and will conduct a cumulative impacts analysis for community resources based on the Caltrans guidance for growth-related, indirect impacts and cumulative impacts (http://www.dot.ca.gov/ser/cumulative_guidance/approach.htm and http://www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/gri_guidance.htm). The analysis will follow the step-wise process to determine the level of impact assessment and appropriate level of research and documentation. For this scope of services, it is assumed that up to fifty (50) projects will be reviewed as part of the cumulative impacts analysis and that a qualitative analysis will be appropriate for the growth-related, indirect impacts analysis. Should a greater level of analysis be required, an amendment to the scope of services and cost estimate may be prepared for RCTC's authorization to conduct additional research.

The cumulative and growth-related analyses for community impacts will be included in the CIA and will be used in preparing the cumulative and indirect impacts analyses for the overall project to be presented in the EIR/EIS.

Assumptions:

One No Build Alternative and two (2) build alternatives will be considered in the analysis

GIS maps will be used in CIA; up to twenty (20) maps will be prepared

Latest versions of Caltrans guidance documents available at time of preparation of the draft technical report will be used

Up to twenty-five (25) copies of the administrative draft CIA will be printed for submittal for review; up to 50 copies of the final CIA will be printed; a PDF version will also be prepared

An administrative draft CIA will be prepared; up to two rounds of review and revision of the CIA are assumed in the scope of services in order to produce a Final CIA

Available metadata catalogues will be used to assemble data for CIA GIS maps. These base maps will be updated for the CIA based on field surveys conducted as part of the data gathering and analysis for the community impact assessment including the EJ analysis and the cumulative and growth-related, indirect impact assessment.

Deliverables: Draft and Final Community Impact Assessment Report

165.10.20 Visual Impact Assessment and Scenic Resource Evaluation

I-15 within Riverside County is eligible for designation as a State scenic highway, but is not officially designated. However, I-15 is identified on Figure C-8 of the County of Riverside General Plan as a scenic corridors that is protected for its aesthetic value under Land Use Element, Scenic Corridor policies LU 14.1 through 14.6, all of which protect designated and eligible State and county scenic highways. The ELPSE project would be occurring within a corridor noted for its scenic views. However, the proposed projects would not greatly alter views of the highway corridor and they are not likely to alter views to the surrounding landscape, for which the corridor is noted. It is assumed that a full visual impact assessment (VIA) will be prepared for the proposed project.

The analysis will be performed using methods and protocol developed by the Federal Highway Administration (FHWA) and adopted by the Caltrans and will utilize Caltrans' VIA template. The analysis will define the project location and setting; describe visual resources and resource change and viewer groups and viewer responses associate with the project; and evaluate potential visual impacts caused by the proposed project, including any proposed mitigation measures to reduce impacts.

We will conduct a field visit to assess the existing visual resource conditions in the project area, for use in preparing the analysis. The field visit will photo inventory existing conditions including viewpoints, notable visual resources, and the visual quality of the project area. After the field visit, the photographs will be downloaded and logged by location.

Up to six (6) visual simulations for the preferred build alternative and up to two (2) visual simulations for the COP (eight (8) total) will be prepared. The simulations will present the before and after project conditions. The location and direction of the visual simulations will be coordinated with RCTC and Caltrans prior to preparing the simulations.

Deliverables: Key View Location Memorandum and Visual Impact Assessment containing six (6) visual simulations for the preferred build alternative and up to two (2) visual simulations for the COP (eight (8) total).

165.10.25 Noise Study

We will prepare a Noise Study Report (NSR) evaluating the noise impacts and potential noise abatement/mitigation measures, if any, associated with the proposed project. Because federal and Caltrans oversight is involved, the report will be prepared in accordance with procedures specified by FHWA in Title 23, Section 772 of the Code of Federal Regulations (CFR) (23 CFR 772) and the Caltrans *Traffic Noise Analysis Protocol* (Protocol).

A field noise study will be performed to quantify and assess existing noise conditions at the potential noise-sensitive areas. Short-term sound-level data (typically two consecutive 10-minute measurements) will be collected at up to ninety (90) representative locations along the alignment. In addition, continuous long-term noise monitoring (24 hours or more) will be conducted at up to nine (9) locations. Noise measurements will be conducted in accordance with the methodologies detailed in the Caltrans *Technical Noise Supplement* (TeNS).

We will conduct traffic noise modeling related to the proposed project using the FHWA Traffic Noise Model (TNM) Version 2.5 and traffic data to be provided by the project traffic engineer. TNM will be used to model worst-hour traffic noise conditions at representative modeled receiver locations under existing conditions and design-year Build (with-project) and No Build (without-project) conditions.

Traffic noise impacts of the proposed project under 23CFR772 will be assessed by determining if implementation of the project is projected to result in traffic noise levels under design-year conditions that approach or exceed the FHWA noise abatement criteria (NAC) or if implementation of the project is predicted to result in a substantial increase in noise at noise-sensitive uses. If traffic noise impacts are projected to occur, information on the preliminary feasibility and reasonableness of noise abatement, as defined in the Protocol, will be evaluated and presented for use by decision makers in considering noise abatement. We will also evaluate potential construction noise impacts using methods recommended by the U.S. Department of Transportation.

We will prepare a NSR addressing the requirements of 23CFR772 in accordance with guidance in the Protocol and following the NSR report format indicated in the Caltrans Annotated Noise Study Report Outline. If warranted, the NSR will include a preliminary noise abatement design to schematically identify the location, height, and extent of noise barriers needed to abate noise impacts. In accordance with Protocol guidance, the description of noise walls will be sufficient for environmental review of the proposed project, but not for final design of the walls. If the analysis identifies that noise barriers would be acoustically feasible and would meet the adopted design criteria then abatement cost allowances will be calculated in the NSR and a Noise Abatement Decision Report (NADR) will be prepared. The NADR will determine if noise barriers are reasonable on the basis of cost and other factors (safety, geometric standards, etc.). If noise barriers are identified as being reasonable in the NADR then the necessary outreach/voting process will be conducted to determine if the barriers should be included in the project. It is assumed that outreach/voting will be conducted for up to sixty benefitted receptors.

Deliverables: Draft and Final Noise Work Plan and Draft and Final Noise Study Report.

165.10.25.05 Public Info Meeting for Noise Walls

It is assumed that up to two public meetings will be conducted related to the potential noise walls. Our project manager and noise specialist will attend the meeting and will assist in preparing for the meeting as well as a bilingual member of our team. We will prepare the handouts that describe wall design criteria or FAQ and an interactive map displayed on a large display that allows for viewing by general meeting attendees over an aerial photo of the project area with the proposed improvements of the preferred alternative overlaid on top of the aerial photo or in a .kmz file format. An interactive station will be available using a touch screen

device. This station allows individuals to zoom into areas within the project to view proposed improvements in areas of personal interest during an open house or public meeting.

Deliverables: Attendance at two public meeting related to noise walls by project manager and noise specialist, employ an interactive map for display of potential noise wall locations

165.10.25.10 Public Voting On Noise Walls

If a public vote is warranted related to the noise walls we will prepare the necessary materials for conducting and tabulating this vote by ballot mailings. It is assumed that this will consist of a single vote prior to or at each of the two public meetings described under 165.10.25.05. It is assumed that additional voting coordination may be required with nonresponsive owners/occupants and may result in follow up notices via mail or site visits to contact occupants with a flyer being left at the door. It is expected this will occur with a limited number of residents and will be coordinated with RCTC if needed.

Deliverables: Preparation of materials and tabulation of votes through mailed ballots.

165.10.25.15 Finalize Noise Wall Locations

Based on the outcome of the public meeting for noise walls and public voting on noise walls we will identify the appropriate final sound wall locations as appropriate.

Deliverables: Final location of sound walls, if required.

165.10.25.20 Noise Abatement Decision Report

We will prepare the noise abatement decision report.

Deliverables: Noise Abatement Decision Report

165.10.30 Air Quality Assessment Report

We will prepare an air quality assessment report that analyzes air pollutant emissions associated with changes in vehicle speed and traffic distribution patterns resulting from the proposed project and select traffic analysis parameters from the Final Volumes Development Report and Final Traffic Operations Analysis Report. All impact analyses will be performed consistent with the technical requirements and methodologies outlined in the Caltrans' Standard Environmental Reference (air quality chapter).

The air quality technical report will provide the following discussions and analyses:

Regulatory Setting and Existing Conditions. Summarize the existing federal, state, and local air quality regulatory environment as it affects the proposed project, and describe the location of sensitive receptors in the project vicinity. Using data provided by the California Air Resources Board (CARB) and the SCAQMD, characterize existing air quality conditions in the project area and explain how those conditions are affected by local climate and topography.

Evaluation of Construction Emissions. Based on current District 8 procedure, provide a quantitative discussion related to construction emissions.

Regional Transportation Conformity. Evaluate whether the project meets regional transportation conformity requirements by determining whether it is included, as currently defined, in the most recent Regional Transportation Plan (RTP) and Regional Transportation

Improvement Program (RTIP) prepared by the Southern California Association of Governments (SCAG).

Localized Carbon Monoxide Hot Spot Analysis. Analyze the degree to which project-related traffic volumes have a potential to effect local carbon monoxide (CO) concentrations using the California Department of Transportation CO Hotspot Protocol. It is anticipated that the CO screening procedure will be appropriate and that CALINE-4 dispersion modeling will not be required.

Localized $PM_{2.5}$/PM_{10} Hot Spot Analysis. Analyze the degree to which project-related traffic volumes have a potential to affect local $PM_{2.5}$ and PM_{10} concentrations, based on the United States Environmental Protection Agency (EPA) guidance document entitled *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. This scope and cost assumes that a screening level analysis is appropriate, and that no modeling will be required by Caltrans or FHWA to address $PM_{2.5}$ and PM_{10}.

Mobile Source Air Toxics. Evaluate proposed project-related mobile source air toxics (MSATs) emissions in accordance with FHWA interim guidance on how MSATs should be addressed in NEPA documents. As directed by said guidance document, if design year AADT is projected to be 140,000 or greater, the analysis will include a regional quantitative assessment of the project's effects on MSAT emissions.

Climate Change/Greenhouse Gas Emissions.

Assess the issue of greenhouse gas (GHG) emissions and climate change. The analysis will include regional emission calculations based on the proposed project's effect on the local vehicle miles and hours traveled. The GHG analysis will be coordinated with Caltrans prior to preparing the analysis.

Dispersion Modeling for Health Related Effects. In light of the recent Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S219783 decision made by the California Supreme Court on December 24, 2018, and based on the recent experience on other recent corridor projects for Caltrans, we will conduct dispersion modeling to evaluate long-term air quality impacts from emissions of ozone precursors and provide a discussion of the foreseeable effects of project-generated emissions on the likelihood of exceeding the NAAQS and CAAQS provided in the EIR/EIS. This analysis will assist project emissions and adverse health consequences or explain why it is not scientifically possible to define such a connection. The dispersion modeling will be included as an attachment to the air quality assessment report.

Air Quality Conformity Analysis Report and Checklist. Under NEPA Assignment, the federal air quality conformity determination has not been delegated to Caltrans and must be made by FHWA. We will prepare a separate Air Quality Conformity Analysis using the annotated outline for this report on the SER at the time that the report is initiated and will also prepare the Conformity Checklist based on the checklist that is available on the SER at the time that the Air Quality Conformity Analysis Report is prepared.

SCAG Transportation Conformity Working Group. The required TCWG form will be completed and submitted to Caltrans for forwarding to RCTC/SCAG for inclusion on the agenda for determining if the project is a project of air quality concern (POAQC). It is assumed the project will be found to not be a POAQC and that no specific analysis will be required related to the TCWG determination other than what is already included in this scope of work.

Mitigation Measures. We will develop mitigation measures, where applicable, to address significant air quality impacts, if present.

Deliverables: Draft and Final Air Quality Assessment Report.

165.10.35 Water Quality Studies

In accordance with the Project Planning and Design Guide dated July 2017, a Storm Water Data Report (SWDR) shall be prepared. The SWDR will include the following information: project description, identification of the receiving water bodies, geotechnical information, design pollution prevention and post-construction Best Management Practices (BMPs) proposed, costs, and checklists. The SWDR will be signed by the Project Engineer and then submitted to Caltrans for review and approval by the District/Regional Design Storm Water Coordinator, the designated Landscape Representative, the designated Maintenance Representative, and final approval by the Project Manager to verify that storm water quality design issues have been addressed, and the data are complete, current, and accurate. The SWDR will be prepared and revised at the Draft and Final PR phases.

Water quality requirements for local surface water and groundwater resources are regulated in this region by the Santa Ana Regional Water Quality Control Board (SARWQCB) and its Basin Plan on water quality standards. During construction and operation, the project would have the potential to result in water quality impacts to multiple surface waterbodies and groundwater resources due to stormwater runoff from the project site being discharged. In addition, multiple bridge crossings over waterbodies may need to be widened or improved to accommodate the project. Affected waterbodies may include Bedford Canyon Wash, Brown Canyon Wash, Coldwater Wash, Mayhew Wash, Indian Wash, Horsethief Wash, Temescal Wash, and Gavilan Wash. A portion of Temescal Wash located east of the project, from 1,400 feet upstream of Magnolia Avenue to Lee Lake, is listed as a 303(d) impaired waterbody.

A Water Quality Assessment Report (WQAR) for the proposed project will be prepared in accordance with NEPA and CEQA requirements and Caltrans Standard Environmental Reference Guidelines. The WQAR will be prepared using the 2017 WQAR Content and Recommended Format template provided on the Caltrans SER website. The project's potential impact on water quality will be evaluated. Water quality data will be compiled from existing available documents, such as the Water Quality Control Plan for the Santa Ana River Basin. The WQAR will document information on potentially affected surface water and groundwater resources, pollutants of concern, impairments, and beneficial uses of these waters. Findings from the Location Hydraulic Study, Storm Water Data Report, and other pertinent technical studies prepared for the project will be incorporated into the WQAR. Best Management Practices and other measures, if needed, will be recommended to avoid, minimize, or mitigate water quality impacts and to comply with the National Pollutant Discharge Elimination System permit requirements.

Deliverables: Draft and Final Storm Water Data Report and Water Quality Assessment Report

165.10.40 Energy Studies

A separate energy study is not anticipated to be required and is not included in this scope of work.

165.10.45 Summary of Geotechnical Report

In this task, information from the project geotechnical report will be summarized for use in the project environmental document. The summary will address geologic setting, major faults,

seismicity, ground shaking, topography, groundwater levels and the groundwater regime, soil conditions, and the presence of bedrock. It will also discuss feasible foundation alternatives for the structures, retaining walls and sound walls, discuss slope stability, and address other geotechnical related design issues including the need for additional field investigation required for final design.

We will also prepare a summary of all of these geotechnical findings, distilled down for use in the project environmental documents (EDs). We will document potential geologic hazards along the project alignment, including faulting and seismicity, seismic shaking, liquefaction potential, slope instability and landslides, earthquake-induced settlements and lateral spreading, dam-inundation and flooding. Findings and conclusions from this study will be included in a Geotechnical Impact Evaluation study, which will be a part of the EIR for CEQA and the EIS for NEPA approval.

Deliverables: Draft and Final Summary of Geotechnical Report

165.10.50 Hazardous Waste Initial Site Assessment

The purpose of the Hazardous Waste Initial Site Assessment (ISA) is to identify potential and known contaminant sources or recognized environmental conditions (REC), as defined by ASTM E1527-13, for the proposed project. Information developed during the ISA can be used to evaluate human health risk during construction, long-term risk to human health and the environment following construction, and possible legal or logistical implications associated with contaminated sites along the alignment.

The ISA will be performed in general accordance with the current *ASTM International (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E1527-13* (ASTM Standard), and in accordance with the following Caltrans ISA guidance documents and state and federal guidelines:

- Caltrans Project Development Procedures Manual, Chapter 18 – Environmental Contamination (2006) and Appendix DD Hazardous Waste (1999)
- Volume 1, Chapter 10, Hazardous Materials, Hazardous Waste, and Contamination of the Caltrans Standard Environmental Reference Environmental Handbook (last updated 2016)
- Caltrans ISA Guidance Document (2006)
- Applicable sections of United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries (40 Code of Federal Regulations [CFR] Part 312)
- California Public Resources Code Section 21092.6

The ISA will include an environmental database search, review of historical land use records, review of past environmental site assessments and environmental investigation reports, site reconnaissance, physical agency file review, interviews, and data analysis as follows.

Environmental Database Search

An environmental database search will be conducted. A search of existing federal, state, local, and tribal databases will be ordered from an environmental database company, and will be searched within the specified minimum search distances established by the ASTM Standard.

The list of databases that will be searched will include Federal databases such as NPL, CERCLIS, RCRA, Institutional Control/Engineering control registries, ERNS; and State and Tribal databases such as NPL–equivalent, CERCLIS-equivalent, landfill and/or solid waste disposal sites, leaking storage tank lists, registered storage tank lists, IC/EC control registries, voluntary cleanup sites, and Brownfield sites.

Historical Land Use Records

A review of reasonably ascertainable historical land use records will be conducted for the project alignment dating back to first developed use, or back to 1940, whichever is earlier. The purpose in reviewing such records is to determine past uses of the project site that may pose a hazardous waste concern. Historical land use records that will be reviewed for the project, if available, may include one or more of the following:

- Aerial photographs
- Sanborn fire insurance maps
- USGS topographic Maps

User-Provided Report

A review of any past environmental site assessment and environmental investigation reports provided by RCTC or Caltrans that may be pertinent to the project, such as Aerially-Deposited Lead Investigation Reports, will be conducted.

Site Reconnaissance

A visual survey of the project alignment and of adjoining properties will be conducted to identify any potential hazardous waste concerns. The visual survey of the project alignment will be conducted by driving the corridor. The visual survey of properties adjoining the project alignment will be conducted from the public right-of-way and from areas on properties where it is publicly accessible, when feasible, and may be conducted on foot and/or by driving. A visual survey of any private property requiring site access will only be conducted if Caltrans, RCTC, and/or others provide access or right-of-way entry permits. The visual survey would entail observing the general condition of the site and to locate potential contaminant sources (e.g. hazardous substances and petroleum products, aboveground and underground storage tanks or vent pipes, fill pipes or access ways indicating an underground storage tank, odors, pools of liquid, sumps, drums, polychlorinated biphenyls (PCBs) containing equipment, heating and/or cooling system, stains or corrosion, pits, ponds or lagoons, stained soil or pavement, stressed vegetation, solid waste, wastewater (including clarifiers), wells, and dumping). The site reconnaissance will be conducted by a qualified environmental professional as defined in the ASTM Standard. Site conditions of interest will be digitally photographed.

Physical Agency File Review

A physical agency file review will be conducted. Reasonably ascertainable file records maintained by the Riverside County Department of Environmental Health, Santa Ana Regional Water Quality Control Board, and Department of Toxic Substances Control will be requested and reviewed. The agency files will be reviewed for the most recent site status information, the nature and extent of contamination, as well as pertinent land uses, geologic, hydrogeologic, and other information that may be used to assess potential impacts to the project.

Interviews

Interviews with person(s) knowledgeable about the project site such as governmental officials at RCTC, Caltrans, and the Santa Ana Regional Water Quality Control Board will be conducted to obtain information on any past spills or contamination issues associated with the project site and of adjoining properties of interest.

Data Analysis

If hazardous waste sites are identified within the project study area (via the environmental database search, historical land use information, visual survey, agency file reviews, past environmental site assessment and investigation reports, and/or interviews), an evaluation will be conducted to determine the potential impact to the project and to identify subsequent procedures to further evaluate the extent of contamination and remediation requirements.

Report Preparation

Three (3) copies of a draft report summarizing our findings, conclusions, and recommendations will be prepared and submitted. We will respond to comments on the draft report prior to preparing a final report. The ISA report will identify data gaps due to a lack of or inability to obtain information along the alignment.

The proposed scope of services does **not** include the following:

- Research of environmental liens for property to be acquired
- Subsurface exploration for hazardous materials
- Air, water, asbestos, lead-based paint or other media sampling or analyses
- Consideration of possible future contamination of the alignment from adjacent or surrounding facilities or properties
- Investigation for radon or methane gas along the alignment
- Investigation for mold, mildew or other biological hazards along the alignment
- Handling or disposal of hazardous materials

Assumptions Associated with the Hazardous Waste ISA

- Only information received prior to issuance of the report can be included in the evaluation. We do not guarantee the accuracy of information supplied by its sources, but reserve the right to rely on this information in formulating a professional opinion on the potential for subsurface contamination at the site.

- An environmental site assessment cannot wholly eliminate uncertainty regarding the potential for recognized environmental conditions (REC) in connection with a property. Performance of this ISA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property, and this practice recognizes reasonable limits of time and cost.

Deliverables: Draft and Final ISA

165.10.51 Update Aerially Deposited Lead (ADL) – no field sampling required

We will update the I-15 CIP aerially deposited lead (ADL) survey report for the proposed widening of I-15 from SR-74(Central Avenue) to Cajalco Road. ADL is the result of tetra ethyl lead which was added to gasoline to prevent gasoline engine knocking for many years. Lead was present in the vehicle exhaust emissions and is now found in the soils adjacent to major

thoroughfares. The following scope was prepared to assess the presence or absence of ADL. Our work is being conducted to evaluate previous laboratory testing results with current thresholds to determine if lead-impacted soil is present and to evaluate the appropriate disposition of soils that will be disturbed during construction of this segment of I-15.

No ADL sampling will be accomplished therefore the following activities are not require: pre-field activities (including preparation of a work plan, a health and safety plan, underground utility clearance and encroachment permit application for ADL field sampling), direct-push soil sampling and analytical laboratory testing for lead. Statistical analysis and report preparation will be completed for the proposed project limits from previous raw sample data obtained under I-15 CIP while applying current statistical analysis to determine ADL concentrations as hazardous or nonhazardous under current DTSC thresholds.

Analyses and Report Preparation

We will analyze 2008/2009 laboratory data from I-15 CIP and prepare a letter-report summarizing results of this soil sampling and analysis for the segment of I-15 from SR-74 to Cajalco Road. We will perform a statistical evaluation of these soil samples tested for lead to characterize the soil to an 80% confidence interval. This statistical analysis will be performed in accordance with SW-846, Chapter 9. The report will provide conclusions and recommendations and will be signed by a California registered professional.

Deliverables: Draft and Final ADL Report

165.10.60 Location Hydraulic, Floodplain Study Reports, Rapid Assessment of Stream Crossings Report (RAS)

We will create HEC-RAS hydraulic models from the existing information to evaluate the thirteen (13) drainage crossings that involve 26 bridge structures. In addition, hydraulic models will be prepared to confirm final designs and, if necessary, to evaluate temporary construction conditions. Hydraulic performance criteria for Caltrans, Riverside County Transportation Department, and Riverside County Flood Control & Water Conservation District (RCFC&WCD) will be considered and incorporated into the evaluation of results. Previous HEC-RAS and routing models prepared for Caltrans will be reviewed and updated or revised as necessary to complete these analyses. We will prepare a technical memorandum to document the H&H analyses for the proposed bridge widening locations and for the Draft and Final Project Report.

We will prepare a Floodplain Evaluation based on the Location Hydraulic Study that will be prepared as described above. This scope of work presumes that the proposed widening of I-15 will not cause a significant floodplain encroachment as defined by 23 C.F.R. 650.105 and is not inconsistent with existing watershed and floodplain management programs. This scope also presumes that the Location Hydraulic Study provided above will contain the requisite information for each alternative as described in Chapter 17 of the Caltrans Standard Environmental Reference and in 23 C.F.R. 650A, Section 650.1 11(b)(c). The report will discuss potential impacts and recommend mitigation measures related to floodplain encroachment, flood-related hazards, natural or beneficial floodplain values, access interruption, and the community floodplain development plan.

This task will include responding to comments and making revisions as needed for approval of these reports as well as the approval of the draft and final Project Report.

Deliverables: Draft and Final Location Hydraulic Study, Floodplain Evaluation and RAS

165.10.65 Paleontology Studies

The paleontological potential of the project corridor was evaluated based on a brief initial analysis of existing geological maps and familiarity with the paleontology of the project area and vicinity. Geologic mapping indicates that the project corridor and vicinity is underlain by Jurassic and Cretaceous igneous and metamorphic rocks; and Paleocene, Miocene, Pliocene, Pleistocene and Holocene sedimentary rocks, which include older Quaternary alluvial deposits and younger Quaternary deposits.

Based on the initial analysis, the geologic units that are mapped through the project corridor include igneous, metamorphic, and sedimentary units that vary from having very low to very high paleontological potential (Potential Fossil Yield Classification [PFYC] 1 to PFYC 5). Areas where Pleistocene and older marine and non-marine sedimentary deposits are present at the surface or at depth are generally considered to have the highest potential to produce paleontological resources (moderate to very high potential [PFYC 3-5] and unknown potential [PFYC U]). Any recovered fossils from these units could provide important information on the paleoenvironment of the region. Holocene-aged sedimentary deposits have a low paleontological potential due to their young age, but are often underlain by older, more sensitive geologic units. The majority of the igneous and metamorphic rocks are considered to have very low paleontological potential (PFYC 1), however, some extrusive igneous rocks (such as volcanic tuff) do occasionally produce fossils and are therefore assigned an unknown potential (PFYC U) until the lithology can be verified.

All potential paleontological issues could be mitigated through the environmental review process, and monitoring. Due to the unknown and moderate to very high potential for the project to impact paleontological resources during ground disturbance in sedimentary deposits, at a minimum the following studies will be required or recommended:

- A Paleontological Identification Report (PIR) which involves the three components of the analysis of existing data including a geologic map review, a literature search, and institutional record searches.
- The analysis of existing data will be supplemented with a pedestrian field survey during the Paleontological Evaluation Report (PER) phase.
- Following the PER, a Paleontological Mitigation Plan (PMP) will be developed and implemented.

Deliverables: Draft and Final PIR/PER and Draft and Final PMP

165.10.75 Environmental Commitments Record

For the project an environmental commitments record (ECR) will be prepared in a matrix table format and included as an appendix in the Draft and Final EIR/EIS. It is assumed that the ECR will be reviewed as part of the EIR/EIS. The ECR will follow the ECR annotated outline that is available on the Caltrans SER at the time that the ECR is initiated

Deliverables: ECR for inclusion in the Draft and Final EIR/EIS and to be reviewed as part of that document.

165.15 Biological Studies

We will conduct a literature search, perform field surveys, and prepare a Natural Environmental Study (NES) report for the proposed project analyzing potential impacts to biological resources.

The report will be prepared in accordance with Caltrans SER guidance and will conform to the most recent Caltrans NES template available at the time that the NES is initiated. The following tasks will be performed during the preparation of this report:

Review of Project Information and Applicable Literature - A literature review will be conducted to identify special-status species known or reported from the project area. The literature review will include:

1) Special status species lists from the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS);
2) Database searches of current versions of the California Natural Diversity Database (CNDDB) and the Online Inventory of Rare and Endangered Plants of the California Native Plant Society (CNPS);
3) The most recent CDFW Annual Report on the status of California's listed Threatened and Endangered plants and animals;
4) Existing documentation of biological resources within the study area including past Natural Environment Studies for Interstate 15; and
5) The Western Riverside County Multi Species Habitat Conservation Plan (MSHCP).

Field Evaluation for Biological Resource Constraints - Although field work for the alignment was previously performed in 2009 and portions of the alignment between Cajalco Road and Weirick Road again in 2013, the study area will need to be re-evaluated due to the elapsed time. The project area will be evaluated, with a thorough walk-over covering all portions relevant to potential biological resource constraints. Detailed field notes will be compiled including conditions, visible disturbance factors, species habitat and general biological resources. The site will be evaluated regarding the presence, absence, or likelihood of occurrence for all special-status species (including burrowing owl, least Bell's vireo, southwestern willow flycatcher, and vernal pool fairy shrimp), habitats and general biological resource issues potentially posing a constraint to the project through applicable laws and regulations. Adjacent areas will also be examined to provide context. We have attempted to include in this scope any specialized studies that are most likely to be required; however, if habitat evaluations and/or focused surveys for any species other than those included in this scope of work are required, then this will be communicated immediately and a separate scope and cost for this work will be provided. The study area is assumed to be the proposed limits of disturbance plus a buffer ranging from 100 feet (plant surveys, fairy shrimp) to 300 feet (special-status wildlife species), and out to 500 feet for burrowing owl per the MSHCP protocol. This task includes evaluations/determinations for the following resources:

- *Habitat Evaluation and Focused Survey for Burrowing Owl* – Much of the proposed project site and adjacent lands lies within the MSHCP survey area for burrowing owl. All burrowing owl work will follow the MSHCP protocol. The study area for this work is assumed to be the proposed limit of disturbance and a 300-foot buffer (with an additional 200-foot buffer to be evaluated visually), where permission to enter is granted. Potentially suitable habitat will be mapped to determine survey areas. Once burrows are mapped, a 4-visit focused survey will be performed. This survey was must be performed between March 15 and August 30. All potential habitat will be surveyed 4 times as required by the protocol. Results of the focused surveys will be presented in the NES.
- *Least Bell's Vireo/Southwestern Willow Flycatcher Habitat Assessment and Focused Surveys* – Qualified biologists will conduct U.S. Fish and Wildlife Service (USFWS) protocol surveys for Southwestern willow flycatcher and least Bell's vireo. A total of eight survey visits for least Bell's vireo and a total of five survey visits for Southwestern willow flycatcher will be

conducted per USFWS protocol. When possible, surveys for the Southwestern willow flycatcher and least Bell's vireo will be conducted during the same site visit. The area to be surveyed will be suitable habitat within the identified direct impact area related to the proposed Limit of Disturbance and up to a 300-foot buffer, as accessible. The results of the habitat assessment and focused survey will be directly incorporated into the NES.

- *Habitat Evaluation and Focused Survey for Special Status Plants* – The project is located within or adjacent to a MSHCP survey area for Narrow Endemic Plant Species. Although the Limits of Disturbance are not presently known, the survey area passes over parts of the southern alignment and is directly adjacent to the ROW in much of the remaining alignment. There is also potentially-suitable habitat for other rare plant species not covered by the MSHCP that need to be addressed through CEQA. The study area for this work will be the proposed limits of disturbance and a 100-foot buffer.

  Field survey methods will be consistent with the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2009) and MSHCP protocol. The survey will occur within the window of April through September to adequately capture the blooming window. Reference populations for special-status plant species may require to be visited prior to initiation of field surveys to the extent possible to validate survey timing and document local variation in flowering phenology. If reference populations are visited and the subject plants are determined to not be in bloom, then an additional visit may be required to determine the appropriate survey timing. Botanical species data will be collected within the project footprint using 100 percent transect coverage surveys. Species names will be recorded according to The Jepson Manual Higher Plants of California, Second Edition (Baldwin, et. al., 2012). The results will be documented in the NES.

- *Fairy Shrimp – Focused Habitat Evaluation for Seasonally-Inundated Basins.* Depending on the project schedule, we will complete up to two surveys in winter 2020 (January-March), or fall 2019 (October-December), to assess the survey area for seasonally inundated basins including road ruts, cattle ponds, and vernal pools/alkali playas. Note that the federally-listed Riverside fairy shrimp (*Streptocephalus woottoni*) and vernal pool fairy shrimp (*Branchinecta lynchi*) occur in a variety of ephemeral basins and are not restricted to natural vernal pools. We will map basin locations with a submeter-accuracy GPS device. This information will be used for subsequently locating basins, such as during dry winter season conditions or during dry season sampling.

- *Focused Dry and Wet Season Fairy Shrimp Surveys* – A protocol-level survey to determine absence of listed branchiopods in potential basins involves one wet and one dry season survey. We will carry out a complete fairy shrimp survey on up to eight seasonally-inundated depressions. If additional basins are discovered during the habitat assessment, these additional basins can be included in the survey at an additional cost. Surveys will be conducted following the USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2015). As of January 2019, it is too late to perform a valid wet season survey in the winter of 2018-2019, so this proposal includes a dry season survey followed by a wet season survey assuming the project schedule begins in fall of 2019. Results of this work will be integrated into the NES report.

    - *Dry Season Fairy Shrimp Survey*. We will complete a protocol USFWS dry season survey for listed fairy shrimp within up to eight basins or ruts. Soil will be collected during the dry season while all basins are dry. Soil will be processed to collect any potential fairy shrimp cysts and inspected under a microscope by a biologist possessing the additional terms and conditions from USFWS for

processing, isolating and identifying cysts. A required USFWS survey report will be prepared and submitted to the USFWS per the biologist's permit conditions.

- *Wet Season Fairy Shrimp Survey*. We will complete a protocol USFWS wet season survey for listed fairy shrimp on up to eight basins. This cost assumes up to 22 site visits to conduct wet season surveys following protocol methodology. The new 2015 Guidance requires post-rain inspections for ponding and weekly surveys when basins are inundated. Surveys will be conducted during appropriate conditions between October 2019 and May 2020. Exceptionally wet winters could require additional survey effort. If additional basins are observed, additional costs may be required. A required USFWS survey report will be prepared and submitted to the USFWS per the biologist's permit conditions.

- *Habitat Evaluation for Bats and Colonial Nesting Birds* – Qualified biologists will survey the project disturbance limits and a 100-foot buffer to identify any suitable habitat that may support bats and/or colonial nesting birds. As part of the habitat assessment, qualified bat biologists familiar with bat species with potential to occur in the vicinity of the project will survey the project disturbance limits prior to construction to assess the potential for bat day and night roosting as well as bat maternity roosting. Results will be mapped and included in the NES.

Bat Emergence Survey - Following the bat habitat evaluation, a bat survey will be conducted to identify locations with suitable habitat for bats utilizing visual exit counts and acoustic detectors. The survey will include a combination of exit counts and acoustic surveys. Biologists and acoustic equipment will be positioned at locations determined during the bat habitat evaluation. Surveys will be started a half hour prior to sunset and proceed for at least 3 hours after sunset or until activity has slowed or visibility is lost due to darkness. Pettersson bat recording units will be utilized to record any bats present for identification purposes. The calls will be analyzed by a qualified biologist to identify any bats picked up by the recorders. The methods and results will be incorporated into the NES. It is planned for emergence surveys will be conducted at up to five (5) structures that have initial signs of presence. Presence is not expected at every structure so surveys are not required for every structures on the corridor.

Jurisdictional Delineation.

We will delineate all potential aquatic features within the proposed disturbance footprint plus a 50-foot buffer. As part of this task we will review the draft I-15 Corridor Improvement Delineation and prior biological survey results (2011), current and historical aerial photographs, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil mapping data, USGS topographical maps, National Hydrography Dataset, U.S. Fish and Wildlife Service National Wetlands Inventory data prior to conducting delineation fieldwork and in the process of determining jurisdictional status of features identified in the field.

All potential aquatic features identified during the literature review and within the proposed disturbance footprint plus a 50-foot buffer will be investigated on foot. When linear potential WOUS are encountered, widths will be recorded (in feet) on 1:2,400-scale aerial maps with topographic contours overlaid based upon visible landmarks. Where notable features such as culverts may be observed in the field but not visible on the aerial photograph, they would recorded with an ESRI Collector for ArcGIS application on an iPad connected to a global position system recorder with submeter accuracy. The Ordinary High Water Mark will be measured at locations where transitions were apparent. Indicators of an OHWM and wetland would be based upon 33 CFR 328.3(e) and the methods outlined in the *USACE Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the USACE*

Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008a), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008c). Other data collected will include photographs, bank-to-bank width, bank height and morphology, substrate type, and all vegetation within and adjacent to the feature. Features potentially subject to CDFW jurisdiction will be mapped from top of bank to top of bank and examined for the presence of riparian vegetation. All data collected in the field will be incorporated into GIS along with basemap data. The GIS data will then be used to quantify the extent of potential jurisdictional features within the jurisdictional study area and potential impacts to these features.

Data collected during the delineation survey will be transmitted in a Delineation Report prepared in accordance with Caltrans, USACE and CDFW standards. This task includes up to two revisions in footprint and 2 rounds of comments (one by RCTC and one by Caltrans); up to 10 non-linear features and 75 linear features requiring delineation ; all necessary rights-of-entry provided by RCTC.

Determination of Biologically Equivalent or Superior Preservation (DBESP) Report - The project will impact riparian/riverine resources, which will require a DBESP under the MSHCP. The report will follow the RCA requirements and will include a project description, biological resources existing conditions, proposed impacts (direct and indirect), mitigation for impacts, and finding of equivalency or superior preservation. As part of this task, the equivalency component will be developed in coordination with the Regional Conservation Authority and resource agencies to determine potential mitigation options for impacts on Reserve Assembly lands, Criteria Areas, and CDFW reserve lands. This task includes GIS analysis, meetings and conference calls with stakeholders, and similar related activities.

Western Riverside MSHCP Joint Project Review Application - We will prepare a cover letter and complete the Joint Project Review (JPR) checklist/application for submittal to the Regional Conservation Authority (RCA) for processing. We will coordinate with RCTC, and RCA as necessary during the processing period. This task also includes participation in one meeting with RCA and the wildlife agencies (USFWS and CDFW) as part of the review process. No application fee is assumed or included.

Agency Coordination - We will conduct meetings with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), Regional Conservation Authority (RCA), U.S. Army Corps of Engineers (USACE), and Santa Ana Regional Water Quality Control Board (RWQCB) to provide preliminary project information, solicit concerns, and discuss agency requirements and biological survey plans and schedule. Discussions will also include project impacts and potential mitigation ratios/approaches. In addition to the DBESP and JPR related meetings it is assumed that up to eight (8) meetings with resource agencies will be conducted.

Tree Inventory - A Tree Inventory will be performed in the proposed right of way (ROW). All trees within the proposed ROW with a one inch caliper diameter or higher will be inventoried. Metal tags will be placed on each tree inventoried with a unique ID number. The location of each tree will be recorded using a sub-meter Global Positioning Systems (GPS) and cataloged according to the unique ID number from the metal tags. The following information will be recorded for each inventoried tree: species; number of trunks; diameter at breast height (DBH) of each trunk; estimated height; estimated canopy width; health (1 – 5 scale); and aesthetics (1 – 5 scale).

Based on analysis of aerial photography, there are an estimated 600 trees in the project area that will be part of the inventory. The inventory will not include species such as tree tobacco (*Nicotiana glauca*), toyon (*Heteromeles arbutifolia*), lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), or any similar species that is generally considered to have a shrub growth form, which may have main stems with a caliper of greater than one inch.
All trees will be accessed to the extent feasible; however, trees that cannot be safely accessed will be marked using an offset GPS coordinate and estimated values for DBH. Any tree surveyed in this manner will be noted in the database. For crew safety, all surveys will be conducted in a marked vehicle with overhead caution lights, and trees will only be accessed from locations where the vehicle can be safely pulled off of the active roadway.
It is assumed that trees overhanging the ROW with trunk(s) outside the ROW will not be inventoried and that no more than 650 trees will need to be inventoried. In addition, it is assumed the following areas will be excluded from the inventory:

- The area between the NB off ramp to Lake Street and Walker Canyon Road where trees are extensive and not likely to be impacted by the project (low lying topography separated by a guardrail)
- SB on ramp to I-15 south of Lake Street (Temescal Wash) where trees are prolific and not likely to be impacted within jurisdictional aquatic resources.

Obtaining permits would happen during a later phase of the project and therefore permitting is not included in this scope of work. It is expected the project will not impact WRMSHCP linkages since box culverts already extend completely across existing State R/W and existing bridge deck widening will typically occur within the freeway median.

Deliverables: Draft and Final NES; Delineation Report prepared in accordance with Caltrans, USACE and CDFW standards; and DBESP.

165.15.10 Wetland Studies

It is assumed that wetlands will not be impacted or will be avoided by the proposed project and that an evaluation of wetlands avoidance alternatives and that the preparation of a 404b1 analysis and LEDPA will not be required. This scope and cost does not include the preparation of a Habitat Mitigation Monitoring Program (HMMP), which would be prepared as part of the Section 401 Water Quality Certification, Section 404 permit, and/or Section 1602 Streambed Alteration Agreement application process during the next phase of the Project. Preliminary identification of potential wetlands or waters of the U.S./State will be conducted as part of PA/ED to anticipate permit needs that will need to be obtained during the final design phase of the project. Future permit needs and monitoring efforts will be included in the PA/ED Risk Matrix in the Project Report.

Deliverables: Updates / Entries in the Project Risk Matrix

165.15.15 Resource Agency Permit Related Coordination

The most important portions of the assessment will be the discussions of potential project effects on federally listed threatened/endangered species and proposed avoidance, minimization, and mitigation efforts. We will base these discussions on our field studies, literature research, and correspondence with wildlife agency personnel and other knowledgeable individuals.

It is unknown whether permits will be required and/or the extent of any permitting efforts. Permits are not assumed or included in this scope of work. Time has been included for preliminary coordination efforts with U.S. Army Corps of Engineers, Regional Water Quality

Control Board, and California Department of Fish and Game. If permits are identified as being needed then it is assumed that those would be prepared and processed under a separate project phase. The preparation of permit applications and processing are not included in this scope of work.

Deliverables: Preliminary coordination efforts with U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Game.

165.20 Cultural Resource Studies

The following subsections are incorporated within the following scope.

- 165.20.05 Archaeological Survey
- 165.20.05.05 Area of Potential Effects
- 165.20.05.10 Native American Consultation
- 165.20.05.15 Records and Literature Search
- 165.20.05.20 Field Survey
- 165.20.05.25 Archaeological Survey Report
- 165.20.20.20 Bridge Evaluation
- 165.20.25.15 Historic Property Survey Report

The proposed project improvements will be subject to compliance with Section 106 of the National Historic Preservation Act. This requires consideration of potential project effects to historic properties including archaeological and historical resources listed in or eligible for listing in the National Register of Historic Places according to criteria listed in 36 CFR800. Caltrans administers Section 106 compliance on behalf of FHWA and requires that documentation conform to specifications contained in Caltrans' Standard Environmental Reference. As of January 1, 2014, cultural resource studies must be prepared and processed in accordance with the *First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program In California.*

We shall conduct a records search at the appropriate Information Center of the California Historical Resources Information System. This records search will consult California's database of previous studies and previously recorded sites within the proposed project area and within a 0.5 mile radius, per Caltrans guidelines. Historic maps and photographs shall also be reviewed, if available. We shall establish an Area of Potential Effect (APE) map in consultation with the County and Caltrans for obtaining Caltrans approval. The map shall provide the survey boundaries for cultural resources to be evaluated during project studies. The APE map shall be based on the total anticipated disturbance footprint associated with project activities (e.g., road widening/interchange construction, staging areas and other temporary construction easements, detours, drainage facilities, temporary construction activities, and parcels containing impacted structures, if any). We will also contact the Native American Heritage Commission and request a review of the Sacred Lands File and will coordinate with Caltrans for consultation with Native American groups and other interested parties under Section 106 and Assembly Bill 52 to request information regarding the types of potential cultural resources in the study area. Consultation will be conducted in accordance with appropriate current state and federal regulations.

Following completion of the record search/review, we shall conduct a field survey of the APE for archaeological resources. It is assumed that HDR's right of way consultant will be responsible for obtaining access for conducting the surveys. This scope of work assumes that no archaeological sites will be identified in the APE and that no testing and/or evaluation will be required. It is anticipated that an Archaeological Survey Report (Finding of No Archaeological Resources Present) will be prepared and no additional documentation will be required. The ASR shall include sensitivity of the project area for Native American resources, project area ethnography and prehistoric and historic context, Native American coordination and consultation and detailed results of the records search.

A qualified architectural historian will conduct a field survey of the proposed project area and will document the results in a memo. It is assumed that a Historic Resources Evaluation Report (HRER) will not be required, as there are not any anticipated built environment resources, other than Category 5 (NRHP ineligible bridges) in the project area.

Following completion and approval of the APE and detailed reports discussed above, a summary document (the HPSR) shall be generated in accordance with Caltrans/FHWA standards for Section 106 compliance with the NHPA. It is anticipated that the proposed project shall result in an HPSR with a finding that no properties eligible for listing on the NRHP or CRHR are present within the project's APE.

Deliverables: Draft and Final APE map, ASR (Finding of No Archaeological Resources Present), HRER (Finding of No Historic Resources Present), and HPSR (no properties requiring evaluation finding).

165.25 Draft Environmental Document

As previously described it is assumed that a combined EIR/EIS will be the appropriate environmental document for the project. The EIR/EIS will be prepared using the annotated outline on the Caltrans SER that is available at the time that the document is initiated. Each copy of the Draft Environmental Document will include External Quality Control Form and NEPA Checklist. It is assumed that the firm that prepares each technical study will be responsible for preparing the associated sections of the EIR/EIS. The following submittals are assumed to meet the Caltrans five step review process.

Deliverables*:*

Draft EIR/EIS (1) (electronically first to RCTC and then to Caltrans)
Draft EIR/EIS (2) and Comment Response Matrix (electronically to RCTC and Caltrans)
Draft EIR/EIS (3) and Comment Response Matrix (electronically to RCTC and Caltrans)
Draft EIR/EIS (4) and Comment Response Matrix (electronically to RCTC and Caltrans)
Draft EIR/EIS (5) and Comment Response Matrix (electronically to RCTC and Caltrans)
Final Draft EIR/EIS for approval to circulate and Comment/Response Matrix (electronically to RCTC and Caltrans)
25 hard copies and one electronic (pdf) final Draft EIR/EIS for availability (this includes the 15 copies for submittal to the State Clearinghouse)

Assumptions

- A No Build and two (2) build alternatives will be considered in the analysis.

- Cumulative impacts assessments will be prepared for each applicable environmental resource. These analyses will be consolidated into a Cumulative Impacts Analysis section of the EIR/EIS.
- Up to five (5) general areas of environmental resources (e.g., traffic, biology, cultural resources, visual, community, water resources, etc.) will be included in the cumulative impacts analysis. Up to ten (10) individual meetings may be required with technical specialists to complete the cumulative impacts analysis.
- Up to three (3) rounds of revision will be required to complete the Cumulative Impacts Section of the EIR/EIS.

Deliverables: Consolidated cumulative impacts analysis for the subject areas for which potential environmental impacts were identified.

165.25.10 Section 4(f)/6(f) Evaluation

It is assumed that all improvements would occur within the existing right of way and that impacts to Section 6(f) properties would not occur and that no 6(f) evaluation will be required. It is assumed that up to one Section 4(f) property (Butterfield Ranch Trail) will be addressed. It is assumed that a de minimis 4(f) will be appropriate and a full Section 4(f) evaluation will not be required. The Section 4(f) de minimis will be documented within the appropriate Appendix in the EIR/EIS and we will work with Caltrans and RCTC following identification of the preferred alternative to obtain the de minimis concurrence letter from the agency that is responsible for the 4(f) resource.

Deliverables: Section 4(f)/6(f) Appendix in EIR/EIS (no evaluation is assumed)

165.25.25 Prepare Second and Third Administrative Drafts of EIR/EIS

We will revise the Administrative Draft EIR/EIS based on comments received from RCTC, and Caltrans, and will submit a Second and Third Administrative Draft EIR/EIS to RCTC for their review. These Administrative Drafts of the EIR/EIS will include all information described above, as well as the Executive Summary, MMRP, and ECR. On receipt of comments from RCTC, we will revise the document accordingly and will submit the Administrative Draft EIR/EIS for concurrent RCTC and Caltrans review. A draft FHWA checklist will be included in the third submittal.

We will revise the document based on the comments received from RCTC, Caltrans, and FHWA on the third Administrative Draft EIR/EIS and will prepare the Proposed Draft EIR/EIS for review by RCTC. After review by RCTC, we will revise the Proposed Draft EIR/EIS and submit it to RCTC, Caltrans, and FHWA requesting approval to circulate the document for public review. The FHWA Checklist will be included in this submittal.

Deliverables: Electronic reviews will be accomplished for the Administrative Draft of EIR/EIS

165.25.30 Environmental Coordination

We will manage preparation of project-specific environmental resources, schedules, and information and will coordinate and review all technical environmental studies prior to inclusion in the EIR/EIS. Coordination with Caltrans and FHWA to obtain approval to circulate the EIR/EIS are also included in this task. Activities under this task will be performed in accordance with the Caltrans District 8 Environmental Quality Control Plan.

Deliverables: Establish and maintain schedule of environmental technical studies and environmental document review

175 CIRCULATE DED AND SELECT PREFERRED PROJECT ALTERNATIVE

175.05 DED Circulation

As part of the overall public outreach efforts, we will prepare a distribution list for the Draft EIR/EIS and will prepare the draft Notice of Completion/Notice of Availability (NOC/NOA). We will distribute the NOC and Draft EIR/EI; Caltrans will be responsible for publishing the NOA in the *Federal Register*. The Draft EIR/EIS distribution list will be based on the mailing list compiled for the scoping process and updated as appropriate based on correspondence received during preparation of the Draft EIR/EIS.

We will reproduce the Draft EIR/EIS and Technical Studies for public circulation via three media: 1) hard copy, 2) CD and 3) .PDF format for uploading to the web.

175.05.05 Master Distribution and Invitation Lists

We will utilize the mailing/distribution list prepared and maintained by our outreach consultant for inclusion in the Draft EIR/EIS.

Deliverables: Input to individuals and groups to be included on the distribution list.

175.05.10 Notices Regarding Public Hearing and Availability of Draft Environmental Document

We will prepare the Notice of Availability/Notice of Public Hearing (NOA/NPH) and a Notice of Availability for publication in the Federal Register (Caltrans transmits the draft EIR/EIS to U.S. EPA who publish the EIS Notice of Availability in the Federal Register). Since a public hearing is assumed to be held, the notice will also need to be published a second time at least one week prior to the public hearing. We will also prepare the Notice of Completion and Environmental Document Transmittal for sending to the State Clearinghouse along with copies of the EIR/EIS.

Deliverables:
Draft and Final NOA/NPH (assumed to be transmitted electronically with no hard copies)
Draft and Final NOA (assumed to be transmitted electronically with no hard copies)
Draft and Final Notice of Completion & Environmental Document Transmittal for submittal to SCH

175.05.15 DED Publication and Circulation

We will post the NOA/NPH at the Riverside County Clerk's office (a $50 filing fee has been assumed), and will send the necessary copies to the State Clearinghouse along with the Notice of Completion and Environmental Document Transmittal form. It is assumed that the technical studies will not be included in the availability but copies will be available if requested by anyone during the public availability period. We will also distribute hardcopies of the document and NOA/NPH to the availability locations (Caltrans, RCTC, libraries). A copy of the NOA/NPH to property owners and residences within a 500-foot radius of the proposed project

Deliverables:

Distribution of Draft EIR/EIS to availability locations
Filing with Riverside County Clerk
Distribution of Draft EIR/EIS to SCH (15 copies) & Local Distribution (10 copies)

175.10 Public Hearing

We will assist and attend two public hearings during the public review period for the Draft EIR/EIS. A third meeting may be held if deemed necessary by RCTC in conjunction with a regularly occurring meeting held for outreach with Temecula Valley residents. We will be responsible for coordinating and conducting the hearings and for preparing the necessary handouts, materials, and exhibits for the hearings. We will provide public hearing materials which include:

- Mailing/Distribution lists
- Hearing materials
- Reservations for Hearing location
- Documentation of attendance
- Recording of comments
- Public Hearing Plan
- Court Reporter
- Record of Public Hearing
- Refreshments
- Accommodations for special needs
- Any other items or logistics related to the public hearings

360 Degree Video

Computer generated 3D components for proposed improvements of select portions of the I-15 corridor from south of State Route 91 interchange to the Magnolia Avenue interchange will be created. We will align the proposed improvement with 360 degree panoramic video imagery so that they can be merged to illustrate the visual perspective of the proposed improvements. The 3D graphics will include new paving, lane striping, barriers, overhead signage and bridge structures as proposed in the locally preferred alternative.
The video will be formatted so that a viewer can observe the visible portion of the video playback by manipulating an appropriately equipped smartphone during playback.

Recommended locations included are:

- Northern Terminus both directions - up to 4 miles
- One Midpoint access location to show Ingress/Egress
- Southern terminus both directions - up to 4 miles
- One additional location (as determined by the team or RCTC as a point of interest)

Deliverables:

Attendance up to three (3) public hearings for public circulation of the Draft Environmental Document
Review and input to public scoping materials
360 degree video at up to four locations (specified above)

175.15 Public Comment Responses and Correspondence

At the close of the public availability period for the Draft EIR/EIS, We will review and respond to all comments received. In addition, we will attend a meeting with RCTC and Caltrans staff to review any written comments on the Draft Environmental Document that were received and to discuss potential responses to these comments, if the comments received warrant such a meeting. Otherwise, the comments will be responded to and incorporated directly into the Final EIR/EIS. If an excessive number of comments, comments from lawyers, comments requiring legal evaluation, or comments requiring new or extensive analyses are received then this will be discussed with RCTC.

Deliverables:
Responses to comments (included in Final EIR/EIS)

175.20 Project Preferred Alternative

Working with the PDT the preferred alternative will be identified and documented in the Final EIR/EIS. No deliverables are associated with this task. This information will be directly incorporated into the Final EIR/EIS.

Deliverables: Information regarding identification of preferred alternative (included in Final EIR/EIS)

180 PREPARE AND APPROVE PR & FINAL ED

180.05 Final Project Report

180.05.05 Updated Draft Project Repo

Upon completion of the Response to Comments on the Environmental Document, the Draft Project Report will be updated to reflect any changes to the project that resulted from the public review and comment period. A Draft Final Project Report will be submitted to RCTC and Caltrans for review and comment. Following receipt of one consolidated set of comments, a comment review workshop will be held with the respondents to review their comments and provide appropriate responses. A Final Project Report will be prepared and submitted for review and approval.

Deliverables: Draft and Final Project Report

180.05.10 Approved Project Report

Once the Final Project Report has been submitted for review and approval, the project manager or his designee will work with RCTC and Caltrans to obtain the appropriate signatures. If issues or questions arise during the approval phase, the HDR team will work with RCTC and/or Caltrans staff to answer any remaining questions, provide additional information, and obtain signatures as appropriate. Up to three (3) submittals (two review cycles) of the Final Project Report are anticipated.

Deliverables: Signed Project Report

180.05.15 Updated Storm Water Data Report

The Storm Water Data Report will be reviewed for consistency with current requirements and updated to incorporate necessary changes for the selected alternative only. Current Project

Report level requirements are anticipated for this effort. Up to three submittals (two review cycles) are anticipated.

Deliverables: Storm Water Data Report

180.05.20 Geometric Approval Drawings (GAD) for Selected Alternative

We will prepare geometric approval drawings (GAD) at a scale of 1" = 50' consistent with the Caltrans District 8 GAD strip plot format for the selected/preferred alternative from the Project Report. The GAD will include existing topographic and planimetric mapping, right-of-way lines, I-15 centerline, geometric layout, typical sections, traffic volumes, design designation, and a signature block.

We will design roadway geometry including horizontal and vertical geometry for ramps, connectors and cross streets, including profile and superelevation diagrams. Profiles and superelevation diagrams will be provided for the areas of mainline widening based on aerial topographic mapping and record drawing information. Conceptual grading using 2:1 or 4:1 slopes will be developed to establish preliminary right-of-way limits.

Typical cross sections will be prepared to illustrate lane and shoulders in the lane configurations and other basic cross sectional data. Truck turning templates will only be provided at intersections modified by the project.

Up to four (4) submittals (three review cycles) of the GADs are anticipated.

Deliverables: Geometric Approval Drawing

180.10.05 Approved Final Environmental Document

We will prepare a Screencheck Final EIR/EIS that will identify the preferred alternative and will include public comments on the Draft EIR/EIS and responses on environmental issues raised in the comments. Each submittal of the Final EIR/EIS will include the External Quality Control (QC) Certification and Environmental Document (ED) Review Checklist. Following review by RCTC and Caltrans of the Screencheck Final EIR/EIS, the document will be revised and an Administrative Final EIR/EIS (1) will be submitted, along with a Comment/Response matrix, and forwarded for RCTC and Caltrans review. Following this review the document will be revised and an Administrative Final EIR/EIS (2) will be prepared along with the Comment/Response matrix, and forwarded to RCTC and Caltrans for their NEPA Quality Control and Environmental Branch Chief Review. Following this review the document will be revised and an Administrative Final EIR/EIS (3) will be prepared along with the Comment/Response matrix, and forwarded to RCTC and Caltrans for concurrence and this document will be forwarded by the Caltrans District office to Caltrans Headquarters for Division of Environmental Analysis (DEA) and Legal Reviews.

To reduce iterations of the document, we will conduct a revision workshop with RCTC and Caltrans to facilitate the next review. Once revisions are incorporated into the document that address comments received from the Caltrans Headquarters and Caltrans Legal Reviews, a Pre-Approval Final EIR/EIS will be prepared along with the Comment/Response matrix, and forwarded for concurrence by RCTC and Caltrans District and Headquarters. Once concurred upon, the Final EIR/EIS signature page will be submitted to Caltrans for signature.

Upon signature of the cover sheet and approval to circulate, we will provide hard and electronic copies of the Final EIR/EIS. The electronic copy will be in Adobe Acrobat PDF format to allow for publication on the project website by our outreach consultant. We will utilize the update

mailing list (with commenter names and other changes), as prepared and maintained by our outreach consultant, for the Final EIR/EIS and distribute the document.

This scope of work assumes that we will prepare the cumulative impacts portion of the Draft EIR/EIS and will provide that for the inclusion in the document.

Deliverables:

Final EIR/EIS (1) (electronically first to RCTC and then to Caltrans)
Final EIR/EIS (2) and Comment Response Matrix (electronically to RCTC and Caltrans)
Final EIR/EIS (3) and Comment Response Matrix (electronically to RCTC and Caltrans)
Final EIR/EIS (4) and Comment Response Matrix (electronically to RCTC and Caltrans)
Final EIR/EIS (5) and Comment Response Matrix (electronically to RCTC and Caltrans)
Final EIR/EIS for approval to circulate and Comment/Response Matrix (electronically to RCTC and Caltrans)
25 hard copies and one electronic (pdf) Final EIR/EIS for availability
25 CD's with a PDF of Volumes 1 and 2 if needed

180.10.05.15 Section 4(f) Evaluation

We will review comments from Section 4(f) review agencies and general comments from the public review of the EIR/EIS and Section 4(f) Statement. The Section 4(f) Statement will be revised to incorporate comments as needed.

Assumptions

- Limited additional technical analysis is assumed to be required to respond to public comments on the Section 4(f) Statement. No new Section 4(f) resources are assumed to be identified between publication of the Draft EIR/EIS and preparation of the Final EIR.EIS
- No new project alternatives or Section 4(f) avoidance alternatives will be evaluated.
- Up to three revisions of the section will be prepared to produce the Final EIR/EIS Cumulative Impacts Analysis section.

Deliverables: Final Section 4(f) Statement

180.10.05.20 Findings

We will prepare the Findings of Fact in compliance with CEQA and the Caltrans SER. The Findings will be submitted along with, and reviewed with, the Final EIR/EIS.

Deliverables*:* Findings (to be submitted with, and reviewed with, the Final EIR/EIS)

180.10.05.25 Statement of Overriding Considerations

We will prepare the Statement of Overriding Considerations in compliance with CEQA and the Caltrans SER. The Statement of Overriding Considerations will be submitted along with, and reviewed with, the Final EIR/EIS.

Deliverables: Statement of Overriding Considerations (to be submitted with, and reviewed with, the Final EIR/EIS)

180.10.05.30 CEQA Certification

We will prepare the CEQA Certification in compliance with CEQA and the Caltrans SER. The CEQA Certification will be submitted along with, and reviewed with, the Final EIR/EIS.

Deliverables: CEQA Certification (to be submitted with, and reviewed with, the Final EIR/EIS)

In addition, the following services will be completed as part of the Final EIR/EIS task and these services correspond to WBS 180.10.05.70 Mitigation Measures

180.10.10 Pubic Distribution of FED and Respond to Comments

A Notice of Availability for the Final environmental document will be prepared for circulation of the FED. Noticing, notice publication, and distribution of the document will be prepared. Following the public availability we will respond to any comments received and these responses will be incorporated into the Record of Decision (ROD). It is assumed that the responses will be reviewed as part of the ROD. If an excessive number of comments, comments from lawyers, comments requiring legal evaluation, or comments requiring new or extensive analyses are received then this will be discussed with RCTC.

Deliverables: Notice of Availability & Draft and Final response to comments

180.15 Completed Environmental Document

We will prepare a Record of Decision (ROD) that will include, as appropriate, identification of the selected alternative, the alternatives considered, the rationale for identification of the selected alternative, summary of beneficial environmental impacts, summary of adverse environmental impacts and mitigation, monitoring and enforcement program, and response to comments on the final EIS. The ROD will be submitted to RCTC and then to Caltrans for review and for publication in the Federal Register by FHWA (to be transmitted by Caltrans).

Deliverables: Draft and Final Record of Decision

180.15.05 Record of Decision (NEPA)

We will prepare a draft and final Record of Decision (ROD) for review by RCTC and Caltrans and for signature no sooner than thirty (30) days after publication of the Final EIS notice.

Deliverables: Draft and Final ROD (10 hardcopies each and PDF of final)

180.15.10 Notice of Determination (CEQA)

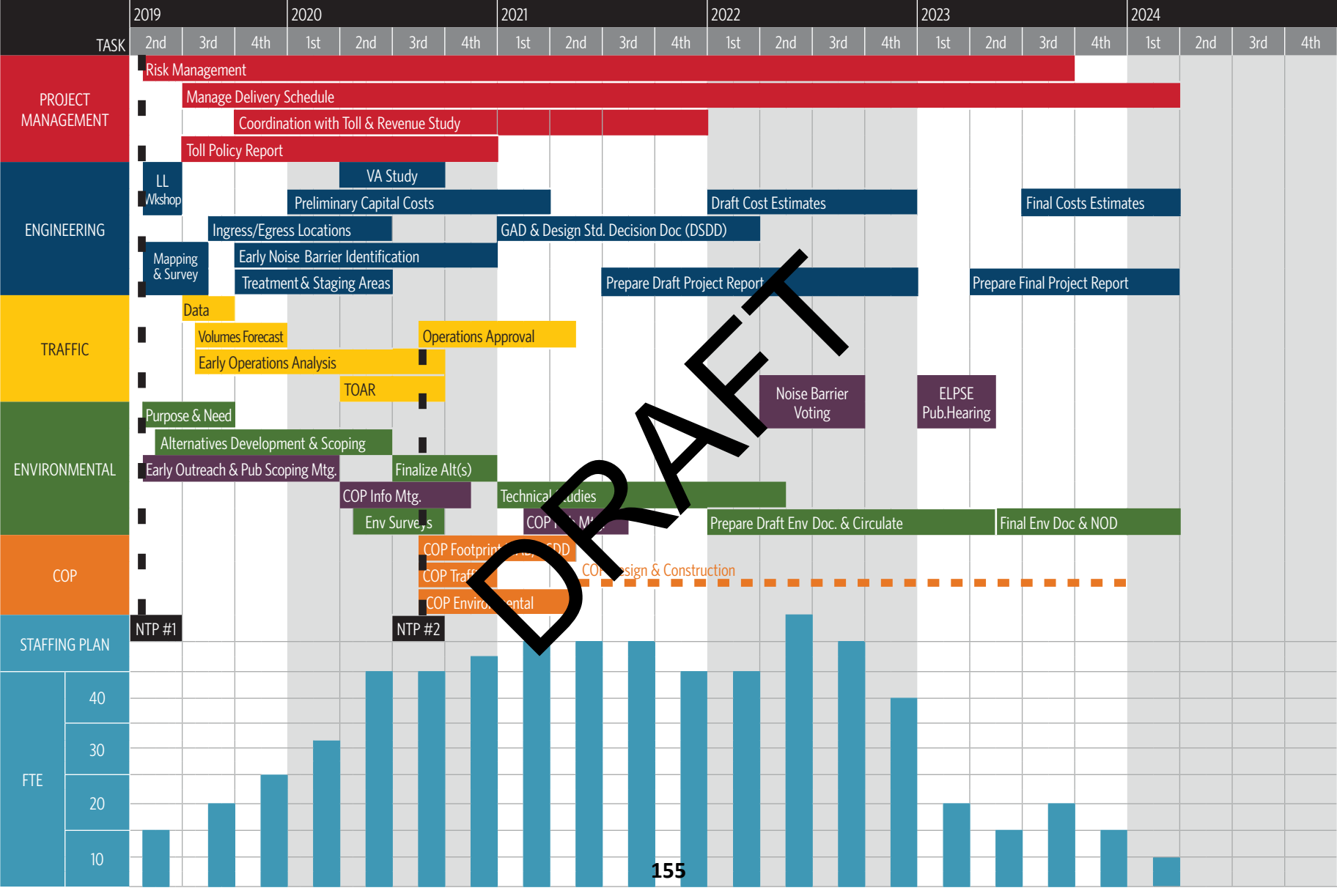
We will prepare the Notice of Determination (NOD) in compliance with CEQA. It is assumed that we will file the NOD with the Office of Planning and Research (OPR) on behalf of Caltrans. The NOD would also be posted with the Riverside County Clerk (a $50 filing fee has been assumed). Along with the NOD a California Department of Fish and Game (CDFG) filing fee would also be filed. The CDFG filing fee has been included in the submitted cost estimate and is assumed to not exceed $3,500.

Deliverables: Draft and Final NOD (submitted electronically for review) and hardcopy to the State Clearinghouse

EXHIBIT “B”

SCHEDULE OF SERVICES

[attached behind this page]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PROJECT MANAGEMENT
Risk Management
Manage Delivery Schedule
Coordination with Toll & Revenue Study
Toll Policy Report
ENGINEERING
LL Wkshop
VA Study
Preliminary Capital Costs
Draft Cost Estimates
Final Costs Estimates
Ingress/Egress Locations
GAD & Design Std. Decision Doc (DSDD)
Mapping & Survey
Early Noise Barrier Identification
Treatment & Staging Areas
Prepare Draft Project Report
Prepare Final Project Report
TRAFFIC
Data
Volumes Forecast
Operations Approval
Early Operations Analysis
TOAR
Noise Barrier Voting
ELPSE Pub.Hearing
ENVIRONMENTAL
Purpose & Need
Alternatives Development & Scoping
Early Outreach & Pub Scoping Mtg.
Finalize Alt(s)
COP Info Mtg.
Technical Studies
Env Surveys
Prepare Draft Env Doc. & Circulate
Final Env Doc & NOD
COP
COP Footprint
COP Traffic
COP Design & Construction
COP Environmental
NTP #1
NTP #2
STAFFING PLAN
FTE
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DRAFT

EXHIBIT “C”

COMPENSATION PROVISIONS

[attached behind this page]

EXHIBIT “C”

COMPENSATION SUMMARY SHEET

FIRM	COST
HDR Engineering	$15,544,309.49
A-Tech Consulting	$157,964.21
CityWorks	$811,676.51
Fehr & Peers	$817,680.16
Guida Surveying	$373,596.68
HNTB	$314,738.95
ICF	$4,472,410.21
IDC Consulting Engineer	$233,473.57
Leighton Consulting	$410,764.62
Michael Baker International	$371,485.75
Paleo Solutions	$11,104.15
The Alliance Group	$2,207,301.40
Westbound Communications	$401,015.29
SUBTOTAL	**$26,127,520.99**
OTHER DIRECT COSTS	**$192,490.00**
TOTAL COST PROPOSAL	**$26,320,010.99**

EXHIBIT "D"

FEDERAL DEPARTMENT OF TRANSPORTATION
FHWA AND CALTRANS REQUIREMENTS

[attached behind this page]

1. STATEMENT OF COMPLIANCE.

A. Consultant's signature affixed herein shall constitute a certification under penalty of perjury under the laws of the State of California that CONSULTANT has, unless exempt, complied with, the nondiscrimination program requirements of Government Code Section 12990 and Title 2, California Administrative Code, Section 8103.

B. During the performance of this Agreement, Consultant and its subconsultants shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (e.g., cancer), age (over 40), marital status, and denial of family care leave. Consultant and subconsultants shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Consultant and subconsultants shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12990 (a-f) et seq.) and the applicable regulations promulgated there under (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Consultant and its subconsultants shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other Agreement.

C. If this Agreement is federally funded, the Consultant shall comply with regulations relative to Title VI (nondiscrimination in federally-assisted programs of the Department of Transportation – Title 49 Code of Federal Regulations, Part 21 - Effectuation of Title VI of the 1964 Civil Rights Act). Title VI provides that the recipients of federal assistance will implement and maintain a policy of nondiscrimination in which no person in the state of California shall, on the basis of race, color, national origin, religion, sex, age, disability, be excluded from participation in, denied the benefits of or subject to discrimination under any program or activity by the recipients of federal assistance or their assignees and successors in interest.

D. If this Agreement is federally funded, the Consultant, with regard to the work performed by it during the Agreement shall act in accordance with Title VI. Specifically, the Consultant shall not discriminate on the basis of race, color, national origin, religion, sex, age, or disability in the selection and retention of Subconsultants, including procurement of materials and leases of equipment. The Consultant shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the U.S. DOT's Regulations, including employment practices when the Agreement covers a program whose goal is employment.

2. DEBARMENT AND SUSPENSION CERTIFICATION

CONSULTANT's signature affixed herein, shall constitute a certification under penalty of perjury under the laws of the State of California, that CONSULTANT has complied with Title 2 CFR, Part 180, "OMB Guidelines to Agencies on Government wide Debarment and Suspension (nonprocurement)", which certifies that he/she or any person associated therewith in the capacity of owner, partner, director, officer, or manager, is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency; has not been suspended, debarred, voluntarily excluded, or determined ineligible by any federal agency within the past three (3) years; does not have a proposed debarment pending; and has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three (3) years. Any exceptions to this certification must be disclosed to COMMISSION.

B. Exceptions will not necessarily result in denial of recommendation for award, but will be considered in determining CONSULTANT responsibility. Disclosures must indicate to whom exceptions apply, initiating agency, and dates of action.

C. Exceptions to the Federal Government Excluded Parties List System maintained by the General Services Administration are to be determined by the Federal highway Administration.

3. DISCRIMINATION

The Commission shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT-assisted contract or in the implementation of the Caltrans DBE program or the requirements of 49 CFR Part 26. The Commission shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts.

Consultant or subcontractor shall not discriminate on the basis of race, color, national origin, of sex in the performance of this Agreement. Consultant or subcontractor shall carry out applicable requirements of 49 CFR Part 26 and the Caltrans DBE program in the award and administration of DOT-assisted contracts, as further set forth below. Failure by the Consultant or subcontractor to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy, as the Commission deems appropriate.

4. PROMPT PAYMENT

Consultant agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than 10 days from the receipt of each payment the prime contractor receives from the Commission. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Commission. This clause applies to both DBE and non-DBE subcontractors.

5. RELEASE OF RETAINAGE

No retainage will be withheld by the Agency from progress payments due the prime consultant. Retainage by the prime consultant or subconsultants is prohibited, and no retainage will be held by the prime consultant from progress due subconsultants. Any violation of this provision shall subject the violating prime consultant or subconsultants to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies, otherwise available to the prime consultant or subconsultant in the event of a dispute involving late payment or nonpayment by the prime consultant or deficient subconsultant performance, or noncompliance by a subconsultant. This provision applies to both DBE and non-DBE prime consultants and subconsultants.

6. LEGAL REMEDIES

In addition to those contract remedies set forth under relevant provisions of California law, either Party to this Agreement may, where applicable, seek legal redress for violations of this Agreement pursuant to the relevant provisions of 49 C.F.R. Parts 23 and 26, to the relevant federal or state statutory provisions governing civil rights violations, and to the relevant federal and state provisions governing false claims or “whistleblower” actions, as well as any and all other applicable federal and state provisions of law.

The Consultant shall include a provision to this effect in each of its agreements with its subcontractors.

7. DBE PARTICIPATION

Caltrans has developed a statewide DBE program pursuant to 49 C.F.R. Part 26. The requirements and procedures, as applicable, of the Caltrans DBE program are hereby incorporated by reference into this Agreement. Even if no DBE participation will be reported, Consultant shall complete Exhibits "E" of this Agreement in compliance with the Caltrans DBE program, and a final utilization report in the form provided by the Commission.

A. This Agreement is subject to Title 49, Part 26 of the Code of Federal Regulations entitled "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs." By obtaining DBE participation on this Agreement, Consultant will assist Caltrans in meeting its federally mandated statewide overall DBE goal.

B. This Agreement has a ____ DBE goal. The Consultant must meet the goal by committing DBE participation or document a good faith effort to meet the goal. If a DBE subconsultant is unable to perform, the Consultant must make a good faith effort to replace him/her with another DBE subconsultant, if the goal is not otherwise met. A DBE is a firm meeting the definition of a DBE as specified in 49 CFR.

C. DBE and other small businesses (SB), as defined in Title 49 CFR, Part 26 are encouraged to participate in the performance of agreements financed in whole or in part with federal funds. The Consultant, subrecipient or subconsultant shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The Consultant shall carry out applicable requirements of 49 CFR, Part 26 in the award and administration of US DOT- assisted agreements. Failure by the contractor to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the Commission, Caltrans or the Department of Transportation deems appropriate.

D. Any subcontract entered into as a result of this Agreement shall contain all of the provisions of this section.

E. A DBE may be terminated only with prior written approval from the Commission and only for the reasons specified in 49 CFR 26.53(f). Prior to requesting Commission consent for the termination, the prime consultant must meet the procedural requirements specified in 49 CFR 26.53(f).

8. DBE PARTICIPATION GENERAL INFORMATION

It is Consultant's responsibility to be fully informed regarding the requirements of 49 CFR, Part 26, and the Caltrans DBE program. Particular attention is directed to the following:

A. A DBE must be a small business firm defined pursuant to 13 CFR 121 and be certified through the California Unified Certification Program (CUCP).

B. A certified DBE may participate as a prime contractor, subcontractor, joint venture partner, as a vendor of material or supplies, or as a trucking company.

C. A DBE joint-venture partner must be responsible for specific contract items of work or clearly defined portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The DBE joint venture partner

must share in the capital contribution, control, management, risks and profits of the joint-venture commensurate with its ownership interest.

D. A DBE must perform a commercially useful function, pursuant to 49 CFR 26.55 that is, must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work, as more fully described in section 8 below.

E. The Consultant shall list only one subcontractor for each portion of work as defined in the Consultant's bid/proposal and all DBE subcontractors should be listed in the Consultant's bid/cost proposal list of subcontractors.

F. A Consultant who is a certified DBE is eligible to claim all of the work in the Agreement toward the DBE participation except that portion of the work to be performed by non-DBE subcontractors.

9 . COMMERCIALLY USEFUL FUNCTION

A. A DBE performs a commercially useful function when it is responsible for execution of the work of the Agreement and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible with respect to materials and supplies used on the Agreement, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, evaluate the amount of work subcontracted, industry practices; whether the amount the firm is to be paid under the Agreement is commensurate with the work it is actually performing, and other relevant factors.

B. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, Agreement, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, examine similar transactions, particularly those in which DBEs do not participate.

C. If a DBE does not perform or exercise responsibility for at least thirty percent of the total cost of its Agreement with its own work force, or the DBE subcontracts a greater portion of the work of the Agreement than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that it is not performing a commercially useful function.

10. DBE CERTIFICATION AND DE-CERTIFICATION STATUS

If a DBE subcontractor is decertified during the life of the Agreement, the decertified subcontractor shall notify the Contractor in writing with the date of de-certification. If a

subcontractor becomes a certified DBE during the life of the Agreement, the subcontractor shall notify the Contractor in writing with the date of certification. Any changes should be reported to the Commission's Contract Administrator within 30 days.

11. DBE RECORDS

A. The Contractor shall maintain records of materials purchased and/or supplied from all subcontracts entered into with certified DBEs. The records shall show the name and business address of each DBE or vendor and the total dollar amount actually paid each DBE or vendor, regardless of tier. The records shall show the date of payment and the total dollar figure paid to all firms. DBE prime Contractors shall also show the date of work performed by their own forces along with the corresponding dollar value of the work.

In addition to all other requirements, Consultant shall complete and submit, on a monthly basis, the Monthly DBE Payment form (Caltrans Exhibit 9-F of Chapter 9 of the LAPM).

B. Upon completion of the Agreement, a summary of these records shall be prepared and submitted on the most current version of the form entitled, "Final Report-Utilization of Disadvantaged Business Enterprises (DBE)," CEM- 2402F (Exhibit 17-F in Chapter 17 of the LAPM), certified correct by the Contractor or the Contractor's authorized representative and shall be furnished to the Commission's Contract Administrator with the final invoice. Failure to provide the summary of DBE payments with the final invoice will result in twenty-five percent (25%) of the dollar value of the invoice being withheld from payment until the form is submitted. The amount will be returned to the Contractor when a satisfactory "Final Report Utilization of Disadvantaged Business Enterprises (DBE)" is submitted to the Commission's Contract Administrator.

a. Prior to the fifteenth of each month, the Contractor shall submit documentation to the Commission's Contract Administrator showing the amount paid to DBE trucking companies. The Contractor shall also obtain and submit documentation to the Commission's Contract Administrator showing the amount paid by DBE trucking companies to all firms, including owner-operators, for the leasing of trucks. If the DBE leases trucks from a non-DBE, the Contractor may count only the fee or commission the DBE receives as a result of the lease arrangement.

b. The Contractor shall also submit to the Commission's Contract Administrator documentation showing the truck number, name of owner, California Highway Patrol CA number, and if applicable, the DBE certification number of the truck owner for all trucks used during that month. This documentation shall be submitted on the Caltrans "Monthly DBE Trucking Verification," CEM-2404(F) form provided to the Contractor by the Commission's Contract Administrator.

12. REPORTING MATERIAL OR SUPPLIES PURCHASED FROM DBEs

When Reporting DBE Participation, Material or Supplies purchased from DBEs may count as follows:

A. If the materials or supplies are obtained from a DBE manufacturer, 100 % of the cost of the materials or supplies will count toward the DBE participation. A DBE manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises, the materials, supplies, articles, or equipment required under the Agreement and of the general character described by the specifications.

B. If the materials or supplies purchased from a DBE regular dealer, count 60 % of the cost of the materials or supplies toward DBE goals. A DBE regular dealer is a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Agreement, are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a DBE regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a DBE regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business provided in this section.

C. If the person both owns and operates distribution equipment for the products, any supplementing of regular dealers' own distribution equipment, shall be by a long-term lease agreement and not an ad hoc or Agreement-by-Agreement basis. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not DBE regular dealers within the meaning of this section.

D. Materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, will be limited to the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on the job site, provided the fees are reasonable and not excessive as compared with fees charged for similar services.

13. REPORTING PARTICIPATION OF DBE TRUCKING COMPANIES

When Reporting DBE Participation, Participation of DBE trucking companies may count as follows:

A. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible.

B. The DBE must itself own and operate at least one fully licensed, insure, and operational truck used on the Agreement.

C. The DBE receives credit for the total value of the transportation services it provides on the Agreement using trucks it owns, insures, and operates using drivers it employs.

D. The DBE may lease trucks from another DBE firm including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Agreement.

E. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by the DBE.

F. For the purposes of this section, a lease must indicate that the DBE has exclusive use and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, as long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

14. DEBARMENT, SUSPENSION AND OTHER INELIGIBILITY AND VOLUNTARY EXCLUSION

In accordance with 49 CFR Part 29, which by this reference is incorporated herein, Consultant's subconsultants completed and submitted the Certificate of subconsultant Regarding Debarment, Suspension and Other Ineligibility and Voluntary Exclusion as part of the Consultant's proposal. If it is later determined that Consultant's subconsultants knowingly rendered an erroneous Certificate, the Commission may, among other remedies, terminate this Agreement.

15. ENVIRONMENTAL COMPLIANCE

A. Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and subgrants of amounts in excess of $100,000).

B. Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

16. NATIONAL LABOR RELATIONS BOARD CERTIFICATION

In accordance with Public Contract Code Section 10296, and by signing this Agreement, Consultant certifies under penalty of perjury that no more than one final unappealable finding of contempt of court by a federal court has been issued against Consultant within the immediately preceding two-year period, because of Consultant's failure to comply with an order of a federal court that orders Consultant to comply with an order of the National Labor Relations Board.

EXHIBIT “E”

CONSULTANT DBE COMMITMENT

[attached behind this page]

EXHIBIT 10-O1 CONSULTANT PROPOSAL DBE COMMITMENT

1. Local Agency: Riverside County Transportation Commission 2. Contract DBE Goal: 13%

3. Project Description: Interstate 15 Express Lanes Project - Southern Extension

4. Project Location: Cajalco Road to SR-74

5. Consultant's Name: HDR Engineering, Inc. 6. Prime Certified DBE: ☐

7. Description of Work, Service, or Materials Supplied	8. DBE Certification Number	9. DBE Contact Information	10. DBE %
Public Outreach and Public Information Services, Technical Editing, Rights-of-entry letters	CUCP #42549	CityWorks 1214 Mohave Drive, Colton, CA 92324 Michele McKinney 951.897.0897	2.0%
Advanced Planning Study, Wall Design, and Related Cost Estimates to Support PA/ED	CUCP #27413	IDC Consulting Engineers, Inc. 300 S. Harbor Blvd, Suite 710, Anaheim, CA 92805 Wendy Li, PE 909.451.1338	1.5%
Paleontological Resources	CUCP #37411	Paleo Solutions 911 S. Primrose Ave, Unit N, Monrovia, CA91016 Geraldine Aron, Principal 562.818.7713	0.1%
Utility Identification, Drainage Design, and Related Cost estimating to Support Facility Design for PA/ED	CUCP #41797	The [illegible] Group Enterprise, Inc. 3699 Wilshire Blvd, Suite 1240, Los Angeles, CA 90010 Andy Duong, P[illegible] 323.609.6100	8.0%
Field Sampling, Traffic Control, Lab Testing, and HazMat Reports for Lead Based Paint / Asbestos Containing Material	CUCP #41893	A-Tech Consulting 17[illegible]W Katella, Suite 112, Orange, CA 92867 Bernadette Guerrero 714.221.6378	1.5%

Local Agency to Complete this Section

17. Local Agency Contract Number:

18. Federal-Aid Project Number:

19. Proposed Contract Execution Date:

11. TOTAL CLAIMED DBE PARTICIPATION 13.1 %

Local Agency certifies that all DBE certifications are valid and information on this form is complete and accurate.

20. Local Agency Representative's Signature

21. Date

22. Local Agency Representative's Name

23. Phone

24. Local Agency Representative's Title

IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Written confirmation of each listed DBE is required.

12. Preparer's Signature

13. Date: January 28, 2019

14. Preparer's Name: Mark Hager, PE

15. Phone: 951.320.7300

16. Preparer's Title: Project Manager

DISTRIBUTION: Original – Included with consultant's proposal to local agency.

EXHIBIT “F”

DISCLOSURE OF LOBBYING ACTIVITIES

[attached behind this page]

EXHIBIT 10-Q DISCLOSURE OF LOBBYING ACTIVITIES

COMPLETE THIS FORM TO DISCLOSE LOBBYING ACTIVITIES PURSUANT TO 31 U.S.C. 1352

1. Type of Federal Action:

[a] a. contract
b. grant
c. cooperative agreement
d. loan
e. loan guarantee
f. loan insurance

2. Status of Federal Action:

[a] a. bid/offer/application
b. initial award
c. post-award

3. Report Type:

[a] a. initial
b. material change

For Material Change Only:
year ____ quarter _____
date of last report _____

4. Name and Address of Reporting Entity

[■] Prime [ ] Subawardee
Tier _____, if known

Congressional District, if known

5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:
HDR Engineering, Inc.
2280 Market St, Suite 100
Riverside, CA 92501
Congressional District, if known

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, if applicable _____

8. Federal Action Number, if known:

9. Award Amount, if known:

10. Name and Address of Lobby Entity
(If individual, last name, first name, MI)

11. Individuals Performing Services
(including address if different from No. 10)
(last name, first name, MI)

(attach Continuation Sheet(s) if necessary)

12. Amount of Payment (check all that apply)
$ 0 [ ] actual [ ] planned

13. Form of Payment (check all that apply)
[ ] a. cash
[ ] b. in-kind; specify: nature _____
value _____

14. Type of Payment (check all that apply)
[ ] a. retainer
[ ] b. one-time fee
[ ] c. commission
[ ] d. contingent fee
[ ] e. deferred
[ ] f. other, specify _____

15. Brief Description of Services Performed or to be performed and Date(s) of Service, including officer(s), employee(s), or member(s) contacted, for Payment Indicated in Item 12:

(attach Continuation Sheet(s) if necessary)

16. Continuation Sheet(s) attached: Yes [ ] No [■]

17. Information requested through this form is authorized by Title 31 U.S.C. Section 1352. This disclosure of lobbying reliance was placed by the tier above when his transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semiannually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: [signature]
Print Name: Kip D. Field, PE
Title: Vice President
Telephone No.: 951.320.7300 Date: 01/28/2019

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Standard Form - LLL

Federal Use Only:

Standard Form LLL Rev. 04-28-06

Distribution: Orig- Local Agency Project Files

AGENDA ITEM 9E

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Western Riverside County Programs and Projects Committee David Thomas, Toll Project Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Agreement with the Orange County Transportation Authority for the 15/91 Express Lanes Connector Project Design-Build Phase

WESTERN RIVERSIDE COUNTY PROGRAMS AND PROJECTS COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to:

1) Approve Agreement No. 19-31-067-00 with Orange County Transportation Authority (OCTA) for reimbursement for closure of the OCTA 91 Express Lanes in support of the Interstate 15/State Route 91 Express Lanes Connector Project (15/91 ELC) in the amount of $398,000, plus a contingency amount of $39,000, for a total amount not to exceed $437,000;
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement on behalf of the Commission;
3) Authorize the Executive Director or designee to approve contingency work up to the total amount not to exceed as required for the project; and
4) Authorize the Executive Director or designee to approve future non-funding amendments to this agreement.

BACKGROUND INFORMATION:

In April 2017 Governor Brown signed SB 132, which appropriated $427 million to the Riverside County Transportation Efficiency Corridor for five projects. SB 132 allocated $180 million to the 15/91 ELC project. The 15/91 ELC will provide a tolled express lanes connector between the existing RCTC 91 Express Lanes and the future I-15 Express Lanes to the north of SR-91 (Figure 1 Vicinity Map).

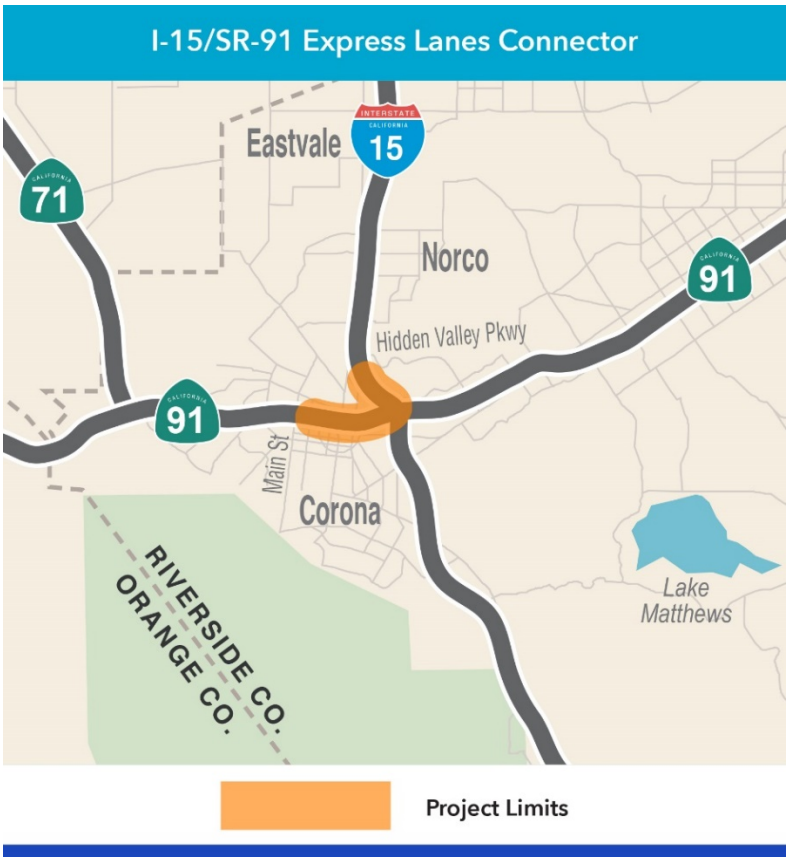


Figure 1: 15/91 Express Lanes Connector Project Vicinity Map

Since November 2018, staff has been working closely with OCTA to develop a reimbursement agreement for closure of the OCTA 91 Express Lanes. This agreement allows the Commission to make improvements to I-15 and SR-91 and assigns responsibilities between OCTA and the Commission during the design and construction of the project. The reimbursement for closure of the OCTA 91 Express Lanes will be paid with project funds provided from SB 132 funds and/or RCTC 91 Express Lanes toll revenue.

DISCUSSION:

The closure of the OCTA 91 Express Lanes will allow the expedited and cost-efficient construction of SR-91 improvements related to the 15/91 ELC project. These closures will result in loss of toll revenue for OCTA that will be compensated by the Commission as described in the attached draft agreement. The costs associated with this agreement cover the cost of weekday and/or weekend closures of the OCTA 91 Express Lanes in the westbound and eastbound directions. The closure of the OCTA 91 Express Lanes will be permitted during nighttime only when the potential toll revenue on the OCTA 91 Express Lanes is the lowest, thus minimizing the costs to the 15/91 ELC project. The Commission-authorized contingency will cover any additional unanticipated permitted nightly closures required for the project. The design-build contract approach currently under development anticipates reimbursement of these costs paid to OCTA by the design-build contractor. Although this does not change the fact that these costs will ultimately be paid for by

the 15/91 ELC project, it does help to minimize the number of closures and costs since this will be part of a competitive procurement.

RECOMMENDATION:

Staff recommends approval of the agreement between the Commission and OCTA in the amount of $398,000, plus a contingency amount of $39,000, for a total amount not to exceed $437,000.

Further, authorization is requested for the Chair or Executive Director to execute the agreement on behalf of the Commission, for the Executive Director or designee to approve contingency work up to the total not to exceed amount as required for the project, authorize the Executive Director or designee to approve future non-funding amendments to this agreement, and forward the agreement to Commission for final action.

<table>
<tr><th colspan="7">Financial Information</th></tr>
<tr><td colspan="2">In Fiscal Year Budget:</td><td>Yes
N/A</td><td>Year:</td><td>FY 2019/2020
FY 2020/2021+</td><td>Amount:</td><td>$200,000
$237,000</td></tr>
<tr><td colspan="2">Source of Funds:</td><td colspan="3">SB 132 Funds and 91 Express Lanes Toll Revenue</td><td>Budget Adjustment:</td><td>No
N/A</td></tr>
<tr><td colspan="2">GL/Project Accounting No.:</td><td colspan="5">003039 81602 00000 0000 605 31 81601</td></tr>
<tr><td colspan="2">Fiscal Procedures Approved:</td><td colspan="3">Theresia Trevino</td><td>Date:</td><td>04/12/2019</td></tr>
</table>

Attachment: Draft Agreement No. 19-31-067-00 with OCTA

Agreement No. 19-31-067-00

AGREEMENT BETWEEN ORANGE COUNTY TRANSPORTATION AUTHORITY

AND

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

FOR REIMBURSEMENT FOR CLOSURE OF 91 EXPRESS LANES

This Agreement ("Agreement") is dated _____, 2019 and is by and between the Orange County Transportation Authority ("OCTA") and the Riverside County Transportation Commission ("RCTC"). OCTA and RCTC are individually referred to as a "Party" and collectively referred to as the "Parties."

Recitals

1. WHEREAS, OCTA is the owner and operator of the 91 Express Lanes in Orange County "Toll Facility"; and

2. WHEREAS, RCTC is the owner and operator of the 91 Express Lanes in Riverside County and as part of the design-build delivery of the Interstate 15 Express Lanes Project (ELP) and Interstate 15/State Route 91 Express Lanes Connector Project (ELC) has requested the closure of the OCTA Toll Facility for approximately sixty (60) nights in the Eastbound direction and approximately sixteen (16) nights in the Westbound direction for the purpose of installing and testing a new Variable Tolling Message Sign (VTMS) along Eastbound State Route 91 (SR 91), construction of the ELC Project, and other associated work ("Work") in Orange County; and

3. WHEREAS, forty (40) of the Toll Facility closures in the Eastbound direction are planned to occur in the first and second quarters of 2020 and twenty (20) of the Toll Facility closures in the Eastbound direction are planned to occur in 2021/2022 from the hours of 9:00 p.m. through 5:00 a.m.; and

4. WHEREAS, ten (10) of the Toll Facility closures in the Westbound direction are planned to occur in the first quarter of 2020 and six (6) of the Toll Facility closures in the Westbound direction are planned to occur in 2021/2022 from the hours of 8:00 p.m. through 4:00 a.m. on weekday nights (Sunday from 8:00 p.m. through Friday at 4:00 a.m.) and from the hours of 9:00 p.m. through 5:00 a.m. on the weekend nights (Friday at 9:00 p.m. through Sunday at 5:00 a.m.); and

5. WHEREAS, the Parties acknowledge that the closure of the Toll Facility will have a financial impact on OCTA through lost toll revenues; and

6. WHEREAS, RCTC has agreed to reimburse OCTA for the lost toll revenues associated with the requested closure pursuant to the terms of this Agreement.

Terms and Conditions

NOW, THEREFORE, in consideration of the mutual promises herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Grant of Closures – OCTA hereby agrees to allow closure of the Eastbound lanes of the Toll Facility for approximately forty (40) nights from 9:00 p.m. through 5:00 a.m. in the first and second quarter of 2020 and closure of the Westbound lanes of the Toll Facility for approximately ten (10) nights from 8:00 p.m. through 4:00 a.m. on weekday nights and from 9:00 p.m. through 5:00 a.m. on weekend nights in the first quarter of 2020 in order for RCTC and/or its contractors to install and test a new VTMS along Eastbound SR 91 in Orange County. OCTA hereby agrees to allow closure of the Eastbound lanes of the Toll Facility for approximately twenty (20) nights from 9:00 p.m. through 5:00 a.m. in 2021/2022 and closure of the Westbound lanes of the Toll Facility for approximately six (6) nights from 8:00 p.m. through 4:00 a.m. on weekday nights and from 9:00 p.m. through 5:00 a.m. on weekend nights in 2021/2022 in order for RCTC and/or its contractors to construct the ELC Project. RCTC and/or its contractors may access the Toll Facility during the above referenced hours, herein referenced as "Permitted Closures", to perform the required Work.

2. Payment

(a) In consideration for the closures of the Toll Facility, RCTC agrees to pay OCTA pursuant to the following schedule:

Eastbound Direction

For the Eastbound Direction, the "Weekday" is Sunday from 9:00 pm through Friday at 5:00 am.

The "Weekend" is Friday from 9:00pm to Sunday at 5:00 am.

(Q1/Q2 2020)		
Permitted Weekday Closure	9:00 pm to 5:00 am	$3,000.00/night
Permitted Weekend Closure	9:00 pm to 5:00 am	$5,200.00/night
Unpermitted Closure (Weekday or Weekend)	5:01 am to 8:59 pm	$22,600/for every partial or full 10 minute increment[1]
(2021/2022)		
Permitted Weekday Closure	9:00 pm to 5:00 am	$3,900.00/night
Permitted Weekend Closure	9:00 pm to 5:00 am	$6,800.00/night
Unpermitted Closure (Weekday or Weekend)	5:01 am to 8:59 pm	$22,600/for every partial or full 10 minute increment[1]

Westbound Direction

For the Westbound Direction, the "Weekday" is Sunday from 8:00 pm through Friday at 4:00 am.

The "Weekend" is Friday from 9:00 pm to Sunday at 5:00 am.

[1] Closures during this period are not permitted, unless otherwise approved in writing by OCTA. Unpermitted Closure amounts shown are for each 10 minute period (or portion thereof) the closure continues beyond the Permitted Closure period.

(Q1 2020)		
Permitted Weekday Closure	8:00 pm to 4:00 am	$3,000.00/night
Permitted Weekend Closure	9:00 pm to 5:00 am	$1,400.00/night
Unpermitted Weekday Closure:		
	Monday 4:01 am to 7:59 pm Tuesday 4:01 am to 7:59 pm Wednesday 4:01 am to 7:59 pm Thursday 4:01 am to 7:59 pm Friday 4:01 am to 8:59 pm	$22,600/for every partial or full 10 minute increment[1]
Unpermitted Weekend Closure :		
	Saturday 5:01 am to 8:59 pm Sunday 5:01 am to 7:59 pm	$22,600/for every partial or full 10 minute increment[1]
(2021/2022)		
Permitted Weekday Closure	8:00 pm to 4:00 am	$3,900.00/night
Permitted Weekend Closure	9:00 pm to 5:00 am	$1,800.00/night
Unpermitted Weekday Closure :		
	Monday 4:01 am to 7:59 pm Tuesday 4:01 am to 7:59 pm Wednesday 4:01 am to 7:59 pm Thursday 4:01 am to 7:59 pm Friday 4:01 am to 8:59 pm	$22,600/for every partial or full 10 minute increment[1]
Unpermitted Weekend Closure :		
	Saturday 5:01 am to 8:59 pm Sunday 5:01 am to 7:59 pm	$22,600/for every partial or full 10 minute increment[1]

RCTC agrees to pay OCTA all amounts due and owing within thirty (30) days of the receipt of a written request for payment from OCTA.

(b) RCTC has allocated the not to exceed sum of $398,000 for Permitted Closures under this Agreement. Permitted Closures shall not exceed the foregoing sum without written approval of RCTC's Executive Director.

3. Performance of Work – RCTC shall perform all Work, and shall ensure its contractors perform all Work, in accordance with the following:

(a) All Work shall be at the sole cost and expense of RCTC and/or its contractors.

(b) RCTC and its contractors shall take all reasonable steps to minimize any impacts to OCTA's operations, including, without limitation, conducting all Work on the Toll Facility only between the Permitted Closure hours during the timeframes identified in Section 1 above.

(c) RCTC or its contractors shall acquire all applicable governmental permits, approvals and other authorizations required under all applicable federal, state and local laws, regulations, orders and ordinances prior to conducting the Work. All Work shall be conducted in accordance with all (i) applicable federal, state and local laws, regulations, rules, orders and ordinances, (ii) all industry standards, and (iii) all additional standards as reasonably required by OCTA.

(d) RCTC and/or its contractors, at their sole cost and expense, shall before the end of any closure promptly remove from the Toll Facility all equipment and any soil, material and waste generated during the Work. OCTA shall not be identified as the generator of any such soil, material or waste on any manifests or similar documents generated in connection with the Work; provided, however, that this provision shall not be construed as preventing the identification of the property if required on such manifests or similar documents.

(e) RCTC and/or its contractors shall deliver to OCTA notice of any Permitted Closures of the Toll Facility, not less than seven days prior to the proposed commencement date of the Permitted Closure. Any such closure shall be subject to the approval of OCTA. If RCTC's contractor wishes to withdraw or amend a previously submitted notice of Permitted Closure(s), the contractor shall provide further notice (in the same manner as the original notice) of such withdrawal or amendment not less than five days prior to the proposed commencement date of the Permitted Closure. If RCTC and/or its contractors fail to deliver such withdrawal or amendment not less than seventy-two (72) hours prior to the proposed commencement date of the Permitted Closure, RCTC shall still be responsible for payment of the Permitted Closure even though said Permitted Closure was not utilized by RCTC and/or its contractors.

(f) RCTC and/or its contractor shall provide further notice as soon as they have knowledge that a Permitted Closure will be late in reopening. In the event that a Permitted Closure does not reopen on time, OCTA will not authorize any further lane closures until RCTC's contractor submits to OCTA a corrective action plan to avoid recurrences and OCTA approves, in writing, said corrective action plan.

(g) Closures of the Toll Facility shall not be allowed during the following weekends: (i) New Year's weekend; (ii) on Martin Luther King weekend; (iii) on Presidents Day weekend; (iv) on Easter weekend; (v) on Mother's Day weekend; (vi) on Memorial Day weekend; (vii) 4th of July weekend; (viii) Labor Day weekend; (ix) Veterans Day weekend; (x) Weekend before and weekend after Thanksgiving; and (xi) weekend before and weekend after Christmas Day.

(h) The Work shall be conducted only under the supervision of person and entities licensed and certified to perform the Work. Furthermore, an authorized representative of RCTC or Cofiroute shall be present at all times during the Work.

(i) RCTC represents and warrants to OCTA that RCTC is legally insured for property damage and personal injury, in the amount of $1,000,000 per occurrence/$2,000,000 aggregate with additional limits of $25,000,000 per occurrence in Excess Liability. In addition, RCTC shall cause all of its contractors performing the Work who enter upon the Toll Facility to maintain, at least $5,000,000 per occurrence in insurance coverage under all of the following types of policies: automobile liability

insurance, commercial general liability insurance (which shall include coverage for both bodily injury and abroad form property damage), and Professional Liability insurance, Pollution Liability insurance, as well as all worker's compensation insurance required by law including a waiver of subrogation in favor of OCTA, its officers, directors, employees or agents. The foregoing coverage limits may be met through a combination of the contractor's underlying policies and umbrella or excess liability insurance. OCTA shall be named as an additional insured on all such policies maintained by RCTC's contractor except for the worker's compensation and professional liability policies. In no event shall the amount of such insurance coverage serve as a limitation on RCTC's or its contractors' liability.

(j) RCTC and its contractors shall, at their sole cost and expense, repair all damage to the Toll Facility caused by the Work, it being the intent of this Agreement that upon completion of the Work, business activities on the Toll Facility may promptly resume without hindrance, obstruction or delay, and the Toll Facility shall be in the same condition as existing prior to the Work.

(k) OCTA shall have absolutely no obligation for advising or informing RCTC or its contractors as to the location(s) of any underground utilities, structures, equipment at or beneath the Toll Facility. The responsibility for determining and confirming the location(s) of any underground utilities, structures and equipment shall be solely of RCTC and its contractors. In the event any underground utilities, structures or equipment are damaged by the Work, it shall be RCTC's and its contractors' responsibility to promptly repair, at their sole cost and expense, the same, regardless of the reason(s) why such utilities, structures or equipment were damaged, it being the intent of the Parties hereto that the risk of the same shall be borne solely by RCTC.

(l) RCTC shall be responsible for providing all safety measures during the Work.

(m) If the performance of the Work causes damage to the Toll Facility or any adjacent structures, facilities, underground utilities or equipment that results in the Toll Facility not being fully available for use during the repair, RCTC shall reimburse OCTA at the Permitted and Unpermitted Closure rates listed in Section 2 above for the entirety of time it takes to effectuate the repair

4. Indemnity - In further consideration of OCTA entering into this Agreement, RCTC agrees to protect, hold harmless, indemnify and defend OCTA and its directors, officers, employees, contractors, representatives, successors and assigns (collectively, "Indemnified Parties") from and against any and all suits, claims, causes of actions, assessments, taxes, demands, damages, liens, losses, injuries, liabilities, orders, directives, fines, penalties, costs and expenses (including reasonable attorneys' fees and costs, expert witness fees and bond costs) related to, arising from or based upon: (i) any bodily injury (including death) and/or property damage arising from, caused by or resulting from the Work, (ii) any negligent act(s) or omission(s) at or regarding the Toll Facility by RCTC or its contractors arising from, caused by or resulting from the Work, and/or (iii) any breach of this Agreement by RCTC. The foregoing shall not apply to the extent of OCTA's sole negligence, active negligence or willful misconduct.

5. Notice – Except as may otherwise be expressly provided for in this Agreement, any notices or the like required hereunder shall be in writing and shall be deemed delivered, provided or received, as required by applicable provision, (i) when delivered if personally delivered, (ii) when emailed to the addresses listed below with return receipt, (iii) upon written fax confirmation if sent via

fax, (iv) the next business day if sent via overnight carrier for guaranteed delivery the next business day with delivery confirmation, or (v) three (3) business days after being sent by United States first class certified mail – return receipt requested, postage prepaid, if mailed. Any notices or the like required hereunder shall be sent as follows:

If to OCTA: Orange County Transportation Authority
Kirk Avila, General Manager
550 South Main St.
Orange, CA 92688
714-560-5674
kavila@octa.net

If to RCTC: Riverside County Transportation Commission
Michael Blomquist, Toll Program Director
4080 Lemon Street, 3rd Floor
Riverside, CA 92502
951-787-7141
mblomquist@rctc.org

The foregoing addresses may be changed from time to time in a manner in compliance with this Section. If any notice sent via personal delivery of fax is received by the recipient on a Saturday, Sunday, legal holiday or after 5:00 pm Pacific Standard Time on a business day, it shall be deemed delivered, provided and received on the next business day.

6. Governing Law – This Agreement shall be governed by and construed in accordance with the laws of the State of California.

7. Assignment - This Agreement may not be assigned by RCTC. This Agreement may be assigned by OCTA in its sole discretion.

8. Counterparts – This Agreement may be executed in counterparts, which counterparts shall constitute a single, integrated agreement.

9. Modification; Waiver – This Agreement cannot be modified, amended or altered, or any of the terms hereof waived, except by a writing referring specifically to this Agreement and its intent to modify, amend, alter or waive the same, signed by the Parties. No such waiver shall be deemed to be a subsequent waiver of such provisions or a waiver of any subsequent breach of the same or any other provision hereof.

10. Entire Agreement – This Agreement contains all agreements and understandings between the Parties pertaining to the subject matter hereof. There are no oral or written representations, stipulations or warranties, express or implied, with respect to the same which are not fully set forth herein.

11. Headings – The paragraph headings in this Agreement are intended solely for the convenience of reference and shall not in any manner amplify, limit, modify or otherwise affect the interpretation of any provision of this Agreement, and the masculine, feminine or gender neutral, as well

as the singular and plural, shall be deemed to include the other gender and numbers whenever the context so indicates or requires.

12. No Joint Venture – The Parties acknowledge and agree that this Agreement shall not be construed to create a partnership, joint venture, employment or agency relationship between the Parties.

13. Additional Representations and Warranties – Each Party to this Agreement represents and warrants: (i) it has made such investigation of the facts and matters pertaining to this Agreement that it deemed necessary, (ii) it had an opportunity to consult with an attorney regarding this Agreement, and (iii) it has read this Agreement and understands its contents.

14. Authority to Execute – Each of the persons signing this Agreement hereby represents and warrants that he/she is authorized to execute this Agreement on behalf of the Party for whom he/she is signing.

15. Time is of the Essence – Time is of the essence with respect to each and every provision hereof.

16. Breach by Contractors – Any breach of any duty, covenant or obligations of RCTC's contractors hereunder shall be deemed a breach of this Agreement by RCTC.

[Signatures on following page]

SIGNATURE PAGE

TO

AGREEMENT BETWEEN ORANGE COUNTY TRANSPORTATION AUTHORITY

AND

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

FOR REIMBURSEMENT FOR CLOSURE OF 91 EXPRESS LANES

IN WITNESS WHEREOF, the Parties have duly entered into this Agreement.

ORANGE COUNTY TRANSPORTATION AUTHORITY

_____
Darrell Johnson, CEO

Date:_____

Approved as to Form

_____
James M. Donich
General Counsel

RIVERSIDE COUNTY TRANSPORATION COMMISSION

_____
Anne E. Mayer, Executive Director

Approved as to Form

_____
Steven C. DeBaun
General Counsel

AGENDA ITEM 9F

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Sheldon Peterson, Rail Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Adopt Resolution No. 19-007 for Fiscal Year 2018/19 Low Carbon Transit Operations Program Funds for Expanded Perris Valley Line Service

STAFF RECOMMENDATION:

This item is for the Commission to adopt Resolution No. 19-007, "*Resolution of the Riverside County Transportation Commission Regarding Authorization for the Execution of the Certifications and Assurances and Authorized Agent Forms for the Low Carbon Transit Operations Program for the Expanded Perris Valley Line Fiscal Year 2018/19 Funds Project in the Amount of $1,496,728*."

BACKGROUND INFORMATION:

The Commission's Commuter Rail Program applies for various federal and state funds that are necessary to fund rail projects within Riverside County. There is also the need for grants to meet the Commission's annual funding responsibility related to rail operations and capital passenger projects to support the county's share of the Southern California Regional Rail Authority (Metrolink) service.

The Commuter Rail Program is currently seeking approval to obtain grant funding through the California Department of Transportation Low Carbon Transit Operations Program (LCTOP). LCTOP is one of several programs that are part of the Transit, Affordable Housing, and Sustainable Communities Program established under SB 862. SB 862 established LCTOP as a noncompetitive, formulaic program, with 5 percent of annual auction proceeds from cap-and-trade dollars being continually appropriated beginning 2015. LCTOP funds are distributed based on prior use of State Transit Assistance funds where 50 percent of the funds are designated to regional entities such as the Commission and the other 50 percent directly to transit operators. Projects eligible for this funding need to reduce greenhouse gas emissions and support transit agencies in their effort to increase mode share.

The Rail Program is seeking operation funding in the amount of $1,496,728 for the new Perris Valley Line (PVL) Commuter Rail service, including additional weekday and weekend service that is proposed to be implemented in FY 2019/20.

As required by the LCTOP grant guidelines, a resolution is needed to authorize use of the funds for PVL operations and authorize the Executive Director to execute the Certifications and Assurances and Authorized Agent forms. The resolution is required to submit and file the grant; therefore, staff recommends approval of the resolution related to the FY 2018/19 LCTOP grant.

There is no financial impact to the current fiscal year budget for this item. Funding received from this grant will be included in the final FY 2019/20 budget to be presented at the June meeting and will be reflected in the Commission's Commuter Rail FY 2019/20 Short Range Transit Plan.

Financial Information							
In Fiscal Year Budget:	No	Year:	FY 2019/20	Amount:	$1,496,728		
Source of Funds:	LCTOP			Budget Adjustment:		Yes (final budget)	
GL/Project Accounting No.:	034198 415 41511 0000 103 25 41501						
Fiscal Procedures Approved:	Theresia Trevino			Date:	04/24/2019		

Attachment: Resolution No. 19-007

RESOLUTION No. 19-007

RESOLUTION OF THE RIVERSIDE COUNTY TRANSPORTATION COMMISSION REGARDING AUTHORIZATION FOR THE EXECUTION OF THE CERTIFICATIONS AND ASSURANCES AND AUTHORIZED AGENT FORMS FOR THE LOW CARBON TRANSIT OPERATIONS PROGRAM (LCTOP) FOR THE EXPANDED PERRIS VALLEY LINE OPERATION FISCAL YEAR 2018/19 FUNDS PROJECT IN THE AMOUNT OF $1,496,728

WHEREAS, the Riverside County Transportation Commission is an eligible project sponsor and may receive state funding from the Low Carbon Transit Operations Program (LCTOP) for transit projects; and

WHEREAS, the statutes related to state-funded transit projects require a local or regional implementing agency to abide by various regulations; and

WHEREAS, Senate Bill 862 (2014) named the Department of Transportation (Department) as the administrative agency for the LCTOP; and

WHEREAS, the Department has developed guidelines for the purpose of administering and distributing LCTOP funds to eligible project sponsors (local agencies); and

WHEREAS, the Riverside County Transportation Commission wishes to delegate authorization to execute these documents and any amendments thereto to Anne Mayer, Executive Director; and

WHEREAS, the Riverside County Transportation Commission wishes to implement the following LCTOP project listed above,

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Riverside County Transportation Commission that the fund recipient agrees to comply with all conditions and requirements set forth in the Certification and Assurances and the Authorized Agent documents and applicable statutes, regulations and guidelines for all LCTOP funded transit projects.

NOW THEREFORE, BE IT FURTHER RESOLVED that Anne Mayer, Executive Director be authorized to execute all required documents of the LCTOP program and any Amendments thereto with the California Department of Transportation.

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Riverside County Transportation Commission that it hereby authorizes the submittal of the following project nomination and allocation request to the Department in

FY 2018-19 LCTOP funds:
List project(s), including the following information:

Project Name: Expanded Perris Valley Line Operation FY18/19 Funds

Amount of LCTOP funds requested: $1,496,728

Short description of project: Funding will be used for operating costs associated to expand the commuter rail Perris Valley Line.

Contributing Sponsor: Not applicable

APPROVED AND ADOPTED this 8TH day of May 2019.

_____

Chuck Washington, Chair
Riverside County Transportation Commission

ATTEST:

_____

Lisa Mobley, Clerk of the Board
Riverside County Transportation Commission

AGENDA ITEM 9G

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Western Riverside County Programs and Projects Committee Michelle McCamish, Management Analyst Brian Cunanan, Commuter and Motorist Assistance Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Funding Agreement with the California Highway Patrol for Freeway Service Patrol Supervision

WESTERN RIVERSIDE COUNTY PROGRAMS AND PROJECTS COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to:

1) Approve Agreement No. 19-45-063-00 with the California Highway Patrol (CHP) to provide supervision and operation of the Freeway Service Patrol (FSP) program in Riverside County for a three-year term in an amount not to exceed $3,002,629; and
2) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement on behalf of the Commission.

BACKGROUND INFORMATION:

The Riverside County FSP program is operated as a joint venture between the California Department of Transportation (Caltrans), CHP, and the Commission in its capacity as the Service Authority for Freeway Emergencies (SAFE). The Riverside County SAFE is responsible for administering the program, and the CHP provides daily field supervision to ensure service performance.

The CHP has supplemental agreements with various SAFEs statewide for overtime and/or additional personnel. Since 2001, the Commission has executed agreements with CHP due to the limited personnel and nature of the FSP program. In addition to field supervision during FSP operating hours (5:30 a.m. to 8:30 a.m. and 2:30 p.m. [12:30 p.m. on Fridays] to 6:30 p.m.), there are services performed between operating hours that support the program, therefore requiring CHP officers to work overtime. Below is a sample of the services performed by FSP CHP officers:

In-field Supervisory Services Provided During FSP Operating Hours (not exhaustive)**:**

- Provide in-field, on scene, program supervision;
- Provide on-the-spot decisions regarding incidents occurring in the field;
- Enforce program rules and guidelines through in-field supervision;

- Conduct all investigations with regard to equipment, personnel, damage, and complaints;
- Inspect tow trucks for regulatory compliance;
- Serve as a FSP liaison between agencies, such as with other CHP personnel, Caltrans, cities, counties, etc.; and
- Be available to the public for FSP concerns, questions, comments, complaints.

Administrative Supervisory Services Provided During Non-FSP Hours (not exhaustive)**:**

- Initiate background checks and conduct testing, fingerprinting, and certifications for new FSP drivers;
- Prepare training class materials (binders and maps);
- Conduct training classes;
- Track extra truck time, fines, penalties, and certificates (driver license, DL64, medical cards, and motor carrier permits);
- Prepare monthly billing;
- Maintain the standard operating procedures manual;
- Maintain drop point maps to include changing local regulations;
- Monitor the automatic vehicle locator system, tablets, radios, and other electronic FSP equipment;
- Maintain required field-ready equipment such as backup tablets, radios, safety vests, and magnetic signs;
- Participate in the request for proposal process for new contractors;
- Maintain driver files and records for all FSP drivers;
- Track FSP drivers' tenure and performance with regard to driver recognition and awards; and
- Attend and occasionally host various FSP-related required meetings and trainings (Technical Advisory Committee and quarterly drivers' meetings).

At its June 2016 meeting, the Commission approved an agreement with the CHP for overtime supervision and operation of the FSP program, including construction FSP support for the State Route 91 Corridor Improvement Project (91 Project), in an amount not to exceed $793,181 over a three-year term. At its March 2017 meeting, the Commission approved an amendment to the agreement for an additional amount of $731,011, to support construction FSP for the 91 Project and 91 Express Lanes FSP service. At its March 2018 meeting, the Commission approved a second amendment in the amount of $522,891 to provide incremental weekend service (grant funded) on select beats and for construction FSP support for the I-15 Express Lanes Project. At its July 2018 meeting, the Commission approved a third amendment in the amount of $440,000, in anticipation of the SB 1 coverage expansion to south Riverside County (South County), for a total contract not to exceed $2,487,083.

CHP jurisdictional boundaries govern oversight authority, and, in total, there are six dedicated FSP officers, across two CHP divisions supporting Riverside County FSP operations. Four FSP officers, based out of Inland CHP Division (Inland), support both Riverside and San Bernardino County FSP operations, and two officers, based out of Border CHP Division (Border), oversee the new South County expansion service areas. CHP is provided an allocation by the state and

does absorb some of the baseline personnel costs with that allocation; however, supplemental agreements are needed to cover overtime, dispatch, and/or additional personnel.

DISCUSSION:

The current agreement expires on June 30, 2019, and staff seeks approval for a new agreement with CHP for another three-year term. This new agreement will support the following elements with overtime, dispatch, and additional personnel, as needed: Baseline FSP, 91 (and future 15) Express Lanes FSP, and construction (multiple projects) and incremental FSP (temporary or grant funded service).

Staff coordinated with the local CHP division units (Border and Inland) to develop an estimate for the incremental CHP time and corresponding costs needed to support the aforementioned elements. In addition to the baseline personnel, the draft agreement provides for a maximum amount of overtime hours for officers and dispatchers (as shown below) for each fiscal year at a statewide rate determined each fiscal year by CHP headquarters. The current rates are $90.45 per hour for officers and $46.26 per hour for dispatchers. CHP advised that the Fiscal Year 2019/20 hourly rates will increase to $97.43 per hour for officers and $47.88 per hour for dispatchers. The total amount of the three-year agreement shall not exceed $3,002,629, including a 5 percent contingency. In the event CHP headquarters grants a rate increase, the Commission is required to reimburse the CHP at the new hourly rate, but in no event shall the total amount exceed the maximum contract amount. Below is a breakdown of the preliminary cost estimates and hours by fiscal year:

	FY 2020	FY 2021	FY 2022		
Regular FSP	$367,145	$383,473	$400,726		
Express Lanes FSP	261,558	288,357	318,017		
Incremental FSP	116,248	128,159	141,305		
Construction FSP	308,929	137,313	151,399		
	$1,053,880	$937,302	$1,011,447	**$3,002,629**	**Total CHP Contract**
Officer Hours	6,226	5,175	5,402		
Dispatch Hours	4,726	3,630	3,812		

Construction FSP costs and hours are lower in FY 2021 and 2022, as no construction projects for the Border Division are currently anticipated in those fiscal years. Should any construction projects be identified at a later date, staff will return to the Commission to seek an amendment to this agreement.

The funding agreement provides for the reimbursement from the Commission to the CHP of those reasonable overtime expenses necessary to support the FSP program, FSP service supporting the express lanes projects, and the SB 1 South County FSP program. The Commission only pays for actual supervision and dispatch time incurred, while the contract provides for both known and unforeseen FSP needs throughout the county. Both an Inland and

Border CHP Lieutenant Commander provides direct supervision of the dedicated FSP officers and reviews and approves their reimbursed overtime expenses. Auditing of these reimbursable expenses is performed both at the local CHP division level and at the state level by the FSP liaison contracts unit. Additionally, Commission staff compares invoices to historical and internal data.

Financial Information						
In Fiscal Year Budget:	Yes N/A	Year:	FY 2019/20 FY 2020/21+	Amount:	$1,053,880 $1,948,749	
Source of Funds:	State allocations including SB1, SAFE, and toll revenues			Budget Adjustment:		No N/A
GL/Project Accounting No.:	002173 81016 00000 0XXX 201 45 81002 009199 81016 00000 0000 591 31 81002					
Fiscal Procedures Approved:	Theresia Trevino			Date:	04/23/2019	

Attachment: Draft Agreement No. 19-45-063-00

STATE OF CALIFORNIA

STANDARD AGREEMENT

STD 213 (Rev 06/03)

AGREEMENT NUMBER CHP# xxxxxxxxx RCTC #19-45-063-00 – DRAFT v3
REGISTRATION NUMBER

1. This Agreement is entered into between the State Agency and the Contractor named below:

Department of California Highway Patrol

Riverside County Transportation Commission

2. The term of this Agreement is:	07/01/2019	through	06/30/2022
3. The maximum amount of this Agreement is:	$3,002,628.98 (Three Million Two Thousand Six Hundred Twenty-Eight Dollars and Ninety-Eight Cents)		

4. The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement.

Exhibit A – Agreement Between State of California and Riverside County Transportation	12 pages
Exhibit C* – General Terms and Conditions (with exclusion of item #4 "Audit", #5, "Indemnification", #6 "Disputes", #7 "Termination for Cause", #9 "Recycling", #11 "Certification clauses", #13 "Compensation", #15 "Antitrust Claims", #16 "Child Support Compliance", #18 "Priority Hiring Considerations", and #19 "Small Business Participation and DVBE Participation Reporting Requirements.")	GTC 610 6/9/10

Signatures appear on page 9 of Exhibit A.

Items shown with an Asterisk (*), are hereby incorporated by reference and made part of this agreement as if attached hereto. These documents can be viewed at www.dgs.ca.gov/ols/Resources/StandardContractLanguage.aspx

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CONTRACTOR

CONTRACTOR'S NAME *(if other than an individual, state whether a corporation, partnership, etc.)*

Riverside County Transportation Commission

BY *(Authorized Signature)*: See page 12 for signatures

DATE SIGNED *(Do not type)*:

PRINTED NAME AND TITLE OF PERSON SIGNING

See page 12

ADDRESS

P.O. Box 1208, Riverside, CA 92502-2208

STATE OF CALIFORNIA

AGENCY NAME

Department of California Highway Patrol

BY *(Authorized Signature)*: See page 12 for signatures

DATE SIGNED *(Do not type)*:

PRINTED NAME AND TITLE OF PERSON SIGNING

P. SLINEY, Assistant Chief, Administrative Services Division

ADDRESS

P.O. Box 942898, Sacramento, CA 94298-0001

California Department of General Services Use Only

:

AGREEMENT BETWEEN

STATE OF CALIFORNIA

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

AND

RIVERSIDE COUNTY SERVICE AUTHORITY FOR FREEWAY EMERGENCIES

FOR FREEWAY SERVICE PATROL

THIS AGREEMENT is between the State of California acting by and through Department of California Highway Patrol (hereinafter referred to as CHP) P.O. Box 942898, Sacramento, California 94298-001 and Riverside County Transportation Commission, acting in its capacity as the Riverside County Service Authority for Freeway Emergencies (hereinafter referred to as RCTC) P.O. Box 12008, Riverside, CA 92502-2208. Collectively, CHP and RCTC may be referred to as the "Parties."

ARTICLE 1. GENERAL INFORMATION

A. This Agreement provides for CHP dispatch services and overtime oversight assistance in connection with the Freeway Service Patrol (FSP) program in Riverside County. Streets and Highways Code Section 2561, subdivision (c) defines "freeway service patrol" as a "program managed by the Department of the California Highway Patrol, the [California Department of Transportation] and a regional or local entity which provides emergency roadside assistance on a freeway in an urban area."

B. Section 2401 of the California Vehicle Code (CVC) states that the Commissioner of CHP shall make adequate provisions for patrol of the highways at all times of the day and night.

C. RCTC has the ability to provide local matching funds as required by the State Budget Change Proposal (BCP) for FSPs on freeways within Riverside County, which has qualified the county to participate in the State FSP program. Riverside County FSP

will assist in transportation system management efforts, provide traffic congestions relief, and expedite the removal of freeway impediments, all of which will have the added benefit of improving air quality.

ARTICLE 2. TERMS AND CONDITIONS

A. Riverside County's FSP program is intended to be funded with revenues derived from Service Authority for Freeway Emergencies (SAFE), State Budget Change Proposal funds, known as BCP, and Senate Bill 1 (SB 1) funds for the day-to-day contractor operation. RCTC is currently only provided 3 officers (two Inland Division officers and one Border Division officer) to provide oversight for the program within their jurisdiction in accordance with funding available for the statewide FSP program. With ongoing additions and turnover of FSP program drivers, the provision of additional driver training and required certification classes by CHP are a necessity in order for RCTC's tow contractors to maintain their contractual obligation of having only certified FSP drivers perform FSP services. With only 3 officers, it is difficult to provide classes as well as all other duties the officers are responsible for within regular duty hours. Therefore, it is necessary to fund an additional officer position for the Border Division and CHP overtime across both Border and Inland CHP Divisions for FSP program oversight assistance, incident investigations, administrative duties, and other field duties as required to maintain operational safety and code compliance.

B. Should this Agreement be terminated under paragraph D, RCTC agrees to provide funding to reimburse CHP for those reasonable and allowable costs incurred and associated with the program overtime and administrative duties as defined in this Agreement up to the point of termination.

C. The term of this Agreement shall be effective July 1, 2019 through June 30, 2022.

D. The CHP and RCTC mutually agree that either party may terminate this Agreement upon sixty (60) days prior written notice to the other party.

E. The CHP and RCTC agree that this Agreement may be amended by mutual written consent of both parties hereto.

F. RCTC agrees to reimburse CHP for actual costs incurred for FSP related duties performed by CHP officers ("Officers"), in accordance with the following schedule:

i. For Regular FSP Program (Inland Division):

1) Approximately 1,000 hours of available Officer overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $97.43 per hour for an annual estimated amount of $97,430.00.

2) Approximately 1,020 hours of available Officer overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $102.30 per hour for an annual estimated amount of $104,346.00.

3) Approximately 1,040 hours of available Officer overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $107.42 per hour for an annual estimated amount of 111,716.80.

ii. For Express Lanes FSP (91 Express Lanes, 15 Express Lanes):

1) Approximately 1,800 hours of available Officer overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $97.43 per hour for an annual estimated amount of $175,374.00.

2) Approximately 1,890 hours of available Officer overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $102.30 per hour for an annual estimated amount of $193,347.00.

3) Approximately 1,985 hours of available Officer overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $107.42 per hour for an annual estimated amount of $213,228.70.

4) Approximately 1,800 hours of available Dispatcher overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $47.88 per hour for an annual estimated amount of $86,184.00. Approximately 1,890 hours of available Dispatcher overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $50.27 per hour for an annual estimated amount of $95,010.30. Approximately 1,985 hours of available Dispatcher overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $52.79 per hour for an annual estimated amount of $104,788.15

iii. For RC SAFE/ Construction FSP:

(1) Approximately 650 hours of available Officer overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $97.43 per hour for an annual estimated amount of $63,329.50.

(2) Approximately 900 hours of available Officer overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $102.30 per hour for an annual estimated amount of $92,070.00.

(3) Approximately 945 hours of available Officer overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $107.42 per hour for an annual estimated amount of $101,511.90.

(4) Approximately 650 hours of available Dispatcher overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $47.88 per hour for an annual estimated amount of $31,122.00. Approximately 900 hours of available Dispatcher overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $50.27 per hour for an annual estimated amount of $45,243.00. Approximately 945 hours of available Dispatcher overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $52.79 per hour for an annual estimated amount of $49,886.55.

iv. For Incremental FSP (Temporary/Special and/or Grant Funded):

(1) Approximately 800 hours of available Officer overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $97.43 per hour for an annual estimated amount of $77,944.00.

(2) Approximately 840 hours of available Officer overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $102.30 per hour for an annual estimated amount of $85,932.00.

(3) Approximately 882 hours of available Officer overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $107.42 per hour for an annual estimated amount of $94,744.44.

(4) Approximately 800 hours of available Dispatcher overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $47.88 per hour for an annual estimated amount of $38,304.00. Approximately 840 hours of available Dispatcher overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $50.27 per hour for an annual estimated amount of $42,226.80. Approximately 882 hours of available Dispatcher overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $52.79 per hour for an annual estimated amount of $46,560.78.

v. For Regular FSP Program (Border Division):

1) Approximately 500 hours of available Officer overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $97.43 per hour for an annual estimated amount of $48,715.00.

2) Approximately 525 hours of available Officer overtime during fiscal year 2020/2021, reimbursed at an estimated rate of $102.30 per hour for an annual estimated amount of $53,707.50.

3) Approximately 550 hours of available Officer overtime during fiscal year 2021/2022, reimbursed at an estimated rate of $107.42 per hour for an annual estimated amount of $59,081.00.

vi. For RC SAFE/ Construction FSP (Border Division):

(1) Approximately 1,476 hours of available Officer overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $97.43 per hour for an annual estimated amount of $143,806.68.

(2) Approximately 1,476 hours of available Dispatcher overtime during fiscal year 2019/2020, reimbursed at an estimated rate of $47.88 per hour for an annual estimated amount of $70,670.88.

vii. RCTC Funding of 1 CHP Officer (Border Division):

(1) RCTC agrees to reimburse CHP for one additional full time Officer position for the Agreement term at estimated annual amounts of $221,000.00 for fiscal year 2019/2020, $225,420.00 for fiscal Year 2020/2021 and $229,928.00 for fiscal year 2021/2022.

viii. Use of Funds; Total Not to Exceed Contract Value.

Amounts Payable to the CHP by RCTC for costs incurred pursuant to this Agreement may be utilized over several fiscal years, and need not be utilized in a single fiscal year by the CHP, so long as the total amount payable under this Agreement is not exceeded.

It is understood by both parties that rate increases in salary and benefits are governed by collective bargaining agreements and/or statute and that no advance written notification is necessary prior to implementing the increased rates. In the event CHP is granted a rate increase, RCTC agrees to reimburse CHP at the new hourly rate, but in no event shall the total amount to be reimbursed by RCTC under this Agreement, for any of the services described herein, exceed the maximum contract amount of $3,002,628.98.

Fiscal Year begins July 1 and ends on June 30.

G. The CHP shall invoice monthly. RCTC agrees to pay CHP within thirty (30) days after the invoice is received. The CHP and RCTC agree that any notice required under this Agreement shall be delivered or mailed to the persons designated below:

To CHP:
California Highway Patrol
Research and Planning Section
P.O. Box 942898
Sacramento, CA 94298-0001
ATTENTION: Dwyane Potts
Statewide FSP Manager
(916) 843-3353

To COMMISSION:
Riverside County Transportation Commission
P.O. Box 12008
Riverside, CA 92502-2208

ATTENTION: Brian Cunanan
Program Manager
(951) 787-7141

ARTICLE 3. COMMISSION RESPONSIBILITIES

A. RCTC shall reimburse CHP for those reasonable overtime expenses necessary to support the Riverside County FSP operations as outlined under Article 2, Terms and Conditions, Paragraph F.

B. It is agreed that in the event State FSP funds do not become available to RCTC for this Agreement, RCTC may immediately terminate this Agreement with written notice, but shall pay the CHP from other sources any amounts required to cover CHP's cost to the date of Agreement termination.

ARTICLE 4. CHP RESPONSIBILITIES

A. The CHP has already assigned and staffed, for the dedicated purpose of operating the Riverside County FSP, one and one half (1.5) full-time officers for the dedicated purpose of assisting with Riverside County FSP operations. If the CHP cannot provide the Agreement's specified staffing level, CHP agrees to notify RCTC within thirty (30) days.

B. All personnel providing services shall be State employees under the sole discretion, supervision, and regulation of CHP. Said personnel shall work out of the appropriate CHP facilities as designated by CHP. At no time shall any State employee assigned to the Riverside County FSP program be considered employees, agents, officials, or volunteers of RCTC.

ARTICLE 5. CHP OVERTIME

CHP overtime duties may include, but not be limited to:

A. Investigating complaints from the public regarding a Riverside County FSP contractor or driver.

B. Performing all necessary driver license and background checks on all Riverside County FSP operators.

C. Inspecting all Riverside County FSP contractor tow trucks on a periodic basis.

D. Performing necessary daily FSP oversight and program management, and providing oversight of the contractors' compliance with statutory and regulatory requirements.

E. Providing training to all Riverside County FSP contractors and operators.

F. Assisting RCTC with verifying contractor billing.

G. Provide representation for Riverside County FSP Technical Committee.

ARTICLE 6. INDEMNIFICATION

A. To the extent permitted by law, RCTC shall defend, indemnify, and save harmless CHP and all of CHP's appointees, officers, and employees from and against any and all claims, suits, or actions for "injury" (as defined by Government Code section 810.8) caused by the negligent or intentional acts or omissions of RCTC, or RCTC's officers, directors, and employees, arising out of the performance of this Agreement.

B. To the extent permitted by law, CHP shall defend, indemnify, and save harmless RCTC and all of RCTC's officers, directors, and employees from and against any and all claims, suits, or actions for "injury" (as defined by Government Code section 810.8) caused by the negligent or intentional acts or omissions of CHP, or CHP's appointees, officers, or employees, arising out of the performance of this Agreement.

C. Neither termination of this Agreement nor completion of the acts to be performed under this Agreement shall release any party from its obligation to indemnify as to any claims or cause of action asserted so long as the event(s) upon which such claim or cause of action is predicated shall have occurred subsequent to the effective date of this Agreement and prior to the effective date of Termination or completion.

ARTICLE 7. AUDITS

The contracting parties hereto shall be subject to the examination and audit of the State for a period of three (3) years after final payment under the contract. In addition, RCTC and CHP may be subject to the examination and audit by representatives of either party. The examination and audit shall be confined to those matters connected with the performance of the contract including, but not limited to the costs of administering the contract. RCTC and CHP agree to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records (Gov. Code Sect. 8546.7, Pub. Contract Code Sect. 10115 et seq., CCR Title 2, Section 1896). RCTC and CHP agree to maintain such records for possible audit for a minimum of three (3) years after final payment.

ARTICLE 8. DISPUTES

Except as otherwise provided in this Agreement, any dispute concerning a question of fact arising under this Agreement which is not disposed of by mutual agreement of the parties may be submitted to an independent arbitrator mutually agreed upon by the CHP and RCTC. The arbitrator's decisions shall be non-binding and advisory only, and nothing herein shall preclude either party, at any time, from pursuing any other legally available course of action, including the filing of a lawsuit. Pending a final decision of a dispute hereunder, both parties shall proceed diligently with the performance of their duties under this Agreement, and such continued performance of their duties under this Agreement shall not constitute a waiver of any rights, legal or equitable, of either party relating to the dispute.

ARTICLE 9. RESOLUTION

RCTC agrees to provide CHP with a resolution, motion, order or ordinance of the governing body, approving execution of agreements with CHP, and identifying the individual who is authorized to sign the Agreement on behalf of RCTC.

ARTICLE 10. OTHER TERMS AND CONDITIONS

A. By and in consideration of the covenants and conditions contained herein, CHP and RCTC do hereby agree as follows:

i. This Agreement, and any attachments or documents incorporated herein by inclusion or reference, constitutes the complete and entire Agreement between CHP and RCTC and supersedes any prior representations, understandings, communications, commitments, Agreements or proposals, oral or written.

ii. This Agreement shall not become effective until:

1) Duly signed by both parties and approved by the Department of General Services Office of Legal Services, if applicable.

2) RCTC has submitted to CHP a copy of the resolution, policy, order, motion, or ordinance from RCTC approving execution of the Agreement and identifying the individual authorized to sign on behalf of RCTC.

This space is intentionally left blank.

This Agreement is entered into by the parties listed below and shall be effective upon approval by the Department of General Services Office of Legal Services, if applicable. By executing this Agreement, the representatives of CHP and RCTC warrant that they have viewed and fully understand all provisions of this Agreement, and are authorized to bind their respective agencies to all terms of the Agreement's provisions.

STATE OF CALIFORNIA Department of California Highway Patrol	RIVERSIDE COUNTY TRANSPORTATION COMMISSION
P. SLINEY, Assistant Chief Administrative Services Division	Chuck Washington Chair
Date	Date
	APPROVED AS TO FORM:
	Best, Best & Krieger LLP General Counsel
	Date

AGENDA ITEM 10

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM	Budget and Implementation Committee Cheryl Donahue, Public Affairs Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Quarterly Public Engagement Metrics Report, January – March 2019

BUDGET AND IMPLEMENTATION COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to receive and file the Quarterly Public Engagement Metrics Report for January – March 2019.

BACKGROUND INFORMATION:

Staff has been monitoring public engagement activities since January 2018 and has been preparing Quarterly Public Engagement Metrics Reports. An updated report is provided for the first quarter of 2019, which covers January-March. These quarterly reports are a data-driven approach to measuring progress toward public engagement goals, allow staff to assess the effectiveness of its efforts on an ongoing basis, and provide transparency into how the Commission is using its resources to engage and educate the public.

This quarterly report includes three sets of data:

1) Metrics for RCTC's overall public engagement activities, including website use and access; website top pages visited; email notifications; social media likes, engagement and reach; and public sentiment
2) Metrics for RCTC's Interstate 15 Express Lanes Project public engagement activities, including email activity, website sessions, and social media.
3) New for this report are metrics for RCTC's #RebootMyCommute public engagement program, which launched on March 6, 2019.

The quarterly report will continue to evolve as staff refines its approaches to measuring public engagement activities and in response to any feedback from Commissioners. In addition, as additional significant capital projects begin, such as the State Route 60 Truck Lanes project, staff will provide project-related metrics.

Report highlights for this quarter follow and are attached in a graphical format to this agenda item. It is important to note the metrics again reflect an increase in paid digital advertising during

this first quarter. This increase in digital advertising expenditures has resulted in a significant jump in some of the metrics.

RCTC Overall Public Engagement

1) Website

a. For the quarter, there were 23,818 website sessions, a 16 percent increase from last quarter's 20,614 sessions. There also were 13,774 unique users, an increase of 8 percent compared to the previous quarter's 12,719 unique users.

b. Close to one-third of the visitors accessed the website using a direct search (keying in rctc.org). Another 42 percent used organic searches, such as Google. Others used social media (19 percent), and website referrals (8 percent). This data is very similar to last quarter's metrics.

c. Website access via desktop versus mobile remained stable. The first quarter showed 54 percent accessing the website through a desktop computer and 46 percent using mobile devices. Last quarter, the ratio was 55 percent to 45 percent.

d. The homepage continues to be the most frequently visited page within the website, followed by the "Meetings and Agendas" page. For the first time, the "Employment" page was among the top four pages, along with the "Santa Ana River Trail Project Phase One" page.

2) Social Media

a. **Facebook**: At the end of the quarter, the Facebook page had 8,412 likes, a 2 percent increase over last quarter's 8,265 likes. The page also had 43,322 forms of engagement, such as likes, comments and shares, a 228 percent increase from last quarter's 13,227 forms of engagement. Facebook also had 5,338,593 impressions, which is the number of times that RCTC's content was displayed in news feeds. This was a very large increase – 426 percent – from last quarter's 1,014,855 impressions. This increase likely was a result of the significant increase in paid digital advertising this quarter.

b. **Twitter**: RCTC's Twitter page showed a 3 percent increase in followers, from 1,085 to 1,117. Engagement jumped 1,668 percent, from 301 forms of engagement to 5,321. Impressions also showed a large gain of 1,506 percent – from 48,761 to 783,246. Similar to Facebook, these gains probably are due to the growth in digital advertising.

c. **Instagram**: The Instagram page grew 23 percent, from 302 to 372 followers. Engagement increased by 25 percent, from 372 forms of engagement to 465. Impressions grew 28 percent to a total of 8,417, compared to last quarter's 6,594 impressions.

d. Overall, public sentiment was positive, with the exception of comments received in early February in response to posts related to RCTC's federal funding application for improvements to the 91 corridor. RCTC received positive comments about the Coachella special events train and the #RebootMyCommute campaign.

3) ***RCTC's The Point:*** RCTC continues to produce content for its online blog, *The Point*, and distributes this information and other news via email to subscribers. RCTC's subscriber rate grew 62 percent, from 1,777 to 2,884. The large increase in subscribers is due in part to the #RebootMyCommute campaign that started March 6. Thirty-five percent of subscribers opened *The Point*, and 7 percent clicked on links to learn more.

Interstate 15 Express Lanes Construction Public Engagement

1) ***Emails:*** There were a total of 96 new email sign-ups for the quarter compared to last quarter's 125 – a decrease of 30 percent, and 14 email inquiries received, the same as last quarter's inquiries.
2) ***Website:*** The website experienced a drop in visits from 8,657 last quarter to 5,367 this quarter, a decrease of 38 percent.
3) ***Social Media:*** The project's Facebook, Twitter and Instagram accounts all showed small gains. The Facebook page grew to 2,030 likes from 1,933 likes last quarter, a 5 percent increase. Twitter increased slightly from 219 followers to 220, a .5 percent increase. Instagram followers increased 9 percent from 351 to 384.

#RebootMy Commute Public Engagement

1) ***Community Outreach:*** Two Tele-town Hall meetings were held March 19 and 20. These attracted 7,539 participants, 52 phone discussions, and nine voice messages. Staff also took part in three community events and engaged with 160 residents at these events.
2) ***News Media:*** Ten news stories featured the "Reboot" campaign. Advertisements were placed in *The Press-Enterprise* and *The Desert Sun*, with a combined print ad circulation of 461,702 and digital ad circulation of 156,250. The video ad was aired 16 times on television station KESQ.
3) ***Website:*** The RebootMyCommute.org website had 11,666 sessions with 10,322 unique visitors. A total of 308 comment forms have been received to date.
4) ***Messages***: The campaign generated a large number of new subscribers to RCTC's *The Point* newsletter – 1,090 new subscribers via email and 74 via text message. There were 5,205 brochure copies distributed to city halls, community centers, libraries and senior centers across Riverside County.
5) ***Social Media Advertising:*** A number of #RebootMyCommute social media ads ran since the campaign launched on March 6. On Facebook, 43,961 people viewed the videos in their entirety, 17,493 clicked through to learn more, there were 1,311 direct engagements with viewers, 2,175,674 impressions, and a reach of 301,257. On Twitter, full video views totaled 7,613, click-throughs totaled 1,989, direct engagements were 54, and impressions totaled 368,225. On Instagram, 15,652 people watched the videos, 1,955 clicked to learn more, there were 1,193 direct engagements, 1,567,740 impressions, and a reach of 212,833. The "Reboot" videos posted to YouTube also generated considerable interest with 575,087 full views, 8,341 clicks, and 2,288,256 impressions. Online sentiment related to the social media ads was strongly positive starting with the campaign

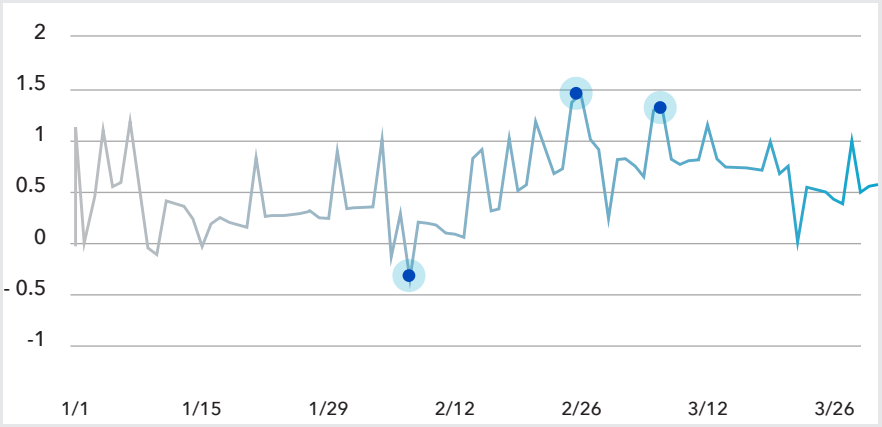
launch on March 6 and building through mid-March. A second round of social media advertising launched on March 21, generating additional positive sentiment.

Attachments:
1) RCTC Overall Public Engagement Metrics
2) I-15 Express Lanes Public Engagement Metrics
3) #RebootMyCommute Public Engagement Metrics

Public Engagement Metrics: Q1

January - March 2019

Overall Social Media Sentiment



2/7 (-) Federal funding application for 91 highway improvements
2/25 (+) Support for Coachella special events train
3/6 (+) Response to #RebootMyCommute campaign

Eblasts

+62%

Subscribers
2,884

Average Open
31%

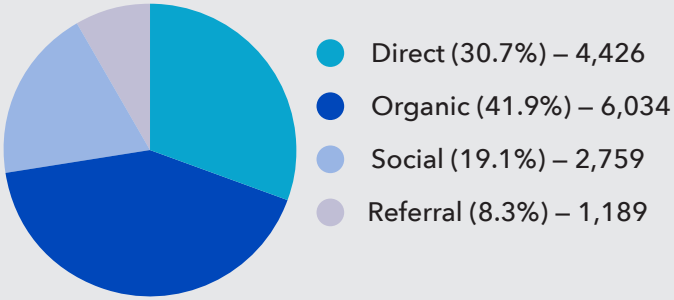
Average Click
7%

Web

23,818 Number of Sessions **+16%**

13,774 Number of Unique Users **+8%**

Top Channels



Differences
Paid advertising increased in Q1.

Top Pages Visited

*Homepage is **#1** most visited page*

2	Meetings and Agendas
3	Employment
4	Santa Ana River Trail Project Phase One

Desktop vs Mobile Users

Social Media

Facebook

Page Likes	8,412	+2%
Engagement	43,322	+228%
Impressions	5,338,593	+426%

Twitter

Followers	1,117	+3%
Engagement	5,321	+1668%
Impressions	783,246	+1506%

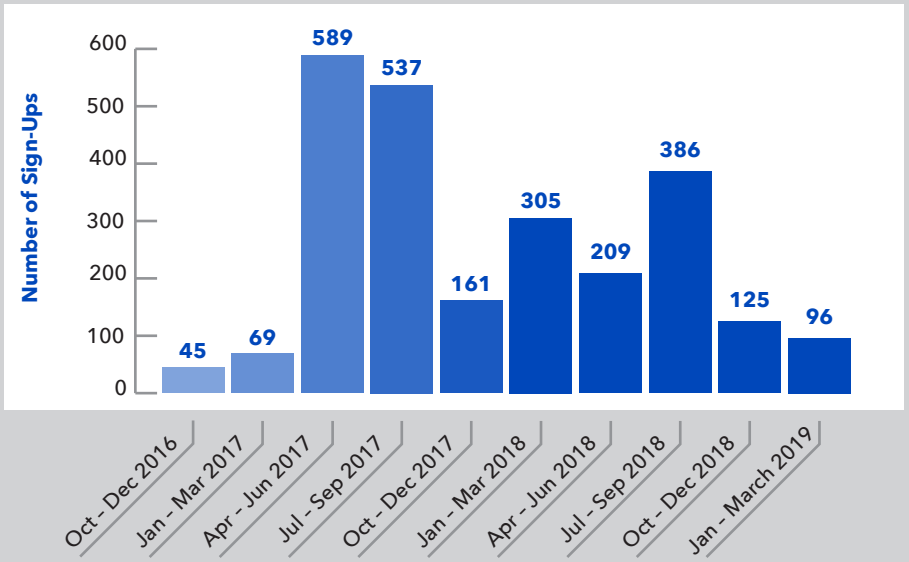
Instagram

Followers	372	+23%
Engagement	465	+25%
Impressions	8,417	+28%

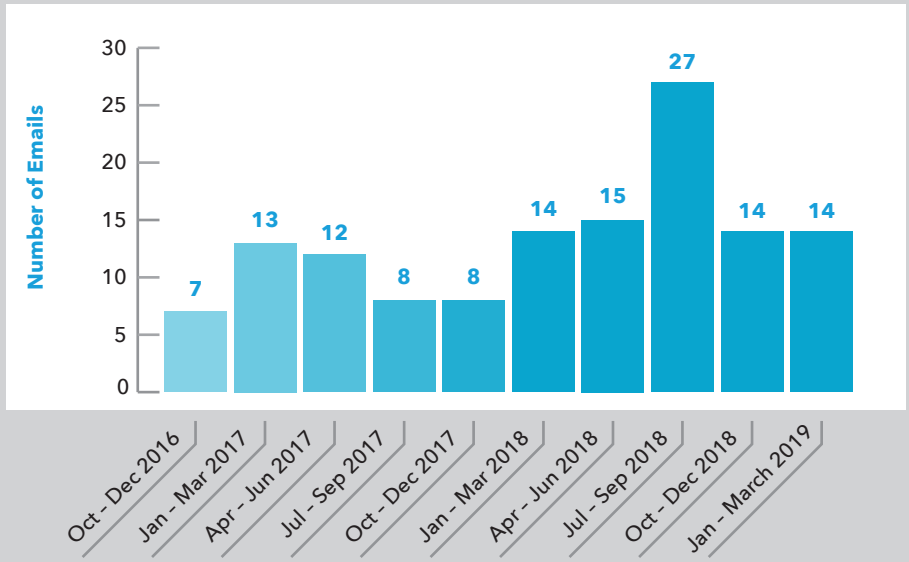
15 Express Lanes Project
Outreach Metrics

Jan 2019 - March 2019

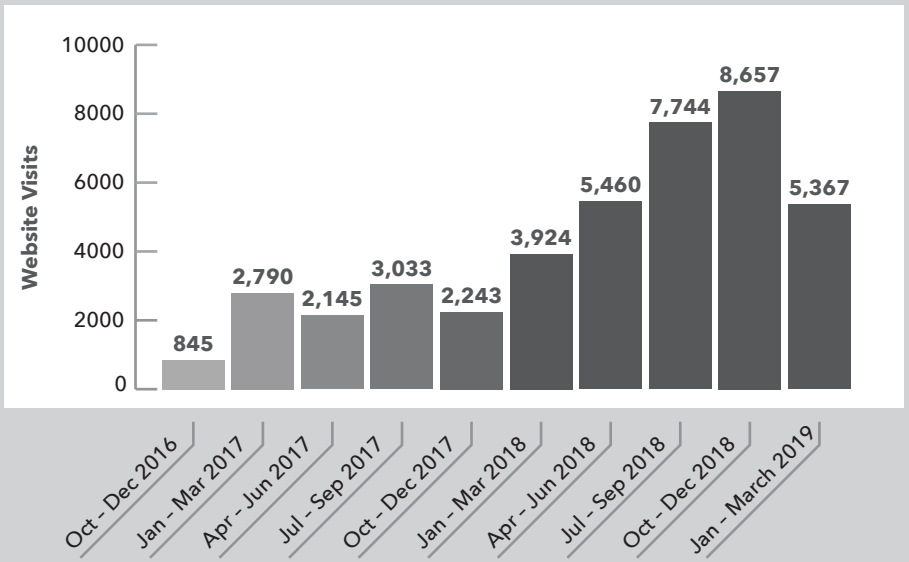
Email List Sign-Ups



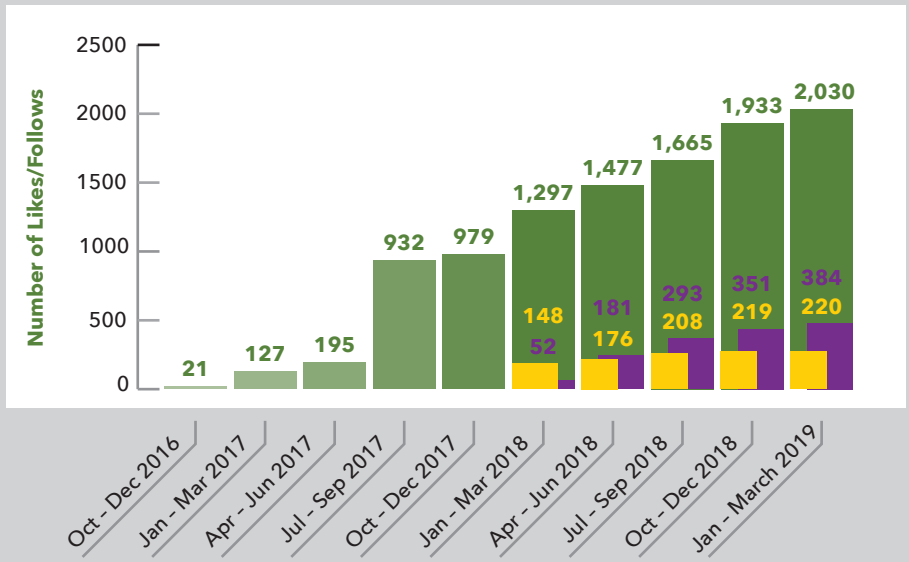
Emails Received



Website Visits



Social Media Likes/Follows



#RebootMyCommute Metrics

March 2019

Community Outreach

Tele-town Halls

7,539	52	9
Participants	Comments	Voice Messages

Community Booths

500	160
Event Attendance	People Engaged

Media

Publications

10	461,702	156,250
Media Stories	Print Ad Circulation	Digital Ad Circulation

Television

16
Video Ad Airs

Website

11,666	10,322	308
Number of Sessions	Number of Unique Users	Form Submissions

Messages

Email

1,090
Subscribers

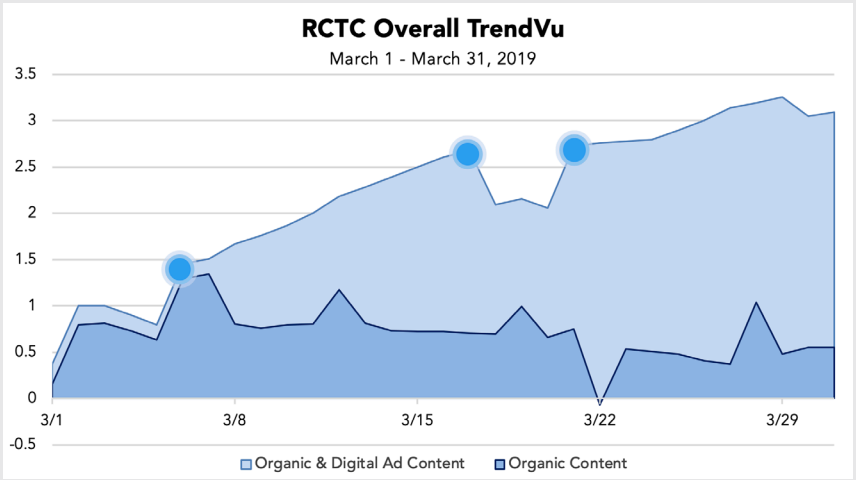
Text

74
Subscribers

Print Piece

5,205
Delivered

Online Sentiment



3/6 (+) #RebootMyCommute campaign launches.
3/17 (+) Round 1 ends. Ad data is used to optimize targeting and messaging.
3/21 (+) Round 2 #RebootMyCommute campaign ads launch.

Social Media Ads

Facebook

Video Views (100%)
43,961

Clicks
17,493

Direct Engagements
1,311

Impressions
2,175,674

Reach
301,257

Twitter

Video Views (100%)
7,613

Clicks
1,989

Direct Engagements
54

Impressions
368,225

Instagram

Video Views (100%)
15,652

Clicks
1,955

Direct Engagements
1,193

Impressions
1,567,740

Reach
212,833

YouTube

Video Views (100%)
575,087

Clicks
8,341

Impressions
2,288,256

AGENDA ITEM 11

ORAL REPORT

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Cheryl Donahue, Public Affairs Manager Bryce Johnston, Capital Projects Manager
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	State Route 60 Truck Lanes Project Public Outreach Update

STAFF RECOMMENDATION:

This item is for the Commission to receive an oral report on the public outreach efforts for the State Route 60 Truck Lanes project.

BACKGROUND INFORMATION:

Staff will present a SR-60 Truck Lanes Project public outreach update.

AGENDA ITEM 12

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	May 8, 2019
TO:	Riverside County Transportation Commission
FROM:	Lorelle Moe-Luna, Multimodal Services Director John Standiford, Deputy Executive Director
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	Approval of the Logistics Mitigation Fee Nexus Study

STAFF RECOMMENDATION:

This item is for the Commission to approve the Logistics Mitigation Fee Nexus Study.

BACKGROUND INFORMATION:

Purpose of the Study

In 2015, the Commission and the County of Riverside (County) filed a lawsuit against the city of Moreno Valley and Highland Fairview, the developer of the World Logistics Center (WLC) project. The lawsuit challenged the environmental impact report to ensure adequate mitigation to impacts created by the WLC project. The WLC is proposed to be located in the eastern portion of the city, southerly of State Route 60, between Redlands Boulevard and Gilman Springs Road as shown in Figure 1 below. The project would encompass over 2,610 acres with 40 million square feet for a large-scale logistics operation and is estimated to attract over 14,000 truck trips and 68,721 trips daily.

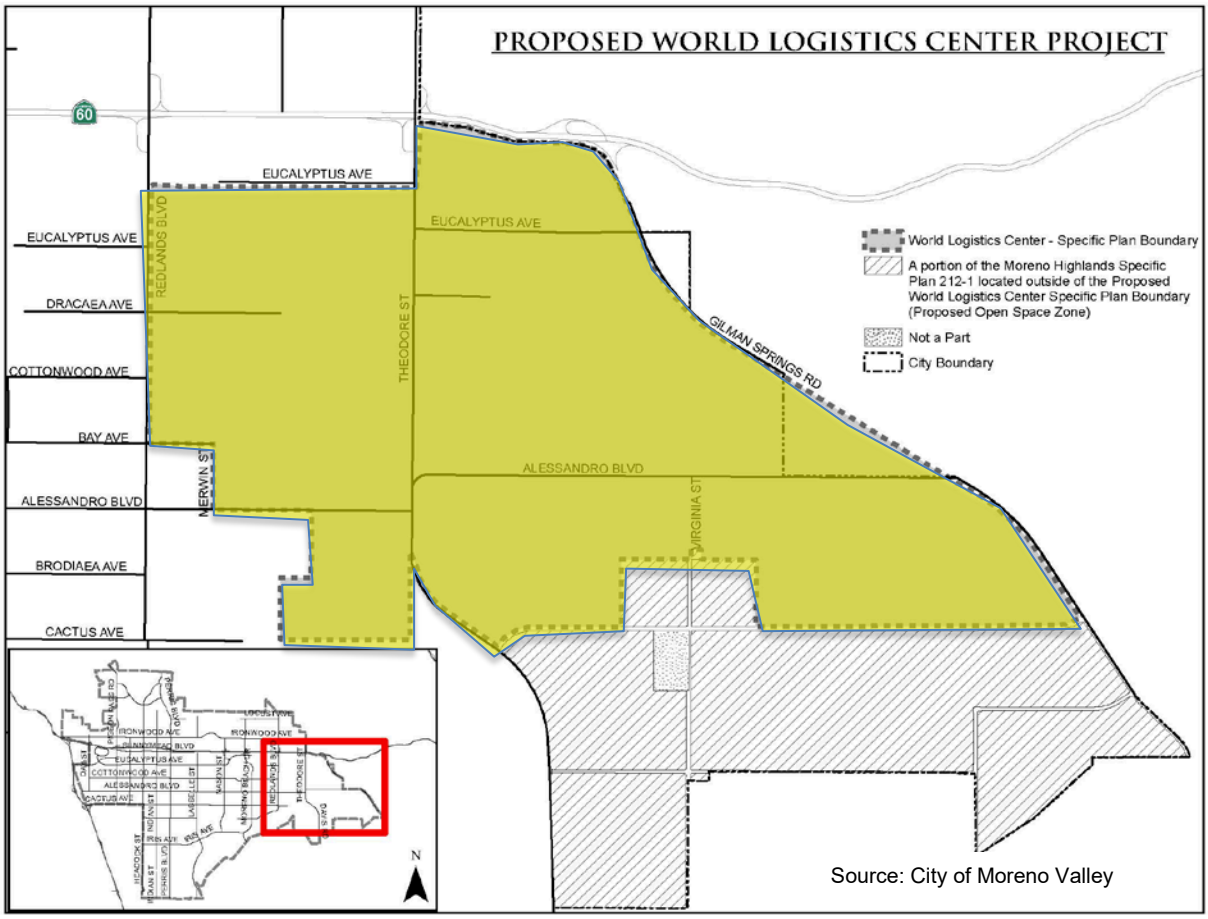
In July 2016, a settlement agreement was reached between the Commission, the County, the city of Moreno Valley, and Highland Fairview. A key provision of the settlement required that the four parties each contribute $250,000, for a total of $1 million, for the Commission to conduct a regional transportation study to evaluate a logistics-related regional fee, including the fee structure and implementing mechanism.

A result of the study could be a new fee program that would, for example, set a fee on new distribution center warehouses, based on facility size, to help pay for highway improvements. This fee would differ from existing Transportation Uniform Mitigation Fee (TUMF) Programs in that it would only focus on highway projects, as compared to the regional TUMF Programs, which collect funds for regional arterials and local streets.

Per the settlement agreement, if the County or at least 75 percent of the Commission's member cities adopt a regional warehouse fee within two years after a final court judgment is issued, Highland Fairview will pay 65 cents per square foot for each operating warehouse within the WLC. If no regional fee is adopted, the fee would be 50 cents per square foot. Proceeds would be used for projects identified as part of the regional truck study.

The purpose of this item and staff's recommendation is to approve the study. Implementing a fee program would require additional action by the Commission and local jurisdictions.

Figure 1: Location of Project



Summary of Completed Tasks

At its January 2017 meeting, the Commission approved the award for a regional truck study and development and implementation of a regional logistics mitigation fee to WSP USA, formerly Parsons Brinckerhoff, Inc. The study was kicked off in spring 2017 and a study advisory team was created to review and discuss the data and deliverables provided by the consultant team. The study advisory team consisted of staff representatives from the Commission, County, city of Moreno Valley, Highland Fairview, Western Riverside Council of Governments (WRCOG), Coachella Valley Association of Governments, Caltrans, South Coast Air Quality Management District (SCAQMD), Southern California Association of Governments (SCAG), and NAIOP Commercial Real Estate Development Association.

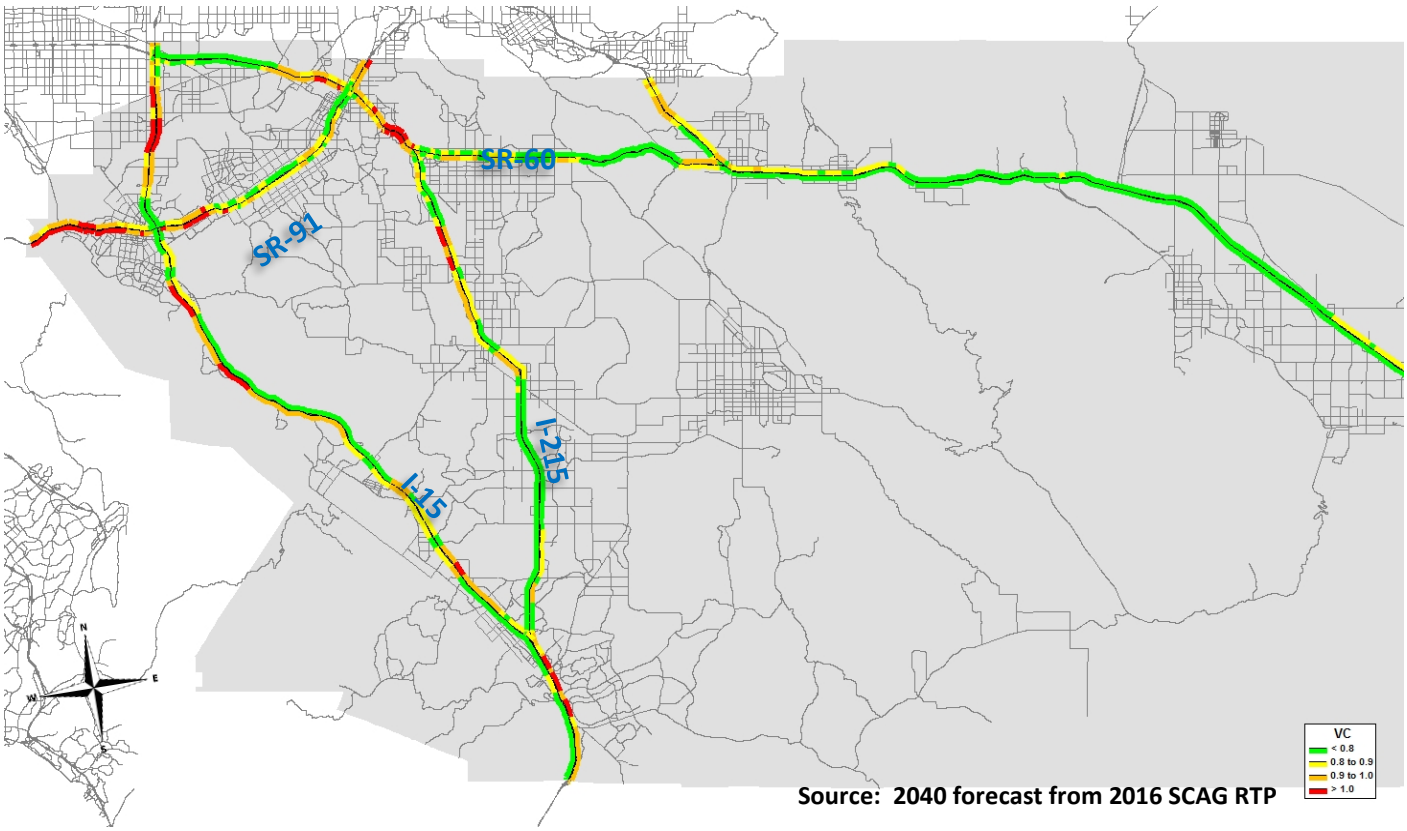
Existing and Future Conditions Analysis and Funding and Cost Analysis

At its June 2018 Commission meeting, staff and the project consultant provided an update on the study. At that time, the Existing and Future Conditions Analysis and Funding and Cost Analysis were completed and concluded the following:

- Existing and future warehousing related land use inventory was needed to forecast trips for each type of warehousing activity (i.e. high-cube such as fulfillment centers/parcel hubs, industrial parks, etc);
- Sufficient data sources are available to justify the completion of a Nexus Study;
- The SCAG 2016 Regional Transportation Plan (RTP) and its forecasted modeling was found to be the most comprehensive data source to evaluate existing and future conditions;
- Other datasets such as SCAQMD's Warehouse Study and ITE's Trip Generation Model were evaluated but had limitations such as lack of forecasting data and concentrations on certain warehousing activities such as high-cube;
- Diagnostic tests using Caltrans' truck count data were conducted to check that the SCAG model provided reasonable forecasts and were found to be pretty accurate;
- Origin-destination patterns were also collected using cellphone GPS data to analyze patterns within the County and between other regions;
- Origin-destination data reveals that about half of the heavy-duty truck trips in Riverside County either begin or end in the County, about two-thirds of the medium heavy-duty truck trips begin or end in the County, and highways in the County have the largest share of truck traffic for both heavy-duty and medium-duty trips in the SCAG region;
- The SCAG 2016 RTP model was used to determine traffic flows in the AM and PM peak hours, which is critical to identifying the attributable deficiencies by logistic activities;
- Logistics warehousing is estimated to grow in Riverside County by about 37.3 million square feet by 2040; and
- Future deficiencies in the highway network caused by logistics growth were identified in western county (see Figure 2).

Figure 2 identifies deficiencies based on new warehousing development as forecasted in the 2016 SCAG RTP.

Figure 2: Identified Deficiencies Based on New Warehousing Development



Source: 2040 forecast from 2016 SCAG RTP

Cost Estimation Methodology

Proposed projects to mitigate the logistics growth could range from the addition of an auxiliary lane at on-and-off ramps, or, the widening of a mainline. Conceptual costs were developed based on the quantification of construction elements in conceptual designed using Google imaging data. Existing capacity deficiencies, pass-through trips in Riverside County, and infrastructure improvements that are already planned or have been completed (i.e. SR-91 Capital Improvement Program or French Valley Parkway Projects) were excluded from the calculation of the potential fee.

Total cost of infrastructure improvements is estimated at $383.3 million (Table 1), of which the attributable share to logistics growth is about $47.8 million, or 12 percent (Table 2).

Table 1: Total Conceptual Cost Estimate

RCTC Truck Study and Regional Logistics Mitigation Fee Capacity Improvement Project Conceptual Cost Estimate Summary						
ID	***Route Name***	***Dir***	***Beginning***	***End***	***Total Conceptual Project Cost***	***Findings***
1	I-15	NB	SR-79 S	Rancho California Rd	$36,237,000	Cost reduced by TUMF inclusion of I-15 at Rancho California
			Rancho California Rd	Winchester Rd		
2			Winchester Rd	Lane Add south of I-15/I-215 Split	-	Mitigated by French Valley Parkway Project
3			Clinton Keith Rd	Baxter Rd	$7,406,000	Cost reduced by TUMF inclusion of I-15 at Baxter
4			El Cerrito Rd	Ontario Ave	-	Mitigated by I-15 Tolled Express Lanes (TEL)
5			Norco Dr/6th St	Limonite Ave	-	Mitigated by I-15 Tolled Express Lanes (TEL)
6		SB	Cantu Galeano Ranch Rd	Limonite Ave	-	Mitigated by I-15 Tolled Express Lanes (TEL)
			Limonite Ave	Norco Dr/6th		
7			Cajalco Rd	Indian Truck Trail	$37,825,000	Cost reduced by TUMF inclusion of I-15 at Temescal Canyon
8			El Cerrito Rd	Cajalco Rd	$10,408,000	Cost reduced by TUMF inclusion of I-15 at Cajalco
9	SR-60	EB	Rubidoux Blvd	Market St	$40,234,000	
			Market St	Main St		
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr	$26,513,000	
			Central Ave/Watkins	Martin Luther King		
10c			Martin Luther King Blvd	SR-91	$55,081,000	
11			Center St Off-Ramp	Riverside County Line/Iowa	$42,212,000	Cost reduced by TUMF inclusion of I-215 at Highgrove/Center
12		SB	Martin Luther King Jr	Sycamore Canyon Rd	$13,403,000	
13			Van Buren Blvd	Case Rd	$95,365,000	Cost reduced by TUMF inclusion of I-215 at Perris, Nuevo, Placentia (MCP), Ramona and Harley Knox
14	SR-91	NB	Riverside County Line	Green River Rd Off-Ramp	-	Mitigated by SR-91 Express Lane Extension Project
			Green River Rd Off-Ramp	SR-71		
			SR-71	Serfas Club Dr Off-Ramp		
15			Serfas Club Dr Off-Ramp	Grand Blvd Rd Off-Ramp	-	Mitigated by SR-91 Express Lane Extension Project
16			On-Ramp from SB-I-15	On Ramp from NB- I-15	$7,611,000	
17			McKinley St Off Ramp	Pierce St	-	Mitigated by SR-91 Express Lane Extension Project
18			Pierce St	Magnolia St	$13,040,000	
19		SB	Serfas Club Dr Off-Ramp	Lane Add at SR-71	-	Mitigated by SR-91 Express Lane Extension Project
			Lane Add at SR-71	Riverside County Line/Iowa	-	
Sum Total:					***$385,335,000***	

Table 2: Total Logistics Cost Share

RCTC Truck Study and Regional Logistics Mitigation Fee Capacity Improvement Project Adjusted Conceptual Cost Share Summary							
ID	***Route Name***	***Dir***	***Beginning***	***End***	***Total Conceptual Project Cost***	***Logistics Attributable Share***	***Logistics Cost Share***
1	I-15	NB	SR-79 S	Rancho California Rd	$36,237,000	0.7%	$258,000
			Rancho California Rd	Winchester Rd			
3			Clinton Keith Rd	Baxter Rd	$7,406,000	0.3%	$19,000
7		SB	Cajalco Rd	Indian Truck Trail	$37,825,000	2.2%	$820,000
8			El Cerrito Rd	Cajalco Rd	$10,408,000	1.4%	$142,000
9	SR-60	EB	Rubidoux Blvd	Market St	$40,234,000	31.8%	$12,802,000
			Market St	Main St			
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr	$26,513,000	30.0%	$7,963,000
			Central Ave/Watkins	Martin Luther King			
10c			Martin Luther King Blvd	SR-91	$55,081,000	13.3%	$7,317,000
11			Center St Off-Ramp	Riverside County Line/Iowa	$42,212,000	11.8%	$4,978,000
12		SB	Martin Luther King Jr	Sycamore Canyon Rd	$13,403,000	57.1%	$7,658,000
13			Van Buren Blvd	Case Rd	$95,365,000	4.4%	$4,235,000
16	SR-91	NB	On-Ramp from SB-I-15	On Ramp from NB- I-15	$7,611,000	7.5%	$571,000
18			Pierce St	Magnolia St	$13,040,000	8.3%	$1,078,000
Sum Total:					***$385,335,000***	***12.4%***	***$47,841,000***

A potential fee could be up to $1.28 per square foot (SF) of gross floor area based on the projected growth of about 37.3 million square feet of new warehousing anticipated by 2040 per the 2016 SCAG RTP.

Nexus Study

The California Mitigation Fee Act requires that an impact fee program fulfill the following:

- ✓ Establish a rational nexus/reasonable relationship between the infrastructure need and development impact
- ✓ Fees must be roughly proportional with the impacts of development and the cost of the infrastructure; and
- ✓ A development does not have to exclusively benefit from the infrastructure but can substantially benefit from the overall improvement in regional mobility.

The Nexus Study fulfills these requirements and builds upon the data compiled from the Existing and Future Conditions Analysis and Cost Analysis to establish the relationship between growth related to logistics facilities and truck traffic and the improvements needed to mitigate such growth. The study process includes the confirmation of expected growth in population and employment in the region, and specifically growth in warehousing and logistics uses in the county, applies the regional travel demand model to generate traffic data outputs to identify future capacity deficiencies in the highway network (Table 1 above), and then determines the proportion of those deficiencies that are attributable to new warehousing and logistics related development (Table 2 above). The resultant information is then cross-referenced with project cost information to determine the overall cost of mitigating logistics impacts as the basis for estimating a fee. That cost is then divided by the anticipated rate of growth in new warehousing and logistics developments in Riverside County to determine the fair share fee amount, as shown in Table 3 below.

Table 3: Potential Logistics Impact Fee

Logistics and Warehouse Impact Fee for Riverside County	
Logistics Cost Share of Freeway Mitigation	$47,841,000
Growth in Warehouse Gross Floor Area in Square Feet	37,332,179
Fee per Square Foot of Gross Floor Area	**up to $1.28**

Public Outreach

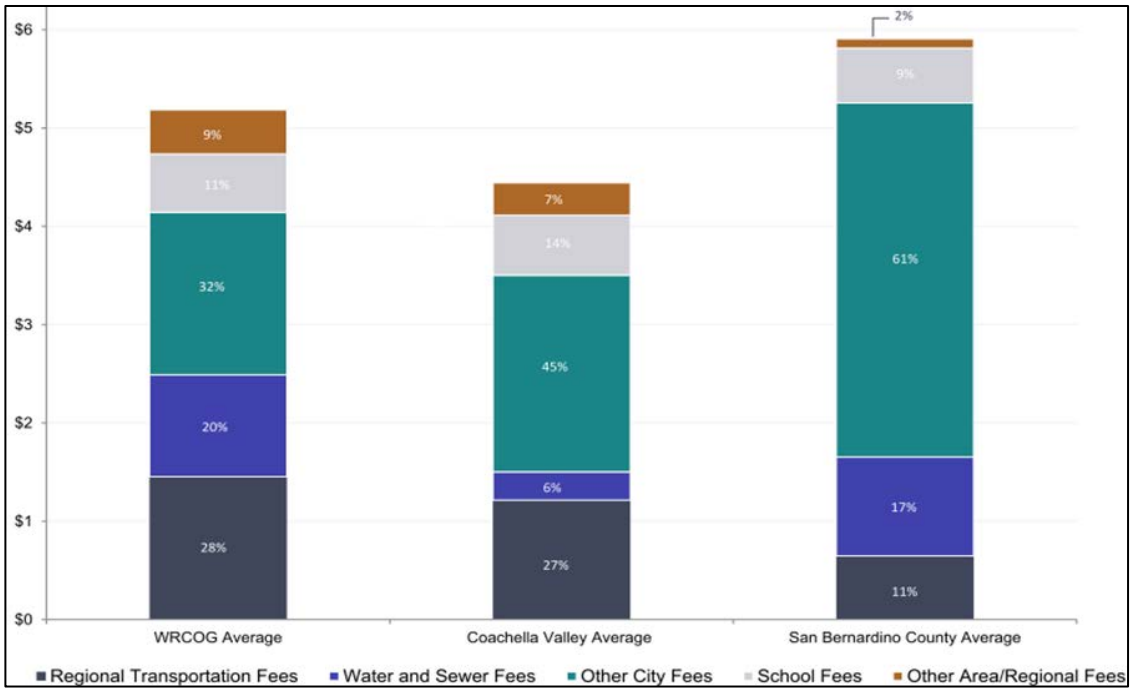
In addition to working with the study advisory team, staff also provided updates on the study to the Commission's Technical Advisory Committee (TAC), comprised of Public Works Directors and City Engineers, and other regional bodies such as the WRCOG City Managers TAC and, the SCAG Transportation Committee.

Stakeholder workshops were held on September 28, 2018 and December 7, 2018, to target public and private stakeholders, such as local and regional agencies and the development community. The workshops were advertised via the website, social media, the study advisory team, and partnering-agency distribution lists. In addition, a webpage for the study, located at www.rctc.org/feestudy was also made accessible for stakeholders to submit comments and review study materials. There was a total of about 42 attendees at both workshops. The majority of the comments and questions received were general in nature regarding who the fee would apply to and what types of projects the fee revenues would be allocated towards. Some comments were more technical regarding the methodology and calculation of the fee and were addressed with specific parties during study advisory meetings.

Potential Locational Effects of a Logistics Fee

The study also analyzed the potential locational impacts a logistics mitigation fee might have on economic development in the county. Research indicates that a logistics mitigation fee would likely have limited impacts on demand for warehouse development in Riverside County. For example, it is estimated that total development costs in Western Riverside County is about $121.10 per square feet for industrial buildings and a proposed logistics fee of up to $1.28 would increase the total by about 1 percent. In comparison, the total development costs in Los Angeles County is about 55 percent higher than the Inland Empire. Additionally, impact fees are generally higher in San Bernardino County compared to Riverside County, although fees vary widely. A potential logistics fee of $1.28/SF in Riverside County would make the average for Western Riverside County about $0.50 higher than the San Bernardino County average as shown in Figure 2 below.

Figure 2: Current Average Development Impact Fee Costs Per Square Foot and Proportions in Inland Empire Jurisdictions



Source: WRCOG, Updated Analysis of Development Impact Fees in Western Riverside County, 2019

Next Steps

Staff is recommending the Commission approve the Logistics Mitigation Fee Nexus Study. The approval of the Nexus Study does not constitute the pursuit of a fee program, but rather fulfills the Commission's obligation to complete the analysis per the settlement agreement. Should the Commission decide to pursue a fee program, staff would return at a later time for the approval of an implementation plan including a proposal on the establishment of a fee administrator. The Commission's current governing authority does not allow for fees to be collected directly by the Commission; therefore, should a program be implemented the Commission would either have to create a Joint Powers Authority or another regional governing body would have to be responsible for administering the fee program. If implemented, the formal adoption and public hearing process for the Nexus Study and fee program would take place.

Fiscal Impact

There is no financial impact for this item.

Attachments:

1) Nexus Study, April 2019
2) Existing and Future Conditions, October 2017
3) Supplemental: Existing and Future Conditions, March 2018
4) Funding and Cost Analysis, June 2018
5) Potential Locational Effects of a Riverside County Logistics Mitigation Fee, April 2019

RCTC TRUCK STUDY AND REGIONAL LOGISTICS MITIGATION FEE

Final Technical Memorandum: Task 3 – Nexus Study

Prepared for :

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

Prepared by:

WSP

In partnership with

FEHR & PEERS

Revised: April 2019

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1. INTRODUCTION, BACKGROUND AND PURPOSE

Despite the recent slow-down in the rate of development in the region due to the lasting effects of the economic recession, Western Riverside County remains one of the fastest growing regions in the country. The proximity to Los Angeles, Orange County and San Diego, the availability of comparatively affordable land, and the generally high quality of life in area communities each contribute to making Riverside County an attractive place to live and work. However, the continuing rapid rate of growth in the region exceeds the capacity of existing financial resources to meet demand for transportation infrastructure. Traditional transportation funding sources, Measure A and the respective Transportation Uniform Mitigation Fee (TUMF) programs, as well motor fuel tax revenues generated by the recent enactment of Senate Bill 1 (SB1), substantially contribute to building and maintaining transportation infrastructure, although these funding sources are considered insufficient to address all the area's transportation funding needs into the future. This is particularly the case for the freeway system in Western Riverside County where existing needs, anticipated future growth and the fluctuating increase in land and material costs exceed the capability of current local, state and federal programs to meet future funding needs.

The projected growth in Western Riverside County can be expected to significantly increase congestion and degrade mobility if substantial additional investments are not made in the transportation infrastructure. This challenge is especially critical for the freeway system which provides the foundation for the area's transportation system and is recognized as an essential element for sustaining the regional economy. Further increases in congestion and degradation in mobility on the freeway system will have a considerable impact on the economy and overall quality of life in Western Riverside County.

The impact of trucks and other traffic associated with warehousing and logistics uses has increasingly emerged as an issue of concern in Riverside County as more of these developments are located within the county. The issue of adequate mitigation of the impacts of these uses on regional freeways recently culminated with a multi-party lawsuit involving mitigation of the Highland Fairview development in Moreno Valley. As part of a settlement agreement between the respective parties to the lawsuit, it was agreed that the Riverside County Transportation Commission (RCTC) would undertake a regional truck study to verify the cumulative level of impact of warehousing and logistics uses on the freeway system in Riverside County as the basis for establishing a regional logistics mitigation fee. This Nexus Study represents a critical milestone in the RCTC Truck Study and Development and Implementation of Regional Logistics Mitigation Fee work effort.

The RCTC Truck Study and Development and Implementation of Regional Logistics Mitigation Fee is intended to verify the anticipated rate of growth in warehousing and logistics-related development in Riverside County, and to quantify the associated level of traffic impacts on the Riverside County highway system because of the expected growth in warehousing and logistics

activities. In quantifying impacts, the study is also intended to determine the amount that each new warehousing or logistics development should pay in lieu of completing actual freeway improvements to mitigate the cumulative regional traffic impacts specifically associated with truck trips generated by new warehousing and logistics developments. The findings of this study are intended to provide the framework for implementing a program to collect impact fees that will contribute to mitigating the truck traffic impacts associated with new warehousing and logistics developments in Riverside County. Such a program can help to ensure that all new logistics-related development approved in Riverside County will bear a proportional fair share of the cost of building transportation infrastructure to address future transportation needs.

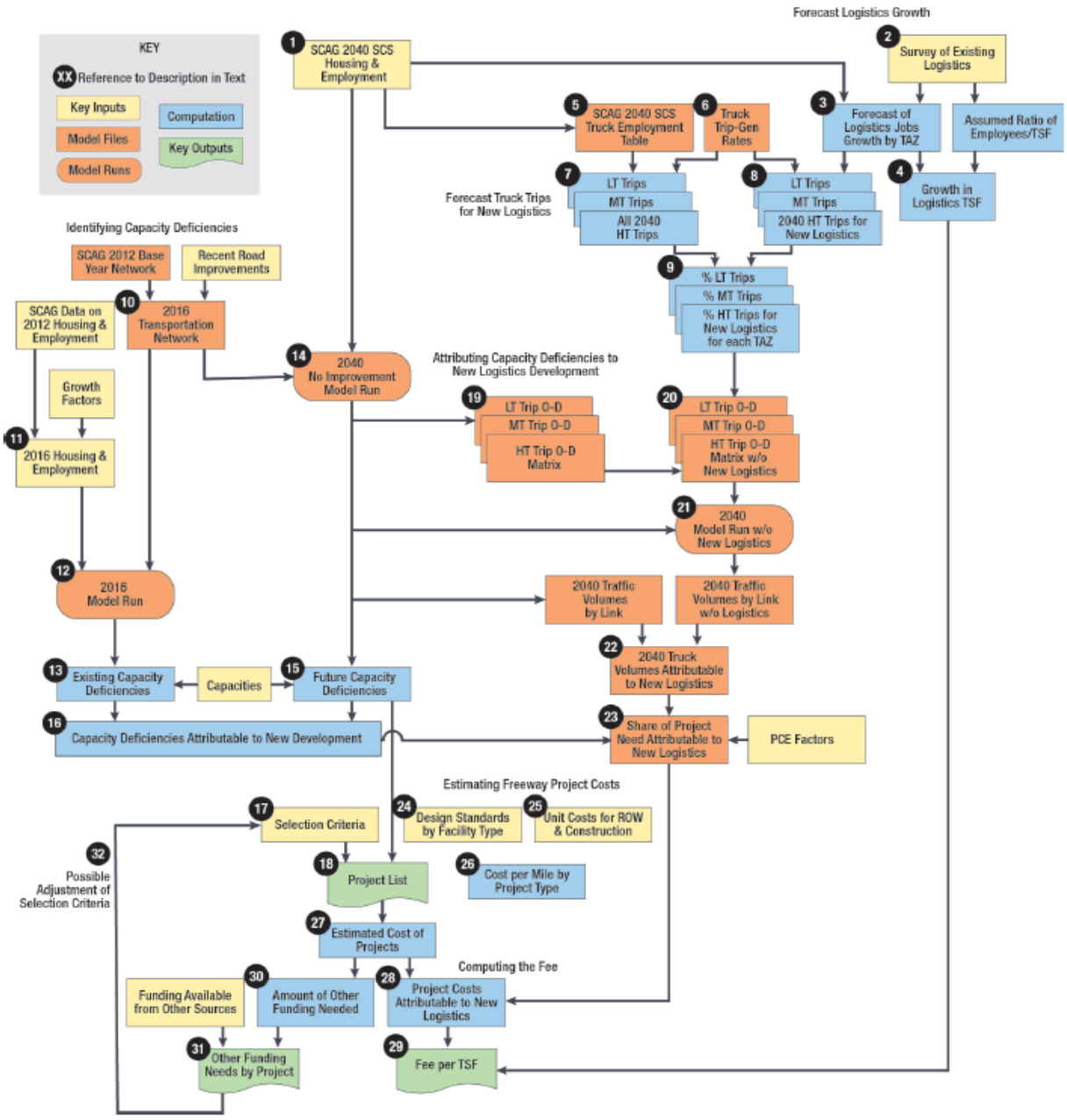
This technical memorandum represents the third in a series of documents that will verify the rate of new warehousing and logistics related developments in Riverside County, the associated truck trip generation rates and cumulative regional traffic impacts, the cost to mitigate these impacts, and the fair share basis for collecting a potential fee. This document summarizes the technical evaluation efforts and presents the analysis findings developed as part of the prior study tasks to calculate a fair share fee amount and document the rational nexus for a regional logistics mitigation fee.

1.1. Nexus Study Process

The various steps of the fee calculation process that contribute to accomplishing this task are summarized in the following sections of this document. The study process starts by confirming the expected growth in population and employment in the region, and specifically growth in warehousing and logistics uses in Riverside County, applies the regional travel demand model to generate traffic data outputs to identify future capacity deficiencies in the highway network, and then determines the proportion of those deficiencies that are attributable to new warehousing and logistics related development. The resultant information is then cross-referenced with project cost information to determine the overall cost of mitigating logistics impacts as the basis for estimating a fee. This cost is then divided by the anticipated rate of growth in new warehousing and logistics developments in Riverside County to determine the fair share fee amount.

The subsequent chapters of this Nexus Study document describe the various assumptions, data inputs and analysis leading to the determination of a fee that represents the maximum "fair share" amount that can be charged to new warehouse and logistics uses to mitigate the indirect cumulative regional impacts of the development on the freeway network. The overall process for establishing the fee nexus is illustrated in the flow chart in **Figure 1.1** outlining the various technical steps in this fee calculation process. Each technical step that was followed to determine the fee and establish the program nexus is described in the subsequent sections, with reference to the numbers denoted on the flow chart correlating to the various steps. The flow chart also incorporates color coding of the steps to indicate those steps that involved the application of the SCAG regional travel demand model, steps that utilized other input data, steps that are computations of various inputs, and key outputs.

Figure 1-1: Flowchart of Key Steps in the Nexus Study Process



2. FORECASTING LOGISTICS GROWTH AND TRAFFIC IMPACTS

This initial phase of the study process is to inventory existing logistics facilities in Riverside County, confirm the forecast growth in logistics facilities through 2040, and determine the magnitude and location of logistics related truck traffic impacts. This effort encompasses the first nine steps illustrated in the study process flow chart.

2.1. FORECASTING LOGISTICS GROWTH

The settlement agreement that prompted the study effort specifically cites warehouse and logistics uses as the subject of the analysis and potential fee. As a precursor to inventorying and forecasting logistics facilities and their impacts, specific types of logistics facilities were defined to be the subject of the analysis and resultant fee based on the functions they serve, the types of businesses that utilize them, and their design and trip generation characteristics. A range of data sources were reviewed including the South Coast Air Quality Management District (SCAQMD) *High-Cube Warehouse Vehicle Trip Generation Analysis*, the SCAG *Industrial Warehousing Study*, the Institute of Traffic Engineers (ITE) *Trip Generation Manual*, and the recently-released SCAQMD/NAIOP/ITE study of vehicle trip generation for high-cube warehouses, as well as available industry databases to identify an appropriate definition of the subject uses. The various datasets use different systems to classify industries; the North American Industry Classification System (NAICS) and the Standard Industrial Classification (SIC). The U.S. Census Bureau uses the NAICS structure. Similarly, SCAG uses the NAICS structure as the basis for developing regional employment forecasts as part of its long-range planning responsibilities.

The NAICS applies a 6-digit hierarchical coding system to classify all economic activity into 20 industry sectors. Five sectors are mainly goods-producing sectors and 15 are entirely services-producing sectors. Transportation and Warehousing (Industry Code 48 & 49) is defined in NAICS as "Industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. Modes of transportation include air, rail, water, road, and pipeline. (Example: Freight Trucking Companies, Warehousing and Storage, Couriers and Delivery Services.)"[1]. The Warehousing subcategory (NAICS subcategory code 493) is included within this category and was determined to be the most applicable subcategory for the purposes of this study.

The current SCAG Sustainable Community Strategy (SCS) was adopted on April 7, 2016 and constitutes the officially-adopted land use forecast for the region. The horizon year for the SCS is 2040. The primary SCS forecast for non-residential development incorporates units of jobs (as opposed to acres, square feet, etc.) for a full range of land uses, including Warehousing employment. As the adopted growth forecast for the SCAG region, the SCAG SCS provides the starting point for forecasting logistics growth in Riverside County.

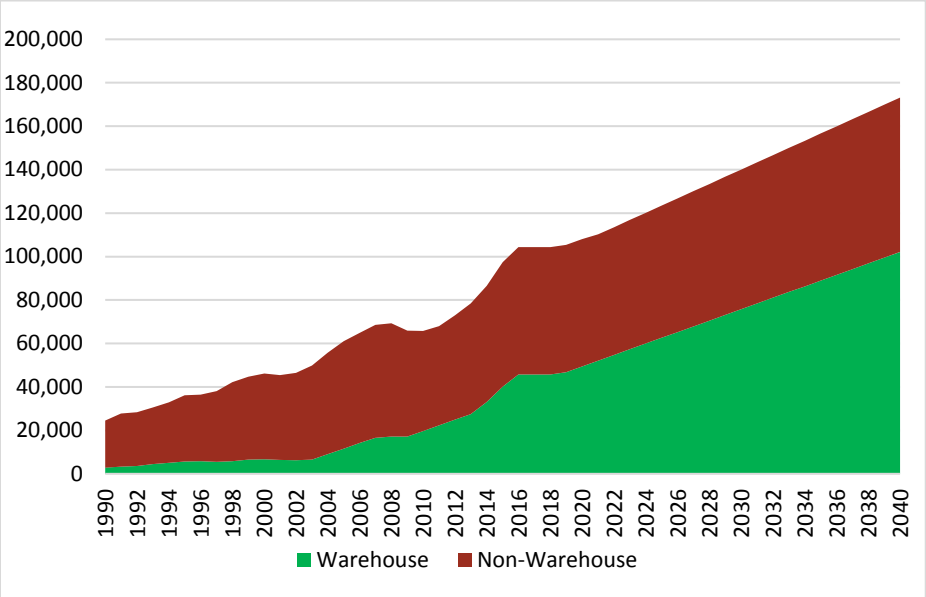
The SCAG SCS base year (2012) jobs in the Warehousing subcategory was compared to other sources as a reasonableness check. The California Employment Development Department

[1] North American Industry Classification System United States, Executive Office of the President Office of Management and Budget, 2017

(EDD) Metropolitan Statistical Area (MSA) employment data by detailed NAICS industries code were utilized for this purpose. The SCAG SCS base year (2012) employment in Warehousing in Riverside and San Bernardino Counties is 15,821 jobs, which is less than two-thirds of the 24,900 Warehousing jobs indicated for the same period in the EDD employment data for the Riverside-San Bernardino-Ontario MSA. For this reason, the SCAG SCS data were adjusted to support the travel demand forecasting completed as part of this study.

EDD collects data on employment by detailed NAICS industries, but only at the MSA geographic level. Moreover, EDD does not include long-term forecasts, only past observed data. Therefore, the EDD historical data for the Riverside-San Bernardino-Ontario MSA had to be extrapolated into the future and disaggregated by county. The adjustments were accomplished by first observing the historical trend for Warehousing jobs in the Riverside-San Bernardino-Ontario MSA and extrapolating for the years 2016 to 2040. As illustrated in **Figure 2-1**, 2003 marks a notable inflection point where the rate of growth in warehousing increases relative to the growth of transportation/warehousing employment overall. Therefore, the post-2003 trend was used to extrapolate from 2016 to 2040 for both for the Warehousing sub-category and the rest of Transportation sub-categories as the basis for adjusting the employment data in the model.

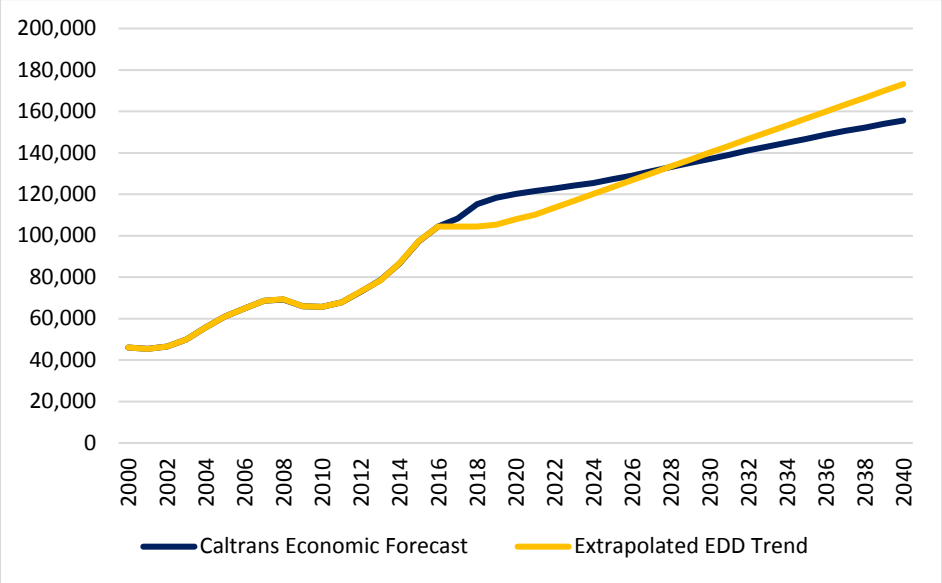
Figure 2-1: EDD Warehouse and Other Transportation Employment Extrapolated Trends (Riverside-San Bernardino-Ontario MSA)



Caltrans' Transportation Economics Branch provides annual county-level projections of employment by 2-digit NAICS industry categories through 2050. A comparison of the Caltrans data for Riverside and San Bernardino Counties combined reveals the total jobs for

Transportation and Warehousing correlates very closely with the EDD historical trend extrapolation described previously, as illustrated in **Figure 2-2**. Considering the close correlation of totals between datasets, the proportion of total jobs in Transportation and Warehousing in Riverside County compared to San Bernardino County based on the Caltrans dataset was used to disaggregate the EDD extrapolated Warehouse jobs by MSA into county subtotals.

Figure 2-2: Transportation Employment - Caltrans Transportation Economics Branch Forecast vs. Extrapolated EDD Trend (Riverside-San Bernardino-Ontario MSA)



The preceding steps produced a control total for the growth in warehouse jobs in Riverside County accomplishing Step 1 in the study process as illustrated in **Figure 1-1**. However, accomplishing this first step provided no indication about where in the county these jobs would be located. Locational data is needed so that the anticipated growth in warehouse and logistics development will be properly represented in the travel demand forecast in terms of where resultant traffic impacts will affect the freeway system. The best available data for distributing warehousing growth across Riverside County can be derived from the SCAG *Industrial Warehousing Study*, some products of which are available for Heavy Duty Truck modeling purposes. For the purposes of the *Industrial Warehousing Study*, SCAG developed forecasts of the rate of warehouse growth in terms of the gross floor area of buildings as well as jobs. **Table 2-1** summarizes the forecasts developed as part of the SCAG study effort and incorporated into the SCAG Heavy Duty Truck Model that supported the 2016 RTP/SCS.

Table 2-1: Warehouse Trends in Riverside County, 2012-2040

Year	High Cube Warehousing		Low Cube Warehousing	
	Warehouse Area (square feet)	Employment	Warehouse Area (square feet)	Employment
2012*	41,281,541	1,793	8,833,418	1,804
2016	48,837,363	2,810	14,472,627	2,533
2020	56,393,177	3,819	20,111,826	3,256
2030	64,664,947	6,120	26,810,782	5,070
2040	69,410,192	7,427	31,231,977	6,185

** The area shown in 2012 includes total available floor space. The area shown in 2016 and years after includes planned occupied floor space.*
Source: SCAG 2016 RTP/SCS Heavy Duty Truck Model

Although the SCAG warehouse employment forecast appeared to be low when compared to other data sources, as described previously, the warehouse area forecast appears to be more consistent with the amount of existing and planned warehouse development in Riverside County. Furthermore, as a check of the reasonableness of the EDD extrapolation of Warehouse sector employment in Riverside County, the jobs were multiplied by the square foot per employee ratio for warehousing uses as published by the National Association for Industrial and Office Parks (NAIOP) *Logistics Trends and Specific Industries that Will Drive Warehouse and Distribution Growth and Demand for Space* in March 2010. As indicated in **Table 2-2**, when the extrapolated EDD warehouse employment trend forecast is multiplied by the 2,241 square feet per employee ratio cited by NAIOP, the resultant interpolated growth in warehouse building area is similar, although slightly lower, than the rate forecast by SCAG in the *Industrial Warehousing Study* and utilized in the Heavy Duty Truck Model. For this reason, the rate of growth in the gross floor area of warehouses in Riverside County was accepted by the Study Review Team as the basis for calculating the fee accomplishing Step 4 in the study process, as illustrated in **Figure 1-1**. This finding also affirmed using the data to guide the disaggregation of EDD extrapolated warehouse jobs in Riverside County for travel demand modeling purposes.

Table 2-2: Warehouse Growth in Riverside County, 2016-2040

	Growth (2016 to 2040)	
	Employees	Square Feet of Gross Floor Area
SCAG 2016 RTP/SCS Forecast	8,269	37,332,179
Extrapolated EDD Forecast*	14,582	32,678,262

** Forecast based on EDD extrapolated employment trend and 2,241 square feet per employee ratio from NAIOP Logistics Trends and Specific Industries that Will Drive Warehouse and Distribution Growth and Demand for Space, March 2010*
Source: SCAG 2016 RTP/SCS Forecast & Heavy Duty Truck Model; EDD

Table 2-3 arrays the forecast growth in the gross floor area of warehousing in Riverside County based on the SCAG 2016 RTP/SCS forecast presented in the *Industrial Warehouse Study* and utilized in the Heavy Duty Truck Model. The extrapolated growth in warehouse jobs in Riverside County was multiplied by the percentage of warehouse job growth for each Traffic Analysis Zone (TAZ) as derived from the SCAG Heavy Duty Truck Model to produce the adjusted forecast of the growth in warehouse employment by TAZ to support the travel demand forecasting conducted as part of this study, accomplishing Step 3 in the study process, as illustrated in **Figure 1-1**.

Table 2-3: Warehouse Growth by TAZs in Riverside County (in thousand square feet gross floor area and percentage)

TAZ_ ID	High-cube 2016	Low-cube 2016	High-cube 2040	Low-cube 2040	Total Change 2016-2040	Percent change 2016 - 2040	Percent of total growth countywide
43344	5,417	2,323	20,136	8,628	21,024	271.63%	56.31%
43336	641	1,497	3,198	7,461	8,521	398.55%	22.82%
43338	101	231	355	822	845	254.52%	2.26%
43148	4,437	410	4,437	1,029	619	12.77%	1.66%
43571	-	-	594	-	594	0.00%	1.59%
43130	2,050	465	2,050	988	522	20.80%	1.40%
43364	-	182	331	293	442	242.86%	1.18%
43573	-	-	421	-	421	0.00%	1.13%
43302	655	-	1,072	-	417	63.66%	1.12%
43305	302	-	604	-	302	100.00%	0.81%
43264	-	-	300	-	300	0.00%	0.80%
43187	-	119	-	340	221	185.71%	0.59%
43575	156	37	311	75	193	100.00%	0.52%
43260	2,031	820	2,031	1,002	180	6.38%	0.48%
43452	172	-	343	-	172	99.42%	0.46%
43345	-	-	-	163	163	0.00%	0.44%
43448	-	60	-	209	150	248.33%	0.40%
43286	-	-	-	149	149	0.00%	0.40%
43332	101	44	202	88	145	100.00%	0.39%
43249	3,197	1,716	3,197	1,860	144	2.93%	0.39%
43395	131	-	262	-	131	100.00%	0.35%
43415	2,992	244	2,992	369	124	3.86%	0.33%
43134	474	454	474	574	120	12.93%	0.32%
43454	119	-	237	-	119	99.16%	0.32%
43168	491	-	491	116	116	23.63%	0.31%

43409	-	-	-	108	108	0.00%	0.29%
43366	-	-	-	89	89	0.00%	0.24%
43236	-	83	-	165	83	98.80%	0.22%
43399	-	81	-	162	81	100.00%	0.22%
43265	-	-	-	80	80	0.00%	0.21%
43488	-	78	-	155	78	98.72%	0.21%
43563	308	162	308	232	70	14.89%	0.19%
43246	328	487	328	547	61	7.36%	0.16%
43276	-	59	-	117	59	98.31%	0.16%
43429	-	57	-	115	57	101.75%	0.15%
43162	-	-	-	56	56	0.00%	0.15%
43181	821	61	821	112	51	5.78%	0.14%
43420	286	48	286	96	48	14.37%	0.13%
43261	-	120	-	163	43	35.83%	0.12%
43136	289	193	289	233	40	8.30%	0.11%
43310	-	40	-	80	40	100.00%	0.11%
43125	5,048	692	5,048	727	36	0.61%	0.10%
43474	-	32	-	65	32	103.13%	0.09%
43397	-	31	-	62	31	100.00%	0.08%
43188	380	145	380	175	30	5.71%	0.08%
43214	-	285	-	311	27	9.12%	0.07%
TOTAL	30,927	11,256	51,498	28,016	37,334	88.50%	100.00%

Source: SCAG Industrial Warehouse Study/Heavy Duty Truck Model

2.2. Forecasting Traffic Impacts

A key step in the process of determining the basis for any impact fee program is identifying the extent of the impact that will result from new development activity. For the purposes of this study, the SCAG regional travel demand model was the primary tool used for identifying existing and future travel demands and capacity deficiencies, and determining attribution of deficiencies to new logistics trucking[2]. While the SCAG regional model provides the primary tool for quantifying the traffic impacts of new warehousing and logistics development, additional information regarding the trip generation characteristics of warehousing and logistics land uses is used to validate and refine the SCAG model results for the purposes of the study evaluation. The process for quantifying the trips associated with new logistics centers is summarized in the following section.

[2] The following model analysis was performed by WSP based upon modeling information originally developed by the Southern California Association of Governments (SCAG). SCAG is not responsible for how the model is applied or for any changes to the model scripts, model parameters, or model input data. The resulting modeling data does not necessarily reflect the official views or policies of SCAG. SCAG shall not be held responsible for the modeling results and the content of the documentation.

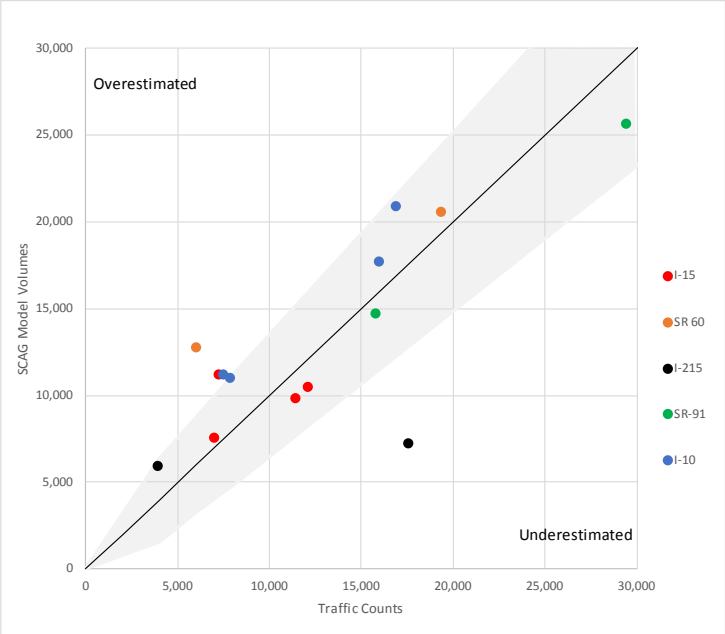
2.2.1. SCAG Model Adjustment and Re-Validation

The California Transportation Commission (CTC) *2010 California Regional Transportation Plan Guidelines* states the following about adjusting and re-validating a regional travel model prior to using it for sub-regional studies:

> *"Agencies that use MPO models for purposes other than regional planning should ensure that the model provides the appropriate scale and sensitivity for applications at a sub-regional level such as corridor, sub-area, or local planning studies. Below the regional level, model refinements are likely necessary to ensure the model meets the validation targets established in these guidelines and is appropriately sensitive to smaller scale changes associated with sub-regional studies."*

In accordance with the CTC guidelines and best industry practice, the SCAG model was reviewed, adjusted and revalidated to improve the accuracy of the results with respect to freeways in Riverside County. This process involved a series of diagnostic tests being performed on the SCAG model to test its validity for use in a freeway impact fee nexus study. The tests showed that the model reasonably represented truck traffic on Riverside County freeways. For example, **Figure 2-3** compares the volume of trucks at various freeway locations in the model versus the volumes provided in the Caltrans Performance Measurement System (PeMS) data. The results reflect a reasonable correlation between the model and actual values, and no systemic tendency towards over- or under-estimating the truck volumes and percentage of total traffic.

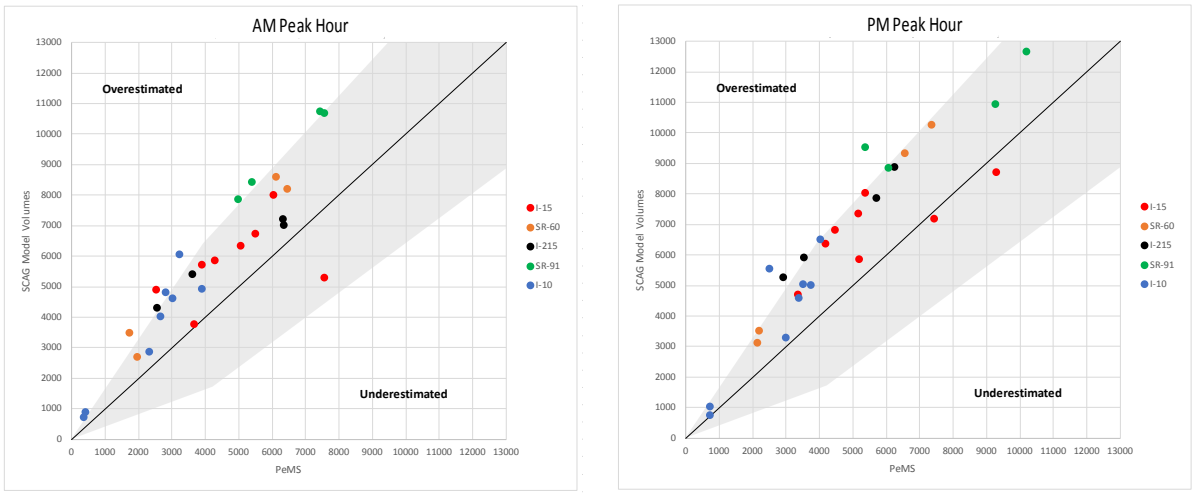
Figure 2-3: Comparison of Modeled to Actual Daily Truck Volumes on Riverside County Freeways



However, the tests also revealed that there was an issue warranting adjustment. **Figure 2-4** shows link flows from a SCAG model run for 2016 compared to PeMS data for the same year. This data was evaluated two ways, namely:

- The shaded areas in **Figure 2-3** and **Figure 2-4** show the allowable deviation based on Caltrans guidelines. The allowable deviation reflects the fact that the actual traffic volumes on roads fluctuate from day to day, so the "normal" traffic volume that a model should replicate is a range rather than a fixed value. A model is considered generally valid if 75% of the points fall within the allowable deviation. In this case 77% of the sites are within the allowable range in the AM peak hour and 86% in the PM peak hour, so the model passes this test of validity.
- The second test was to see whether there was a general tendency for the model to over-estimate or under-estimate total traffic volumes on freeways in Riverside County. **Figure 2-4** shows that the model did not satisfy this test; consistently over-estimating traffic on Riverside County freeways by an average of 26% in the AM peak hour and 20% in the PM peak hour.

Figure 2-4: AM and PM Peak Hour Comparison of PEMS Total Traffic Volumes and SCAG Model Total Traffic Volumes

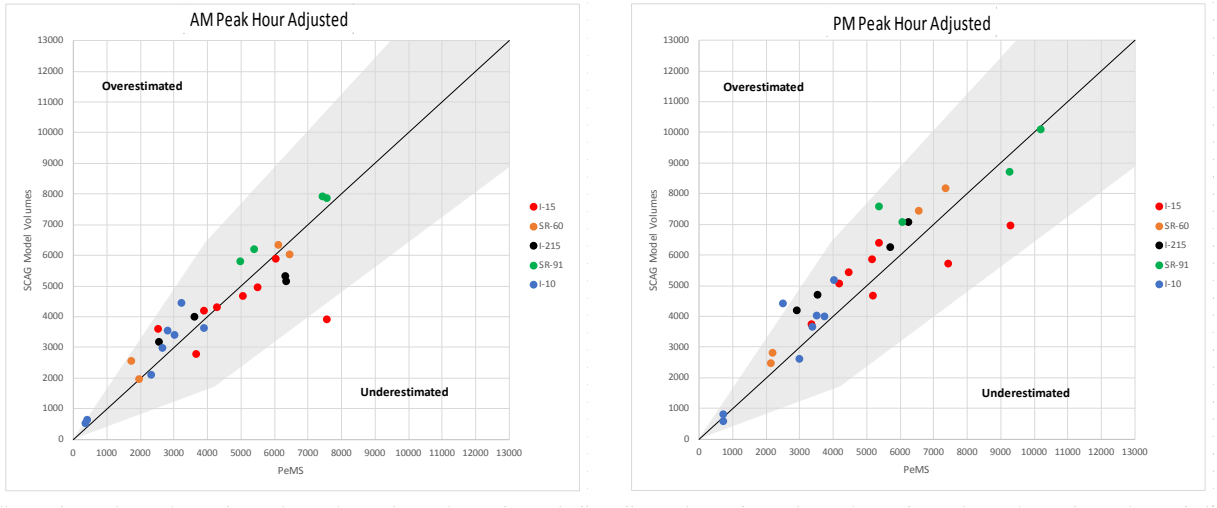


The model overestimation was corrected by factoring down model volumes in a post-model adjustment[3]. Only car volumes were factored down, not truck volumes, because truck volumes did not show the same trend of overestimation, as illustrated previously in **Figure 2-3**. **Figure 2-5** shows the results after applying factors of 0.74 and 0.80 in the AM peak hour and PM peak

[3] Additional details regarding the model testing, adjustments and re-validation are presented in *Technical Memorandum 1: Existing and Future Conditions* (WSP, October 2017) and *Technical Memorandum: Task 2 – Funding and Cost Analysis* (WSP, June 2018).

hour, respectively. After adjustments, the R-squared[4] value increased from 0.11 to 0.79 in the AM peak hour and from 0.51 to 0.84 in the PM peak hour, satisfying the recommended guidelines for model validity.

Figure 2-5: AM and PM Peak Hour Comparison of PEMS Total Traffic Volumes and SCAG Model Adjusted Total Traffic Volumes



2.2.2. Forecasting Traffic Volumes and Identifying Traffic Impacts

The SCAG Model's 2016 scenario year network was used for all model runs with the extrapolated 2016 and 2040 socio-economic forecasts described previously in **Section 2.1** providing the basis for the demand inputs in Riverside County. These model files were from the version of the SCAG model used to develop the 2016 RTP/SCS. The SCAG model outputs were factored in accordance with the post-model adjustment described in **Section 2.2.1** to yield adjusted forecast total traffic volumes on the various freeways in Riverside County for analysis years 2016 and 2040. This process to forecast 2016 and 2040 traffic volumes effectively encompasses steps 10, 12 and 14 as illustrated previously in **Figure 1-1**.

Based on the post-model adjusted total traffic volumes, the volume to capacity (V/C) ratio was computed for each freeway link in Riverside County for the AM and PM peak hours using the capacities and passenger car equivalent (PCE) factors[5] embedded in the SCAG model (steps 13 and 15 in **Figure 1-1**). Per the RCTC *Congestion Management Program*, the adopted minimum Level of Service (LOS) threshold for freeways in Riverside County is LOS "E" meaning that freeway facilities with a V/C ratio of 1.0 or higher are considered deficient.

4 R-squared is a measure of how well the forecast accounts for variations in the traffic counts. R-squared values can range from 0.00, indicating no relationship between the model values and the counts, to 1.00, indicating that the model accounts for all variation in the count data set.

5 PCE factors are used to account for the difference in size, speed, and maneuverability between different classes of vehicles, including the effect of slopes on the operating characteristics of trucks.

Figures 2-6 and **2-8** show the existing V/C ratios on Riverside County freeways for the AM peak hour and PM peak hour, respectively, with green and yellow indicating acceptable V/C ratios (<0.9), orange indicating marginal V/C ratios (0.9 – 1.0) and red indicating deficient V/C ratios (>1.0). Under existing conditions, three current deficiencies were identified on the freeway network in Riverside County: SR-91 in Corona during the both the AM and PM peak hours, I-15 in the Jurupa Valley during the PM peak hour, and I-215 between Riverside and Moreno Valley during the PM peak hour. These congested sections may result in queuing in upstream sections whose V/C ratios would not in themselves be problematic, but may be perceived by drivers as problem sections beyond the actual deficient segment.

Figures 2-7 and **2-9** show 2040 traffic demand assigned to the existing network[6] with no added capacity improvements for the AM and PM peak hours, respectively (i.e. a 2040 "No Improvement" Scenario). Comparing the existing capacity deficiencies with the future deficiencies helps to show where new deficiencies would occur that are entirely attributable to new development. Furthermore, comparing the existing and future V/C ratio on the freeway segments that are currently deficient shows the proportion of the future deficiency that is attributable to new development. The 2040 No Improvmenet results clearly indicate the existing deficiencies worsen and two additional deficiencies in the AM peak hour and five additional deficiencies in the PM peak hour would manifest.

It should be noted that although the following exhibits illustrate the model results for the Western Riverside County, modeling and V/C ratios were done for all freeways in Riverside County. However, the results did not indicate any deficient segments of freeway outside of Western Riverside County, although some modest deterioration of V/C can be observed along I-10 in the Coachella Valley during the 2040 PM peak hour, as illustrated in **Figure 2-9**.

It should also be noted that the model results reflect V/C ratio as the basis for identifying freeway capacity deficiencies. Beyond the embedded capacity of each freeway segment in the SCAG model network, the analysis did not consider operational deficiencies in the freeway network that may contribute to traffic breakdown and congestion (e.g. lane drops, weaving and merging areas, horizontal and vertical alignment, and other design characteristics). These types of operational deficiencies can be considered existing design deficiencies and therefore usually cannot be attributed to the impacts of future new development, although future new development can exacerbate the magnitude of congestion associated with these operational deficiencies. For this reason, V/C is used to identify freeway segments with a capacity deficiency that can be attributable to the additional traffic from new development, while also factoring the extent that existing traffic demand contribute to the deficiency. Operational deficiencies are considered during the development of concepts to mitigate the capacity deficiencies to the extent that addressing the operational deficiencies represents necessary improvement elements to accomplish successful mitigation of the capacity deficiency.

[6] The SCAG existing model network represents the current state of the transportation system in 2016 and does not reflect those projects completed since 2016. In Riverside County, the SR-91 Express Lanes Extension project that included various freeway improvements along SR-91 from the Orange County line to I-15 was completed after 2016. Projects completed after 2016 (as well as projects currently under construction) get reconciled during subsequent study steps, as described in Chapter 4 of this technical memorandum.

Figure 2-6: Existing Deficiencies on Riverside County Freeways during the AM Peak Hour

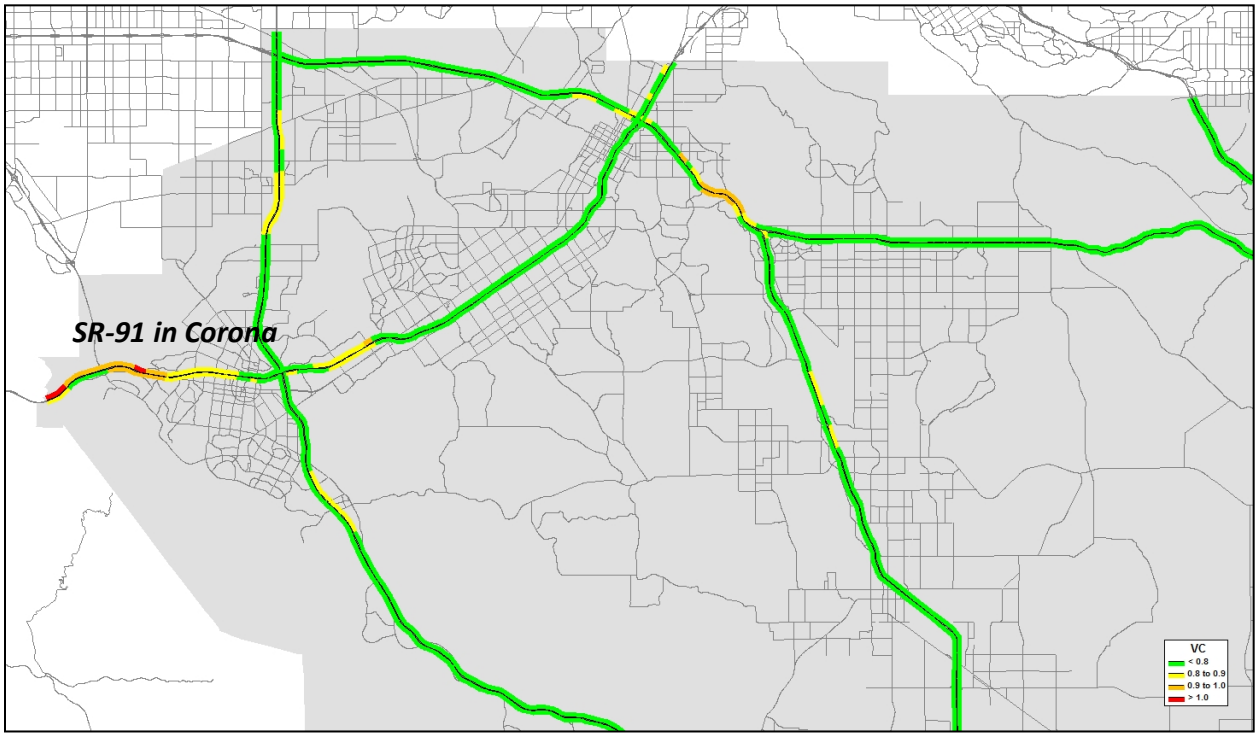


Figure 2-7: Future Deficiencies on Riverside County Freeways during the AM Peak Hour

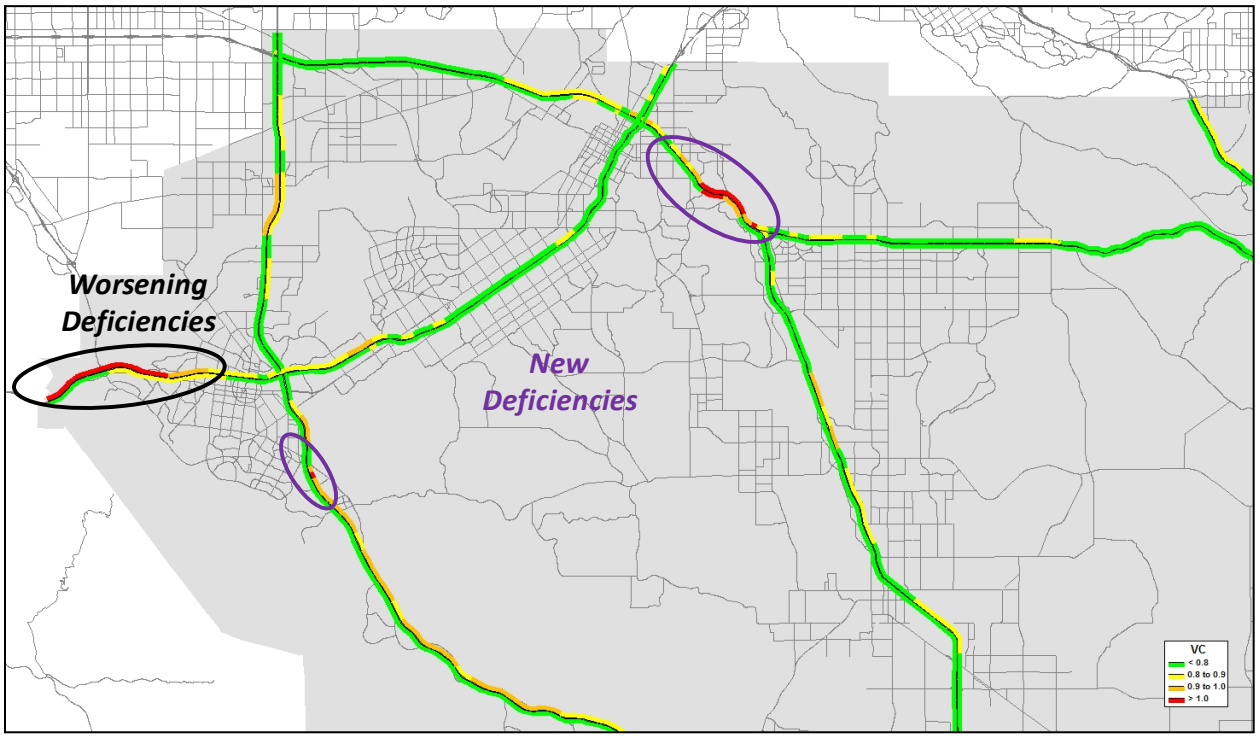


Figure 2-8: Existing Deficiencies on Riverside County Freeways during the PM Peak Hour

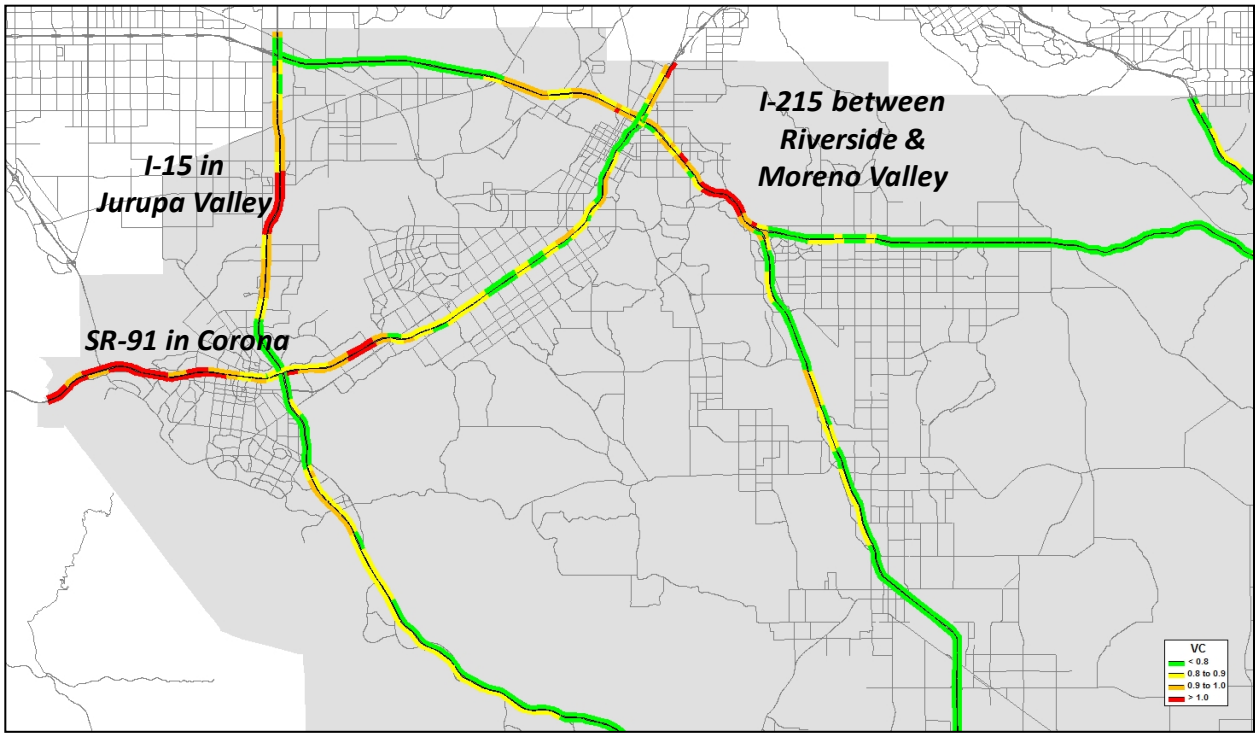
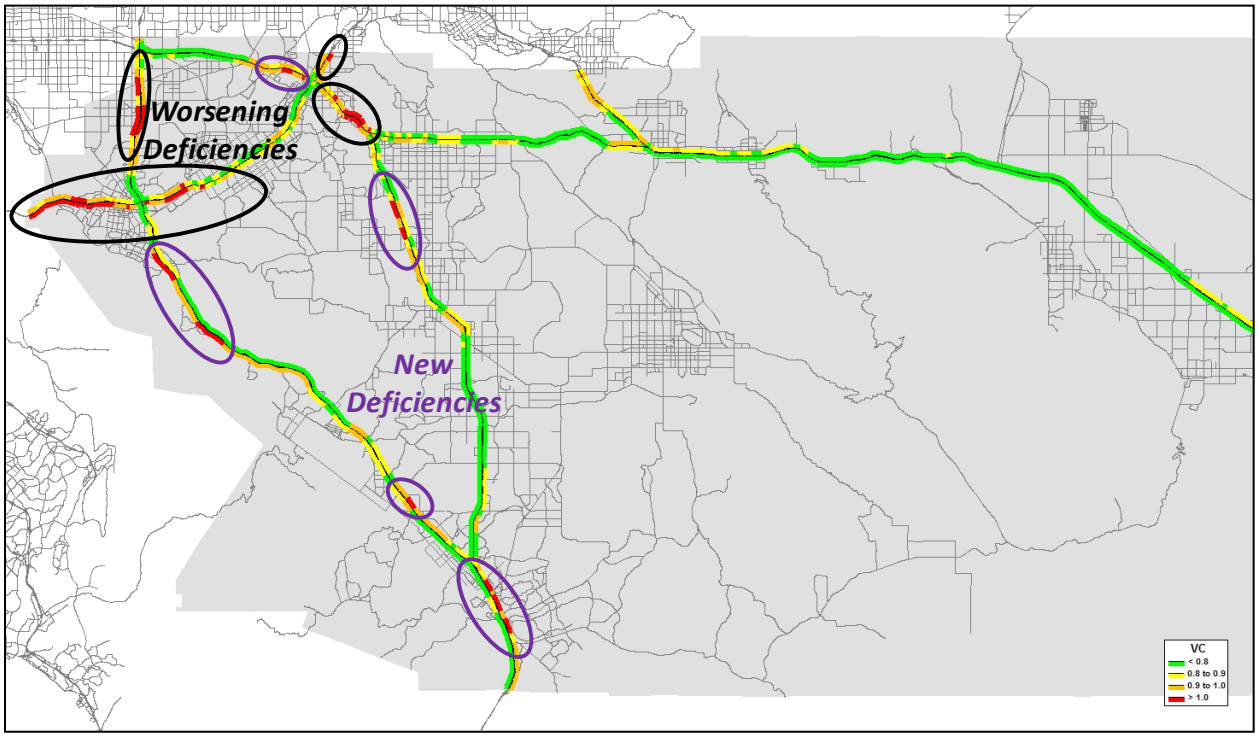


Figure 2-9: Future Deficiencies on Riverside County Freeways during the PM Peak Hour

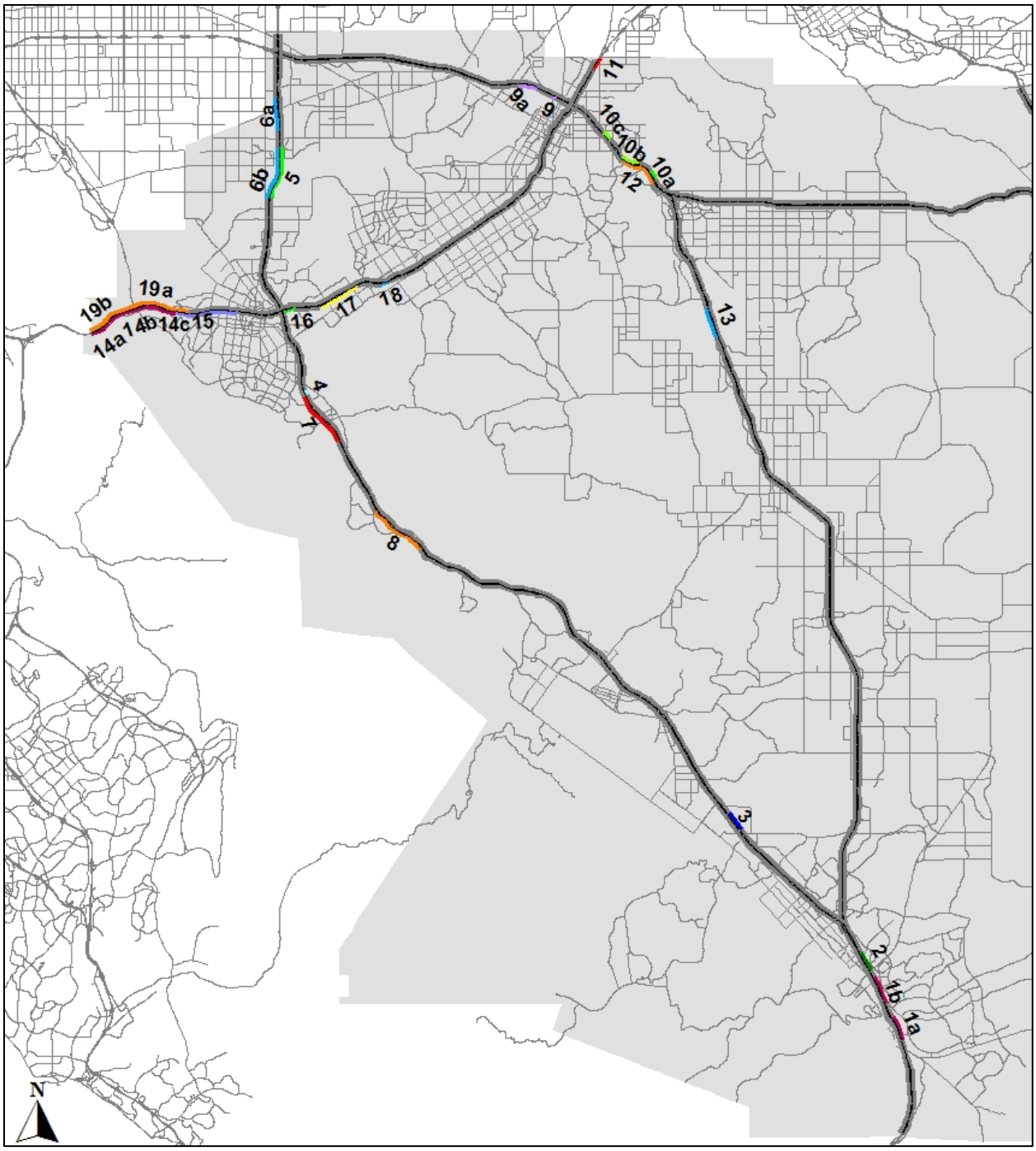


Based on the findings of the V/C analysis, freeway segments identified as being deficient in the 2040 No Improvement Scenario were tabulated. These locations represent the freeway segments where future traffic demands exceed the existing capacity, and therefore require mitigation. These locations are listed in **Table 2-4** and illustrated in **Figure 2-10**. **Section 3** of this report describes the process that was used to determine the share of the deficiency in each of these segments that is specifically attributable to the impacts of new warehousing and logistics developments occurring in Riverside County.

Table 2.4: Capacity Deficient Segments on Riverside County Freeways (2040 No Improvement)

ID	Route	Dir	Beginning	End
1 a,b	I-15	NB	SR-79 S	Rancho California Rd
			Rancho California Rd	Winchester Rd
2			Winchester Rd	Lane Add south of I-15/I-215 Split
3			Clinton Keith Rd	Baxter Rd
4			El Cerrito Rd	Ontario Ave
5			Norco Dr/6th St	Limonite Ave
6 a,b		SB	Cantu Galeano Ranch Rd	Limonite Ave
			Limonite Ave	Norco Dr/6th
7			Cajalco Rd	Indian Truck Trail
8			El Cerrito Rd	Cajalco Rd
9 a,b	SR-60	EB	Rubidoux Blvd	Market St
			Market St	Main St
10 a,b	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr
			Central Ave/Watkins	Martin Luther King
10c			Martin Luther King Blvd	SR-91
11			Center St Off-Ramp	Riverside County Line/Iowa
12		SB	Martin Luther King Jr	Sycamore Canyon Rd
13			Van Buren Blvd	Case Rd
14 a,b,c	SR-91	EB	Riverside County Line	Green River Rd Off-Ramp
			Green River Rd Off-Ramp	SR-71
			SR-71	Serfas Club Dr Off-Ramp
15			Serfas Club Dr Off-Ramp	Grand Blvd Rd Off-Ramp
16			On-Ramp from SB-I-15	On Ramp from NB- I-15
17			McKinley St Off Ramp	Pierce St
18			Pierce St	Magnolia St
19 a,b		WB	Serfas Club Dr Off-Ramp	Lane Add at SR-71
			Lane Add at SR-71	Riverside County Line

Figure 2-10: Capacity Deficient Segments on Riverside County Freeways (2040 No Improvement)



2.3. Attributing Capacity Deficiencies to New Logistics Development

In addition to generating the traffic volume forecasts used as the basis to determine V/C and identify the capacity deficiencies described previously, the SCAG model runs produce several outputs that can be used in the attribution of share to logistics uses. The following section summarizes the process for determining attribution to new logistics development using various outputs from the SCAG model runs.

2.3.1. Percent Attributable to Future Development

Impact fees must be limited to only account for a new development's "fair share" of the cost of needed improvements to mitigate associated impacts. In particular, impacts fees cannot be assessed to directly cover the cost to mitigate existing deficiencies. Therefore, the first step in attributing impacts is to complete a comparison of existing and future freeway deficiencies to determine how much of each future deficiency can be attributed to traffic from future development.

There are three possible situations for each freeway link:

- Freeway volumes are below the capacity of the freeway, even when the traffic from new development is added in. In such cases there is no deficiency. No fee can be collected because no improvement is needed.
- Existing traffic volumes are below the capacity of the freeway, but the addition of traffic from new growth creates a deficiency where none previously existed. In such cases 100% of the deficiency can be attributed to new development.
- There is an existing deficiency that will worsen with the addition of traffic from new growth. In these cases, the percent of the deficiency attributable to new growth is the portion of the excess traffic (excess being the traffic above the capacity of the road) that arises from new growth rather than from existing traffic.

The existing and future traffic for each of the deficient segments idenfied in **Table 2-4** was compared to detemine which of the three possible situations applied. The percent attributable to new development was determined based on this comparison, and the results were tabulated as the share of impact attributable to all new development.

2.3.2. Percent Attributable to New Logistics Trucks in Riverside County

In order to compute the percent of each deficiency that is attributable specifically to warehousing and logistics truck trips, it was necessary to separate the truck trips generated by warehousing and logistics uses from the total traffic forecast during the model assignment process. This process is represented by steps 5 through 9 and 19 through 23 as illustrated in the flowchart in **Figure 1-1**.

This process was accomplished by first modifying the Truck Employment table in the SED input files to the SCAG model to reflect only the growth in warehousing and logistics employment in Riverside County. A select-zone query was then generated during the model

assignment step allowing logistics only truck trips generated by warehouse and logistics uses in Riverside County to be recorded for each link in the model. This specifically isolates the truck trips associated with warehousing and logistics uses in Riverside County from the trips associated with all other land use in the county, as well as the truck trips that are generated outside the county but still traverse freeways within Riverside County (i.e. pass-through trips). A comparison of the Riverside County logistics related truck trips in 2040 to the total traffic forecast in 2040 provides the share of Riverside County logistics related truck trips in 2040 for each deficient segment on Riverside County freeways.

2.3.3. Percent of Freeway Capacity Deficiencies Attributable to New Logistics Development in Riverside County

As described in **Section 2.2.2**, the freeway segments in Riverside County with new or increased deficiencies in either peak hour in 2040 relative to the existing condition in 2016 were identified as deficient segments. For each deficient segment, the share of logistics related truck trips, as described in **Section 2.3.2**, was multiplied by the share of deficiencies attributable to all future growth, as described in **Section 2.3.1**, to determine the percent of each deficiency specifically attributable to new logistics related truck trips. Consistent with the identification of deficiencies based on AM and PM peak hour observations, all these steps were done for both AM and PM peak hour traffic, then the peak hour with the higher percent attributable was selected to represent the link.

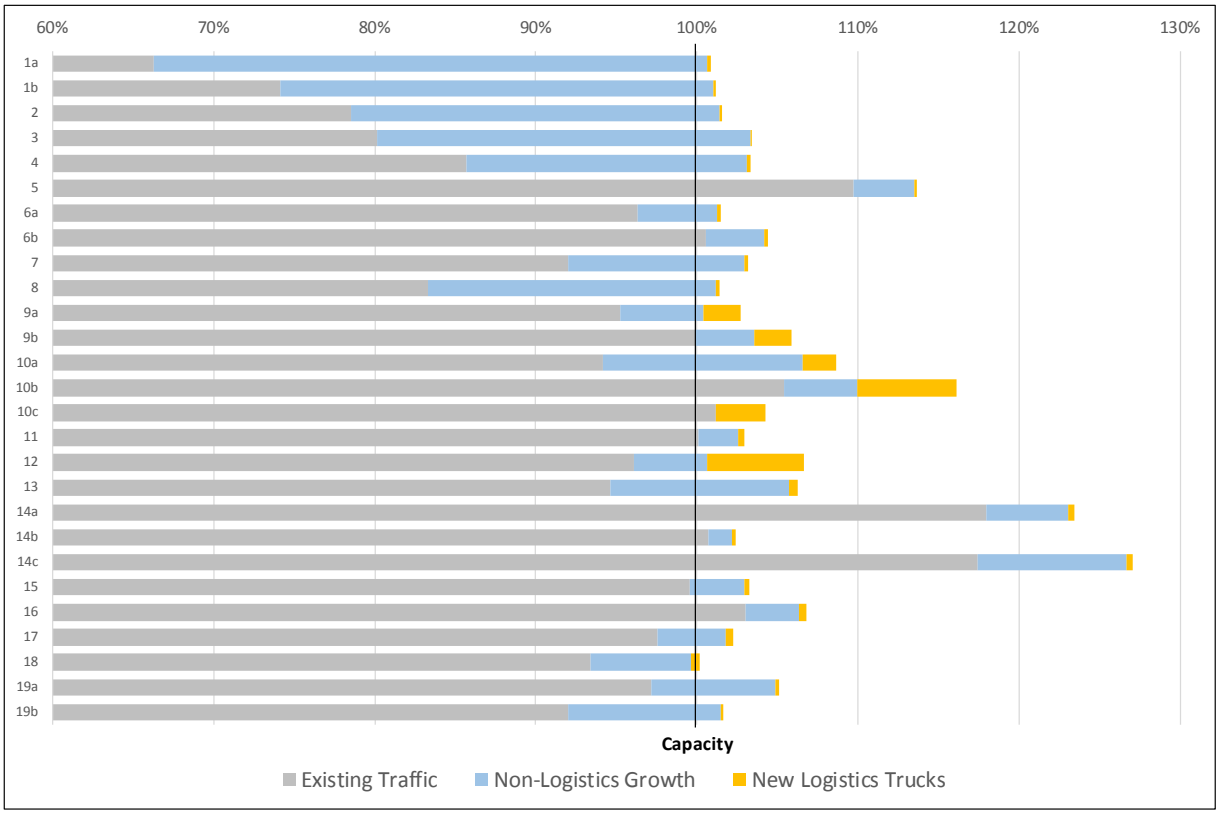
Continuous sequences of model segments, as listed in **Table 2-4**, were grouped for the purposes of assigning the percent of freeway capacity deficiencies attributable to new logistics development in Riverside County. Where multiple deficient segments were grouped, a weighted percent attributable was calculated based on the respective segment percent attributable and the length of each segment.

Table 2-5 arrays the critical V/C ratios, deficiencies, and percent attributable for each deficient segment of freeway in Riverside County. **Figure 2-11** visually represents the components of traffic (existing, non-logistics growth, and logistics growth) relative to the capacity for each deficient segment location.

Table 2-5: Deficient Segment Locations and Percent Attributable to New Logistics Development in Riverside County

Project ID	Route Name	Dir	Critical Segment		2016 GP Lanes on Critical Segment	Segment Length (mi)	Critical V/C ratio				Percent Deficiency Attributable to New Development		New Logistics Trucks as Percent of 2016 to 2040 Growth		Percent Deficiency Attributable to New Logistics Trucks by Peak Hour		Percent Deficiency Attributable to New Logistics Trucks	Weighted Average Highest % Deficiency Attributable to New Logistics Trucks
			Start	End			2016 AM V/C	2016 PM V/C	2040 AM V/C	2040 PM V/C	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour		
							(A)		(B)		(C) = 100%, for (A) < 1.0 and (B) > 1.0 (C) = [(B)-(A)]/[(B)-1], for (A) > 1.0		(D)		(E) = (C) * (D)		(F) = Max (E)	
1	I-15	NB	SR-79 S	Rancho California Rd	4	0.98	0.35	0.66	0.52	1.01	No Deficiency	100%	1.2%	0.7%	No Deficiency	0.7%	0.7%	0.7%
			Rancho California Rd	Winchester Rd	4	1.10	0.45	0.74	0.60	1.01	No Deficiency	100%	1.4%	0.7%	No Deficiency	0.7%	0.7%	
2	I-15	NB	Winchester Rd	Lane Add south of I-15/I-215 Split	4	0.75	0.46	0.79	0.58	1.02	No Deficiency	100%	2.3%	0.9%	No Deficiency	0.9%	0.9%	0.9%
3	I-15	NB	Clinton Keith Rd	Baxter Rd	3	0.76	0.52	0.80	0.65	1.03	No Deficiency	100%	1.1%	0.3%	No Deficiency	0.3%	0.3%	0.3%
4	I-15	NB	El Cerrito Rd	Ontario Ave	3	0.19	0.86	0.90	1.03	0.88	100%	No Deficiency	1.1%	100.0%	1.1%	No Deficiency	1.1%	1.1%
5	I-15	NB	Norco Dr/6th Street	Limonite Ave	3	2.03	0.82	1.10	0.87	1.14	No Deficiency	29%	4.1%	2.5%	No Deficiency	0.7%	0.7%	0.7%
6	I-15	SB	Cantu Galeano Ranch Rd	Limonite Ave	3	1.30	0.77	0.96	0.77	1.02	No Deficiency	100%	100.0%	4.3%	No Deficiency	4.3%	4.3%	4.8%
			Limonite Ave	Norco Dr/6th Street	3	2.00	0.87	1.01	0.90	1.04	No Deficiency	88%	4.7%	5.9%	No Deficiency	5.2%	5.2%	
7	I-15	SB	El Cerrito Rd	Dos Lagos Dr	3	2.14	0.65	0.92	0.61	1.03	No Deficiency	100%	100.0%	2.2%	No Deficiency	2.2%	2.2%	2.2%
8	I-15	SB	Temescal Canyon Rd	Indian Truck Trail	3	2.21	0.61	0.83	0.56	1.01	No Deficiency	100%	100.0%	1.4%	No Deficiency	1.4%	1.4%	1.4%
9	SR-60	EB	Rubidoux Blvd	Market St	3	0.79	0.84	0.95	0.81	1.03	No Deficiency	100%	100.0%	30.9%	No Deficiency	30.9%	30.9%	31.8%
			Market St	Main St	3	0.10	0.87	1.00	0.82	1.06	No Deficiency	100%	100.0%	39.0%	No Deficiency	39.0%	39.0%	
10	I-215	NB	Box Springs Rd	Central Ave	4	0.41	0.94	1.08	1.09	1.07	100%	0%	14.3%	100.0%	14.3%	0.0%	14.3%	30.0%
			Watkins Dr	Martin Luther King Jr	4	0.78	0.94	1.05	1.12	1.16	100%	66%	24.8%	57.9%	24.8%	38.4%	38.4%	
10c	I-215	NB	University Ave Off-Ramp	Upstream of Univ Ave On-ramp	3	0.36	0.90	1.04	0.98	1.04	No Deficiency	13%	26.9%	100.0%	No Deficiency	13.3%	13.3%	13.3%
11	I-215	NB	Center St Off-Ramp	Riverside County Line/Iowa Ave	3	0.53	0.79	1.00	0.79	1.03	No Deficiency	97%	91.5%	12.2%	No Deficiency	11.8%	11.8%	11.8%
12	I-215	SB	Martin Luther King Jr	Sycamore Canyon Rd	4	1.58	0.96	1.13	1.07	1.25	100%	50%	57.1%	55.2%	57.1%	27.7%	57.1%	57.1%
13	I-215	SB	Van Buren Blvd	Harley Knox Blvd	3	1.22	0.67	0.95	0.64	1.06	No Deficiency	100%	100.0%	4.4%	No Deficiency	4.4%	4.4%	4.4%
14	SR-91	NB	Riverside County Line	Green River Rd Off-Ramp	5	0.76	0.89	1.18	0.76	1.23	No Deficiency	23%	100.0%	6.1%	No Deficiency	1.4%	1.4%	4.7%
			Green River Rd Off-Ramp	SR-71	5	1.33	0.79	1.01	0.72	1.02	No Deficiency	69%	100.0%	14.1%	No Deficiency	9.8%	9.8%	
			SR-71	Serfas Club Dr Off-Ramp	4	1.35	0.92	1.17	0.85	1.27	No Deficiency	36%	100.0%	4.1%	No Deficiency	1.5%	1.5%	
15	SR-91	NB	Serfas Club Dr Off-Ramp	Grand Blvd Off-Ramp	4	2.33	0.85	1.00	0.80	1.03	No Deficiency	100%	100.0%	8.9%	No Deficiency	8.9%	8.9%	8.9%
16	SR-91	NB	On-Ramp from SB I-15	On-Ramp from NB I-15	3	0.32	0.81	1.03	0.76	1.07	No Deficiency	55%	100.0%	13.6%	No Deficiency	7.5%	7.5%	7.5%
17	SR-91	NB	McKinley St Off-Ramp	Pierce St	3	1.60	0.81	0.98	0.76	1.02	No Deficiency	100%	100.0%	10.1%	No Deficiency	10.1%	10.1%	10.1%
18	SR-91	NB	Magnolia Ave	La Sierra Ave	3	0.30	0.76	0.93	0.69	1.00	No Deficiency	100%	100.0%	8.3%	No Deficiency	8.3%	8.3%	8.3%
19	SR-91	SB	Serfas Club Dr Off-Ramp	Lane Add at SR-71	4	2.26	0.97	1.08	1.05	1.01	100%	0%	2.8%	100.0%	2.8%	0.0%	2.8%	2.3%
			Lane Add at SR-71	Riverside County Line	5	1.75	0.92	1.00	1.02	0.91	100%	No Deficiency	1.8%	100.0%	1.8%	No Deficiency	1.8%	

Figure 2-11: Components of 2040 Traffic Demand as a Percentage of Capacity



3. DETERMINING FREEWAY MITIGATION CONCEPTS AND COSTS

Having identified deficient freeway segments in **Section 2.2**, and determined the share of the deficiency in each segment that is attributable to new warehouse and logistics uses in Riverside County in **Section 2.3**, the next step in the study process involved the preparation of design concepts for the mitigation of freeway traffic impacts, and the estimation of the costs associated to implement the necessary mitigation. This section describes the process for developing mitigation concepts and determining associated costs. The resultant mitigation costs will be compared to the percent attributable to each deficient segment, as defined in **Table 2-5**, to determine the fair share of the cost to mitigate each deficient segment to is attributable to the impacts of new warehouse and logistics development in Riverside County.

3.1. Assessing Project Limits

Future capacity deficiencies on the freeway network in Riverside County were summarized in **Table 2-4** as a list of directional freeway segments where the future demand exceeded capacity and resulted in a bottleneck in the system. Limiting capacity expansion to the specific identified segment would be expected to mitigate the bottleneck in that segment, however it is likely that the bottleneck would be moved to the next adjacent segment without alleviating the capacity deficiency. Therefore, the list of deficient segments was reviewed in relation to the traffic data and the physical characteristics of the existing freeway facility to determine the extent of the improvement projects that would be necessary (i.e. to define the practical limits and logical termini for the associated improvement project) to effectively mitigate the segment deficiency.

At each freeway segment identified as having a capacity deficiency, the traffic data was reviewed to determine the location (typically an off-ramp) where the demand along the corridor was reduced enough to no longer exceed the capacity of the freeway mainline. Other considerations were physical characteristics of the freeway that might also contribute to capacity reduction, such as uphill grades where additional capacity to accommodate slower moving trucks would benefit the operation of the freeway, and system interchanges where demand changed substantially and there were opportunities for lane drops at freeway-to-freeway connectors. The practical limits of each of the 19 projects required to mitigate the deficient segments are listed in **Table 3-1**. The definition of this project list correlates to accomplishing step 18 in **Figure 1-1**.

Table 3-1: Practical Limits of Capacity Deficient Segment Improvement Projects

ID	Route Name	Dir	Beginning	End
1	I-15	NB	SR-79 S	Rancho California Rd
			Rancho California Rd	Winchester Rd
2			Winchester Rd	Lane Add south of I-15/I-215 Split
3			Clinton Keith Rd	Baxter Rd
4			El Cerrito Rd	Ontario Ave
5			Norco Dr/6th St	Limonite Ave
6		SB	Cantu Galeano Ranch Rd	Limonite Ave
			Limonite Ave	Norco Dr/6th
7			Cajalco Rd	Indian Truck Trail
8			El Cerrito Rd	Cajalco Rd
9	SR-60	EB	Rubidoux Blvd	Market St
			Market St	Main St
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr
			Central Ave/Watkins	Martin Luther King
10c			Martin Luther King Blvd	SR-91
11			Center St Off-Ramp	Riverside County Line/Iowa
12		SB	Martin Luther King Jr	Sycamore Canyon Rd
13			Van Buren Blvd	Case Rd
14	SR-91	EB	Riverside County Line	Green River Rd Off-Ramp
			Green River Rd Off-Ramp	SR-71
			SR-71	Serfas Club Dr Off-Ramp
15			Serfas Club Dr Off-Ramp	Grand Blvd Rd Off-Ramp
16			On-Ramp from SB-I-15	On Ramp from NB- I-15
17			McKinley St Off Ramp	Pierce St
18			Pierce St	Magnolia St
19		WB	Serfas Club Dr Off-Ramp	Lane Add at SR-71
			Lane Add at SR-71	Riverside County Line

3.2. Review of Currently Funded/Programmed Improvements

Once the practical limits of the improvements were defined, each project was compared to known, programmed projects that were recently completed (and are not included in the SCAG 2016 Model existing network), are currently under construction, or are currently in

development and are funded for construction. There are three projects that are within the study area that were identified as meeting these criteria:

- The I-15/French Valley Parkway Interchange Project, Phases 1 and 2
- The I-15 Express Lane Project
- The SR-91 Express Lane Extension Project

The French Valley Parkway Project includes the implementation of the I-15/French Valley Parkway Interchange as well as improvements to the Winchester Road Interchange and a collector-distributor road system along I-15 between Winchester Road and the I-15/I-215 system interchange. This project adds as many as three lanes in each direction north of Winchester Road. Based on the Preferred Alternative Layout Plans included in the IS/EA (January 2010), the FVP Phasing Exhibit (December 2, 2015) and the Ultimate Project Exhibit (July 12, 2017), it was determined that the French Valley Parkway Project successfully eliminates the need to further mitigate deficient segment 2.

The I-15 Express Lane Project will implement one or two tolled managed lanes in each direction northbound and southbound between Cajalco Road and SR-60. This project also adds general purpose lanes and auxiliary lanes at specific locations. Based on a review of the I-15 Express Lane Project Tolling Concept Plans (June 21, 2017), the I-15 Express Lane Project successfully eliminates the need to further mitigate deficient segments 4, 5, and 6.

The SR-91 Express Lane Extension Project extends from west of the Orange County Line to east of I-15 both eastbound and westbound. In addition to the tolled express lanes, additional general purpose lanes were also constructed as part of this project. Based on a field review of the project as it has been constructed, the SR-91 Express Lane Extension Project successfully eliminates the need to further mitigate deficient segments 14, 15, 17, and 19.

Table 3-2 lists the remaining deficient segments and associated mitigation projects that would be included as the basis for the logistics fee program.

Table 3-2: Capacity Deficient Segment Improvement Projects to be Included in the Fee Program

ID	Route Name	Dir	Beginning	End
1	I-15	NB	SR-79 S	Rancho California Rd
			Rancho California Rd	Winchester Rd
3			Clinton Keith Rd	Baxter Rd
7		SB	Cajalco Rd	Indian Truck Trail
8			El Cerrito Rd	Cajalco Rd
9	SR-60	EB	Rubidoux Blvd	Market St
			Market St	Main St
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr
			Central Ave/Watkins	Martin Luther King
10c			Martin Luther King Blvd	SR-91
11			Center St Off-Ramp	Riverside County Line/Iowa
12		SB	Martin Luther King Jr	Sycamore Canyon Rd
13			Van Buren Blvd	Case Rd
16	SR-91	EB	On-Ramp from SB-I-15	On Ramp from NB- I-15
18			Pierce St	Magnolia St

3.3. Development of Project Concepts

Using scalable, georeferenced aerial photography, project concept plans were developed consistent with Caltrans design standards for urban area freeways to show the primary quantifiable cost items for each project, including:

- Right-of-Way Impact
- Retaining Walls
- Freeway Mainline Widening
- Structure Construction
- Ramp Realignment
- Roadway Excavation
- Street Improvements
- Signalization

For the initial assessment and development of project concept plans, a combination of Google Earth and limited field reviews were used to determine existing conditions for the corridors. The conditions recorded include number of lanes, width of pavement, HOV lanes, inside (left) shoulder width, outside (right) shoulder width, assumed right-of-way boundary, freeway

structures, ramp locations, major drainage facilities, retaining walls, sounds walls, signage, and signals. All widths and lengths provided were obtained by doing desktop research on Google Earth and limited field reviews, and were based on sound engineering judgement. Although arterial highway improvement projects were not specifically examined as part of the study effort, any arterial highway improvements necessary to accommodate the proposed freeway capacity improvements (e.g. ramp realignment, bridge reconstruction, intersection signalization) were identified and included in the concept drawings. The concept plans show colored lines and areas that can be measured and used to estimate quantities for the various categories of construction or property acquisition. These project concept drawings were reviewed by the Study Advisory Team to confirm that they reasonably represent the minimum improvements necessary to mitigate the identified deficiency.

The resultant improvement concept plans are included in **Appendix A** of this technical memorandum. The completion of the design concept drawings represents the accomplishment of step 24 in the study process flow chart **Figure 1-1**. It should be noted that the conceptual designs were based on a visual analysis and that no detailed engineering or surveying has been done to verify the assumptions.

3.4. Project Cost Estimating

To accomplish step 25 and 26 in the study process, the unit costs for the various construction components were taken from the Caltrans cost database and other recent project cost estimates for projects of similar scale and scope within the Inland Empire. Right-of-way cost per residential unit and per square foot are based on recent property valuations in Riverside County. Specific elements in the unit costs include:

Roadway Item Costs

- Roadway costs include PCC pavement, tie-back walls, pavement markings and markers and replacement of signs. Unit costs were extrapolated from a similar freeway construction project.
- The quantity of each component was then multiplied by the unit cost to produce a cost item for the roadway component.

Drainage Item Costs

- Per our initial assessment, widening affects the existing drainage. Further analysis is needed as impacts to drainage can increase the costs.
- The costs associated with the potential impacts to drainage are 15% of the roadway items cost.

Specialty Item Costs

- Specialty item costs include retaining walls due to proposed widening, removal of existing retaining walls, sounds wall replacement, tie back walls and ramp adjustments.

- The quantity of each component was then multiplied by the unit cost to produce a cost item for the specialty item costs.

Minor Items Costs

- Minor items can include anything from ADA items to other minor items that are not considered high costs items. Typical Caltrans value is 5-10%.

Mobilization Costs

- Mobilization includes costs incurred due to mobilization of personnel and equipment as well as pre-construction expenses. Typical value of 10% can be adjusted when actual costs are available.

Roadway Additions

- Roadway addition items can include price index fluctuations, value analysis, maintaining traffic, removal of rock and debris, etc. These supplemental items cover work for items that cannot be quantified as contract bid item. All roadway supplemental items would be within the FHWA approved items list. At this stage it is appropriate to assume there will be supplemental items. Typical Caltrans value is 5-10%.

Contingency

- Contingency of 25% is within Caltrans recommended values: Pre-PSR 30%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10% and final PS&E is 5%. Caltrans contingencies allow for unforeseen increases. Due to the level of detail and engineering available, the contingency percentage is appropriate. As more information becomes available, costs would be refined and contingency would be decreased. This is typical per Caltrans.

Support Costs

- Support costs are 35% of the capital outlay costs. Support costs include design costs, construction management, Caltrans reimbursed costs and Metro internal costs. These costs are functional overhead costs not administrative overhead. The support costs can be refined as more information becomes available.

The unit costs were multiplied by the quantities determined from the conceptual design plans to yield a conceptual cost estimate for each proposed project.

The proposed improvement project conceptual cost estimates were compared to the Western Riverside Council of Governments (WRCOG) *Transportation Uniform Mitigation Fee (TUMF) 2016 Nexus Study Report*, with a focus on identifying arterial-freeway interchange and bridge projects that are also included in TUMF. The TUMF program assesses all development types, including warehouse and logistics uses, impact fees to mitigate the cumulative regional transportation impacts of new development on the arterial highway system, including arterial-freeway

interchanges and bridges. As such, new warehouse and logistics uses are already contributing toward the cost of these improvement projects to the extent they are included in the TUMF program. Where the conceptual improvement projects were determined to include project elements that were also identified in the TUMF program, the conceptual cost estimate for the project was reduced by an amount equal to the lesser of the estimated conceptual cost of the relevant project element (i.e. the conceptual cost of the arterial interchange and/or bridge improvements) or the maximum eligible amount prescribed in the 2016 TUMF Nexus Study. This reduction in the conceptual improvement costs as part of this study eliminates overlap with the TUMF program in terms of the cost for implementing arterial interchange and bridge improvements necessary to accommodate the proposed freeway capacity expansion necessary to mitigate the cumulative regional impacts of new development, including warehousing and logistics uses, on the freeway network.

The resultant conceptual project cost estimates are summarized in **Table 3-3Error! Reference source not found.**. A more detailed breakout of the conceptual project cost estimates to mitigate the deficient segments is included in **Appendix B** of this technical memorandum.

Table 3-3: Capacity Deficient Segment Improvement Project Conceptual Cost Estimates

ID	Route Name	Dir	Beginning	End	Cost Estimate
1	I-15	NB	SR-79 S	Rancho California Rd	$36,237,000
			Rancho California Rd	Winchester Rd	
3			Clinton Keith Rd	Baxter Rd	$7,406,000
7		SB	Cajalco Rd	Indian Truck Trail	$37,825,000
8			El Cerrito Rd	Cajalco Rd	$10,408,000
9	SR-60	EB	Rubidoux Blvd	Market St	$40,234,000
			Market St	Main St	
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr	$26,513,000
			Central Ave/Watkins	Martin Luther King	
10c			Martin Luther King Blvd	SR-91	$55,081,000
11			Center St Off-Ramp	Riverside County Line/Iowa	$42,212,000
12		SB	Martin Luther King Jr	Sycamore Canyon Rd	$13,403,000
13			Van Buren Blvd	Case Rd	$95,365,000
16	SR-91	EB	On-Ramp from SB-I-15	On Ramp from NB- I-15	$7,611,000
18			Pierce St	Magnolia St	$13,040,000
Total Project Cost Estimate				**$385,335,000**	

3.4.1. Project Costs Attributable to New Logistics Development

The conceptual cost estimate of $385,335,000 presented in **Table 3-3** represents the unfunded amount of the total cost to implement the minimum improvements necessary to mitigate the impacts of new development on Riverside County Freeways. However, as described in **Section 2.3**, this cost cannot be entirely attributed to the impact of new logistics developments and must be adjusted as the basis for calculating a fair share fee to reflect only the share of the cost for each segment that can be attributed to the impact of new logistics developments. This key step in the study process, represented by step 28 in the study process flowchart in **Figure 1-1**, is accomplished by multiplying the unfunded project costs summarized in **Table 3-3** by the share of each segments impact attributable to new logistics development summarized in **Table 2-5**. **Table 3-4** presents the outcome of this step with a total of $47,841,000 or 12.4% of the conceptual cost estimate being determined to be the maximum share of the cost attributable to mitigate the cumulative regional impacts of new warehousing and logistics developments in Riverside County.

Table 3-4: Capacity Deficient Segment Improvement Project Logistics Cost Share

ID	Route Name	Dir	Beginning	End	Conceptual Cost Estimate	Logistics Attributable Share	Logistics Cost Share
1	I-15	NB	SR-79 S	Rancho California Rd	$36,237,000	0.7%	$258,000
			Rancho California Rd	Winchester Rd			
3			Clinton Keith Rd	Baxter Rd	$7,406,000	0.3%	$19,000
7		SB	Cajalco Rd	Indian Truck Trail	$37,825,000	2.2%	$820,000
8			El Cerrito Rd	Cajalco Rd	$10,408,000	1.4%	$142,000
9	SR-60	EB	Rubidoux Blvd	Market St	$40,234,000	31.8%	$12,802,000
			Market St	Main St			
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr	$26,513,000	30.0%	$7,963,000
			Central Ave/Watkins	Martin Luther King			
10c			Martin Luther King Blvd	SR-91	$55,081,000	13.3%	$7,317,000
11			Center St Off-Ramp	Riverside County Line/Iowa	$42,212,000	11.8%	$4,978,000
12		SB	Martin Luther King Jr	Sycamore Canyon Rd	$13,403,000	57.1%	$7,658,000
13			Van Buren Blvd	Case Rd	$95,365,000	4.4%	$4,235,000
16	SR-91	EB	On-Ramp from SB-I-15	On Ramp from NB- I-15	$7,611,000	7.5%	$571,000
18			Pierce St	Magnolia St	$13,040,000	8.3%	$1,078,000
Total Project Cost Estimate					**$385,335,000**	**12.4%**	**$47,841,000**

4. FUNDING GAP ANALYSIS

As described in **Section 3**, the fair share of costs to mitigate future freeway deficiencies that are attributable to new warehousing and logistics uses varies by segment, but is a relatively small proportion of the total cost to complete the necessary improvements. Furthermore, although the project concepts and associated cost estimates have identified a minimum level of improvement necessary to reasonably mitigate the identified impact, it is likely the scale and scope of any proposed improvement project would be greater to account for the accomplishment of other transportation goals and/or freeway operational needs, including rehabilitation and roadway maintenance, resolution of existing needs, or anticipation of addition future demands beyond the horizon year of the fee program. Since the resolution of these items cannot be fairly attributed to the mitigation of new development impacts, it is necessary to ensure that sufficient alternative funding sources are expected to be available to complete the necessary improvements and establish an implementable program. This section summarizes projections of alternative transportation funding sources that might be available to complete freeway capacity expansion projects identified as part of this study.

4.1. RIVERSIDE COUNTY STRATEGIC ASSESSMENT

In 2015, the RCTC directed its staff to conduct an assessment to assist the Commission in examining the County's need for transportation investments. In early 2016, the RCTC approved the *Riverside County Strategic Assessment*[7]. The Strategic Assessment includes a detailed review of federal, state and local revenues through 2040.[8] [9] It looked at 37 different funding sources covering all modes and categorized them into three levels (A, B and C), depending on their level of certainty. Category A represents existing revenues that can be reasonably expected to be available in the future, Category B includes existing and programmed revenues that Riverside County might realistically secure on a discretionary or competitive basis and those in Category C are considered strategy revenues.

According to the Strategic Assessment, the total costs of freeway and interchange projects between 2016 and 2039 were expected to be $8.724 billion and the anticipated revenues were $5.326 billion, representing funding for 61% of the freeway needs, thus leaving an unfunded gap of $3.326 billion through 2039. **Table 4-1** summarizes the breakdown of funding contained in the Strategic Assessment by program and risk.

[7] HDR, January 2016, *Riverside County Strategic Assessment: Executive Summary*, RCTC.
[8] Since the document was prepared in 2015, it did not include several recent funding sources, which are discussed later in this memo.
[9] HDR, November 4, 2015, *RCTC Strategic Assessment Technical Memorandum: Task 4 Funding Gap Analysis.*

Table 4-1: Freeway Funding Program Amount (in millions) and Risk, 2016 to 2039

Funding Program	Category A	Category B	Category C
Federal			
Congestion Mitigation and Air Quality (CMAQ)	$219.7		
Regional Surface Transportation Program (RSTP)	$315.2		
State			
Regional Improvement Program (RIP)	$441.9		
Interregional Improvement Program (IIP)		$58.8	
Mileage Based User-Fees (MBUF)			$2,233.5
Local			
Measure A*	$915.7		
SR 91 Net Toll Revenues*	$618.5		
I-15 Express Lane Toll Revenues*	$319.7		
Mid County Parkway (MCP) toll revenues			$153.5
Total (2016-2039)	**$2,880**	**$59**	**$2,387**

*Debt service and operations and maintenance costs have been deducted from these amounts.

Because the assessment was prepared in 2015 it did not include certain funding sources approved after that. New funding sources and their potential implications are described in the following sections.

4.2. Fixing America's Surface Transportation Act

On December 4, 2015, President Obama signed Fixing America's Surface Transportation Act (FAST) Act[10] into law. Overall, the FAST Act largely maintains program structures and funding shares between highways and transit.

The FAST Act provided two new grant programs – the Nationally Significant Freight and Highway Projects (NSFHP) and the Advanced Technology and Congestion programs – that could reasonably be expected to provide funding for freeway and interchange projects in Riverside County. **Table 4-2** shows the new FAST funding amounts by program and risk category that could reasonably be expected to be available to RCTC each year based on a proportional allocation of total program funding:

[10] Pub. L. No. 114-94

Table 4-1: Projected RCTC Funding from FAST (in millions), 2017 to 2040

Funding Program	Category A	Category B	Category C
NSFHP (INFRA)		$159.8	
Advanced Technology and Congestion Management Deployment Program		$10.7	
Total		**$170.5**	

4.3. Road Repair and Accountability Act of 2017 (Senate Bill 1)

In 2017 the California legislature passed and the governor signed into law a major transportation funding bill.[11] The Road Repair and Accountability Act of 2017 (referred to as SB1) provided additional funding to several existing programs, including the STIP, and established several new funding programs that are relevant to this study.

Most of the SB1 funds that could go to freeways and interchanges are via competitive grant programs. **Table 4-3** shows the projected allocation Riverside County could reasonably be expected to obtain based on a proportional share of the total funding proposed.

Table 4-3: Projected RCTC Funding from SB1 (in millions), 2017 to 2040

Funding Program	Category A	Category B	Category C
LPP (county allocation)	$162.9		
TCEP		$623.9	
SCCP		$360	
LPP (competitive grant)		$162.9	
	$162.9	**$1,146.8**	

4.4. Summary of Available Funding from All Sources

To quantify the total funds that might be available to freeway and interchange projects in Riverside County through 2040, sources identified in the Strategic Assessment were combined those from FAST and SB1 programs. **Table 4-4** combines funding sources to establish a total of anticipated freeway project funding through 2040 from all sources by risk category.

[11] http://catc.ca.gov/

Table 4-4: RCTC Projected Freeway Project Funding 2017-2040 - All Sources (in millions)

Funding Source	Category A	Category B	Category C
Total Strategic Assessment Sources	$2,948.6	$61	$2,465.8
Total New Sources	$162.9	$1,317.3	
Grand Total of All Sources	**$3111.5**	**$1,378.3**	**$2,465.8**

As can be seen in **Table 4-4**, the infusion of SB1 funds, which are mostly allocated through competitive grants and therefore are considered risk category B, creates better balance across the risk categories than that found in the Strategic Assessment, which was heavily reliance on high-risk, category C funds. It should be noted that although the SB1 program has been legislated, there is an on-going repeal effort that jeopardizes the future availability of SB1 funding programs.

The total estimated conceptual cost to complete the reasonable mitigation of deficient segments identified as part of this study is $385,335,000. Although only 12.4% of this cost can be attributed to new warehousing and logistics developments, the estimates of alternative funding sources described in this section clearly indicate that the remaining costs to complete these improvement projects could reasonably be expected to be obtained from existing and proposed funding sources after the logistics impact fee contributes a fair share for mitigation of logistics related impacts. Furthermore, the projected availability of future funding for freeway and interchange improvement projects is over six times the amount of the conceptual cost estimates to mitigate the impacts of new development on the freeway system indicating that sufficient funding might reasonably be expected to account for the expansion of scale and scope of associated freeway projects to address other project needs not directly attributable to the impacts of new development.

5. LOGISTICS MITIGATION FEE AND NEXUS DETERMINATION

The foundation established by accomplishing the various steps in the prior tasks provides the basis for computing the amount and value of the in-lieu fee to mitigate the cumulative regional impact of new warehousing and logistics developments on the freeway network in Riverside County, as well as establishing the relationship between future growth of logistics related facilities within Riverside County, truck traffic growth, and the need for additional freeway improvements to mitigate the impacts of this growth. The maximum defensible fair-share fee that could be charged to new logistics uses for mitigating their impacts is presented in this section, along with a summary of the study findings that support the nexus determination.

5.1. LOGISTICS MITIGATION FEE CALCULATION

Utilizing the findings of the prior study tasks as presented in the previous sections of this report, the process for computing the fee requires dividing the project costs attributable to new logistics development as determined in Step 28 and summarized in **Table 3-4** by the forecast amount of new warehousing and logistics facilities in square feet as determined in Step 4 and presented in **Table 2-2** to produce a fee per square foot.

Table 5-1: Logistics and Warehouse Impact Fee Calculation

Logistics and Warehouse Impact Fee for Riverside County	
Logistics Cost Share of Freeway Mitigation	$47,841,000
Growth in Warehouse Gross Floor Area in Square Feet	37,332,179
Fee per Square Foot of Gross Floor Area	***$1.28***

As derived from **Table 2-2** and summarized in **Table 5-1**, the growth in warehousing gross floor area is forecast to grow by 37,332,179 square feet of gross floor area from 2016 to 2040, according to the SCAG *Industrial Warehousing Study* and as utilized in the Heavy Duty Truck Model. The travel demand modeling and deficiency analysis completed for this study indicates the growth in warehousing will result in the need to contribute $47,841,000 toward the cost of freeway capacity improvements throughout Riverside County to cover the logistics share of mitigating future freeway deficiencies, as presented in **Table 3-4**. This equates to a value of $1.28 per square foot of gross floor area of new warehousing and logistics developments to fully satisfy the fair share contribution. As such, this amount represents the *maximum* fee permissible to be collected under California law and in accordance with legal precedents to address the cumulative regional impacts of new warehousing and logistics developments on the freeways network in Riverside County.

5.2. Nexus Determination

The Mitigation Fee Act, as set forth in the California Government Code Sections 66000 through 66008, establishes the framework for mitigation fees in the State of California. In establishing the basis for a fee to be implemented, the Act requires agencies to make five findings with respect to a proposed fee. These findings are described in the following sections.

5.2.1. Purpose of the Fee

Identify the Purpose of the Fee

The purpose of the Regional Logistics Mitigation Fee is to establish a uniform, fair-share mitigation fee to be paid by new warehouse and logistics developments to mitigate the cumulative, indirect, regional impacts of the truck traffic generated by these future developments on overall traffic conditions on the freeway network in Riverside County. The fees, to be paid in-lieu of completing specific improvements associated with a particular development, will be utilized to help fund capacity improvements on freeways in Riverside County that are needed to maintain the target level of service in the face of the higher traffic volumes brought on by new growth in the county.

Specific to Regional Logistics Mitigation Fee for Riverside County, the completion of this study and the determination of a fair-share fee satisfies specific provisions of the July 29, 2016 Settlement Agreement between the County of Riverside, the Riverside County Transportation Commission, the City of Moreno Valley and Highland Fairview. This agreement established that each party would contribute toward the cost of "an RCTC-conducted regional transportation study to evaluate a logistics-related regional fee."

5.2.2. Use of Fee Revenues

Identify the use to which the fees will be put. If the use is financing facilities, the facilities shall be identified

The Mitigation Fee Act requires that the public facilities that are to be financed using the impact fee be identified. In the case of the Regional Logistics Mitigation Fee, the deficiency analysis described in **Section 2** identified those locations on the Riverside County freeway network that would be impacted by additional traffic growth associated with new development activity in Riverside County. This information was subsequently utilized in **Section 3** to define specific improvement projects and the associated costs to mitigate the deficiencies, as summarized in **Table 3-3**. Furthermore, the share of the cost of each individual improvement project to specifically address the mitigation of impacts associated with the growth of warehousing and logistics uses was determined and summarized in **Table 3-4** as the basis for calculating the logistics fee.

5.2.3. Use/Type-of-Development Relationship

Determine the reasonable relationship between the fees' use and the type of development project on which the fees are imposed

To determine the "use" relationship, the development being assessed an impact fee must be reasonably shown to derive some use or benefit from the facility being built using the fee. In the case of the Regional Logistics Mitigation Fee, the projects to be funded by the fee were identified by completing deficiency analysis to determine where the additional traffic generated by new development in Riverside County would impact the freeway network. Improvement project concepts were developed to mitigate these impacts, with at least part of the cost of these improvements being determined to be attributable to new logistics related development. The fact that the projects that will be funded in part by the Regional Logistics Mitigation Fee are to provide additional freeway capacity, and recognizing that freeways are the highest functional class of the roadway network and critically important on the regional roadway hierarchy, means that all residents and businesses in the county benefit in important ways from the maintenance of a reasonable level of service on these facilities. More specifically, most truck trips coming to or going from new warehouse and logistics uses can be expected to use area freeways for at least part of their trips, as demonstrated by the results of the deficiency analysis described in **Section 2**, and those that do not use freeways will nevertheless benefit because good traffic conditions on the area freeways will keep drivers from diverting to other roads and causing congestion in other parts of the county. Even residents or workers in the new developments who do not drive at all will benefit from access to goods and services made possible in part by the serviceability of the regional freeway network.

5.2.4. Need/Type-of-Development Relationship

Determine the reasonable relationship between the need for the public facilities and the types of development on which the fees are imposed

To determine the "need" relationship the facilities to be financed by the fee must be shown to be needed at least in part because of the new development. The primary intended purpose of the regional transportation study as required by the July 29, 2016 Settlement Agreement was to determine the extent to which additional truck trips associated with new warehouses and logistics uses would impact the freeways in Riverside County as the basis for determining the fair share amount of in-lieu fee payments to adequately mitigate the impacts. This was determined by analyzing the forecast traffic demand with the expected degree of new development and comparing that with the demand without new development. Projects were analyzed individually and the degree to which the need for the project was attributable to new warehouses and logistics developments varied widely from project to project. The findings of this analysis is summarized in **Table 3-4**, which indicates that new warehousing and logistics development activities are responsible for a share of the overall mitigation needed to address future freeway capacity deficiencies.

5.2.5. Proportionality Relationship

Determine how there is a reasonable relationship between the fees amount and the cost of the facilities or portion of the facilities attributable to the development on which the fee is imposed

The "proportionality" relationship requires that there be rough proportionality between the fee charged to each development and the cost of the facility being financed. In the case of the Regional Logistics Mitigation Fee, the share of truck traffic generated specifically by warehouses and logistics uses was estimated using the validated SCAG travel demand model as the basis to determine the rough proportion of the improvement cost to mitigate future deficiencies caused by these trucks on the Riverside County freeway network. Furthermore, the share of project costs was adjusted to account for those improvements already being completed by current funded capacity expansion projects, as well as the share of the cost of arterial interchange improvements necessary to accommodate freeway capacity expansion that are already being funded by the existing WRCOG TUMF program. The overall project cost share was also adjusted to account for existing capacity deficiencies that cannot be fully be attributed to new growth in Riverside County. **Table 2-5** summarizes the attribution of various project cost factors resulting in the determination of the fair-share of improvement costs that are roughly proportional to the specific impacts of new warehouse and logistics uses. Additionally, the detailed cost breakdowns in **Appendix B** include the adjustments for project cost elements already covered as part of the WRCOG TUMF program.

5.3. Conclusions

The findings of the RCTC Truck Study and Regional Logistics Mitigation Fee Study indicate that there is reasonable relationship between the cumulative regional freeway traffic impacts of new land development projects in Riverside County, including truck traffic impacts associated with new warehouse and logistics developments, and the need to mitigate these freeway traffic impacts, including using funds levied through a Regional Logistics Fee. The study evaluation results have established the proportional fair share of the freeway improvement cost attributable to truck trips generated by new warehouse and logistics development having adjusted for existing deficiencies, the impacts of other development type and the effects of pass through trips, and having accounted for improvements already being completed as part of an ongoing freeway project or funded by another impact fee. As presented in **Table 5-1**, the fair share fee to mitigate the cumulative indirect regional freeway traffic impacts of truck trips associated with new warehouse and logistics growth in Riverside County is $1.28 per square foot of gross floor area.

6. APPENDICES

Appendix A – Capacity Improvement Concept Plans

Appendix B – Conceptual Project Cost Estimate Tables

APPENDIX A – CAPACITY IMPROVEMENT CONCEPT PLANS

APPENDIX B – CONCEPTUAL PROJECT COST ESTIMATE TABLES

RCTC TRUCK STUDY AND REGIONAL LOGISTICS MITIGATION FEE

Technical Memorandum 1: Existing and Future Conditions

Warehouse-Related Land Use Data & Truck Travel Patterns

Prepared for :

Riverside County Transportation Commission

Prepared by:

WSP

In partnership with

FEHR & PEERS

October 2017

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1. INTRODUCTION

The RCTC Truck Study and Development and Implementation of Regional Logistics Mitigation Fee is intended to verify the anticipated rate of growth in warehousing and logistics-related development in Riverside County, and to quantify the associated level of traffic impacts on the Riverside County highway system as a result of the expected growth in warehousing and logistics activities. In quantifying impacts, the study is also intended to determine the amount that each new warehousing or logistics development should pay in lieu of completing actual freeway improvements to mitigate the cumulative regional traffic impacts specifically associated with truck trips generated by new warehousing and logistics developments. The findings of this study are intended to provide the basis for potentially implementing a program to collect impact fees that will contribute to mitigating the truck traffic impacts associated with new warehousing and logistics developments in Riverside County. Such a program can help to ensure that all new logistics-related development approved in Riverside County will bear a proportional fair share of the cost of building transportation infrastructure to address future transportation needs.

This technical memorandum represents the first in a series of documents that will verify the rate of new warehousing and logistics related developments in Riverside County, the associated truck trip generation rates and cumulative regional traffic impacts, the cost to mitigate these impacts, and the fair share basis for collecting a potential fee. In this document, the existing conditions of the warehousing industry and truck travel patterns in Riverside County were reviewed for five primary activities:

1) Creating an inventory of existing warehouse-related land uses
2) Developing a projection of future warehouse-related land use (2040)
3) Analyzing a range of potential trip generation rates to apply in calculating fees
4) Tabulating existing truck volumes on major roadways
5) Generating information regarding truck origins/destinations

This document also presents the results of existing and future baseline model runs to help quantify existing and future conditions on the Riverside County highway system.

The objective of this technical memorandum is to provide the reader with an understanding of the various warehousing-related trucking activities, the historic trends of these types of activities, and the anticipated future of this industry in Riverside County. With this information as a basis, subsequent study tasks will quantify specific truck-related

infrastructure needs associated with growth in warehousing-related uses, and the potential for an impact fee to address these needs. The inventory and verification of available data sources as presented in this technical memorandum is ultimately intended to demonstrate the adequacy of these data to support the technical evaluation efforts to be undertaken in subsequent tasks. In particular, the review of existing conditions data sources provides the ability to verify the following specific aspects of the data related to the needs of subsequent evaluation tasks:

- The available data provides appropriate levels of disaggregation for warehouse-related land uses to match the level of confidence in trip generation rates and forecasted growth in development
- Trip generation rates are available to be applied for the purpose of identifying the fair share of trips attributable to warehousing and logistics development activities
- The data provides the ability to define necessary adjustments in the forecasting model to match measured truck volumes and Origin-Destination (O-D) patterns

It should be noted that the contents of this document are technical and detailed in nature, and are presented with the primary purpose of providing a transparent assessment of available data sources to support the determination of a fee representing the fair share to mitigate the cumulative regional impacts of designated new developments. Unlike other types of transportation studies, where the assessment of underlying data sources and determination of assumptions might be conducted at a technical staff level, and only the methodology used and associated findings are presented in the study documentation, impact fee studies necessitate a more transparent approach to considering data sources and determining assumptions. For this reason, this technical memorandum effectively provides an additional level of background information presenting a more detailed consideration of the range of data sources available to support the evaluation to be conducted in subsequent tasks. In short, this technical memorandum is intended to describe what data sources are available and appropriate to support subsequent study tasks, with the specific assumptions and methodology to complete those tasks described in subsequent Technical Memoranda.

2. EXISTING LAND USE INVENTORY

Data from the County Business Patterns[1] (CBP), Southern California Association of Governments (SCAG), and Infogroup provide alternative means to identify land uses related to warehousing. These datasets use different systems to classify industries; the North American Industry Classification System (NAICS) and the Standard Industrial Classification (SIC). The U.S. Census Bureau uses the NAICS structure. Similarly, SCAG uses the NAICS structure as the basis for developing regional employment forecasts as part of its long range planning responsibilities. While the SIC has generally been replaced by NAICS, several data vendors are still using SIC-based data. The establishment data used for this study was purchased from Infogroup which uses SIC codes.

The NAICS applies a 6-digit hierarchical coding system to classify all economic activity into 20 industry sectors. Five sectors are mainly goods-producing sectors and 15 are entirely services-producing sectors. The SIC system is a 4-digit classification system. As would be expected, the 6-digit NAICS hierarchical structure allows greater coding flexibility than the 4-digit structure of the SIC system.

Each establishment has a primary NAICS/SIC code. This number indicates a company's primary line of business. What determines a company's primary SIC code is the code definition that generates the highest revenue for that company at a specific location in the past year. Warehousing is identified with a specific code in both the NAICS and SIC systems. However, many other classification codes, such as wholesaling and manufacturing, involve significant amount of warehousing activities. Therefore every establishment usually defines their activity with a secondary NAICS/SIC code as well. Infogroup verify the establishments' primary and secondary codes regularly through their survey. In this study, both the primary and the secondary warehousing uses were investigated to have a complete understanding of warehousing activities in Riverside County.

2.1. COUNTY BUSINESS PATTERNS (CBP)

Table 1 shows selected categories of NAICS, which are identified as primary or secondary warehousing uses. Although CBP data covers all establishments, it is only available at the county level.

[1] County Business Patterns is an annual series of reports by the U.S. Census Bureau that provides subnational economic data by industry. This series includes the number of establishments, employment during the week of March 12, first quarter payroll, and annual payroll.

Table 1. Description of Selected NAICS Categories

Industry Code	Brief Description
31-33 (Manufacturing)	Establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. Assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified as Construction. *(Example: Food Manufacturing, Textile Product Mills, Apparel Manufacturing, Wood Product Manufacturing, Chemical Manufacturing.)*
42 (Wholesale Trade)	Establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. Includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing. *(Example:, Furniture and Home Furnishing Merchant Wholesalers, Household Appliances and Electrical and Electronic Goods Merchant Wholesalers.)*
48-49 (Transportation & Warehousing)	Industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. Modes of transportation include air, rail, water, road, and pipeline. *(Example: Freight Trucking Companies, Warehousing and Storage, Couriers and Delivery Services.)*

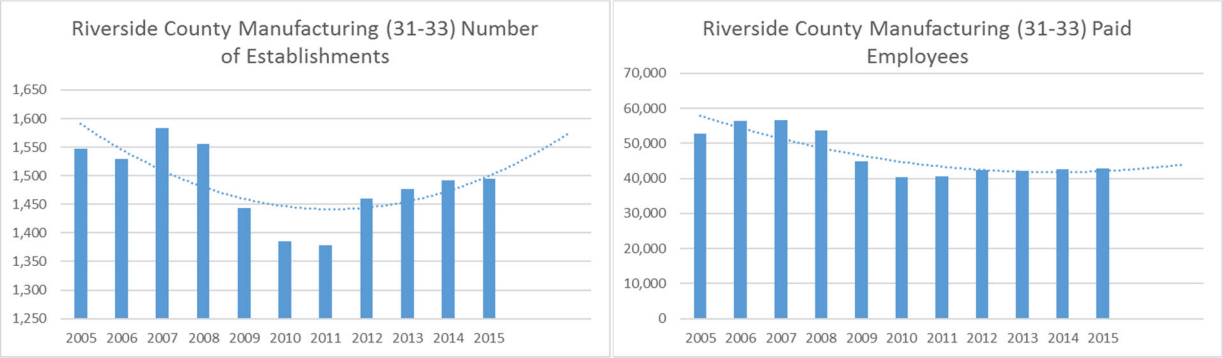
Source: North American Industry Classification System United States, Executive Office of the President Office of Management And Budget, 2017

There is no readily available information to separate the warehousing activity into establishments primarily registered as manufacturing or wholesale under the CBP database. Since this data is only available at the county level, it is not possible to make a detailed analysis. The historic comparison at the county level can only provide a high-level insight as a basis for comparison to support verification and validation of other data sources.

Figure 1 through 3 are a series of graphs detailing both the number of establishments and the number of employees for the uses identified in **Table 1** in Riverside County between 2005 and 2015 based on CBP data and categorized by NAICS sectors. The number of manufacturing establishments and employees declined in Riverside County during the 2008 to 2012 recession. Although they have rebounded somewhat, they have not yet returned to their pre-recession levels (see **Figure 1**). In contrast, Transportation & Warehousing employment rose more than 50% during the 2005 to 2015 period (see **Figure 2**). Wholesale Trade increased modestly over the same period (see **Figure 3**).

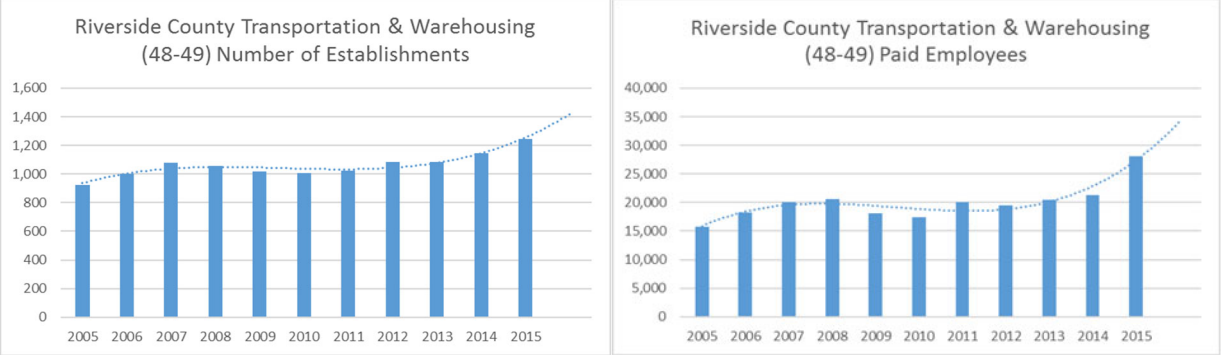
MANUFACTURING

Figure 1. Manufacturing Establishments and Employment in Riverside County, 2005-2015



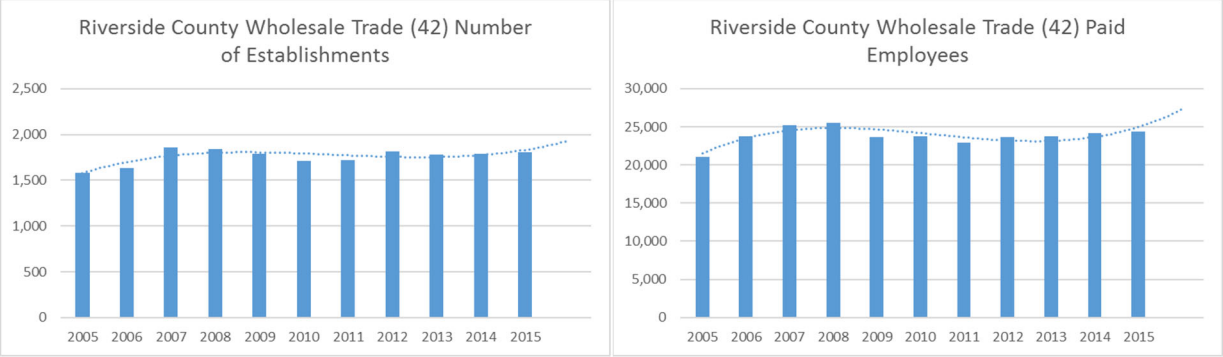
TRANSPORTATION & WAREHOUSING

Figure 2. Transportation & Warehousing Establishments and Employment in Riverside County, 2005-2015



WHOLESALE

Figure 3. Wholesaling Establishments and Employment in Riverside County, 2005-2015



Source: Census County Business Pattern data 2005-2015

As of 2015, the most recent year for which data are available, these three sectors continue to be dominated by small establishments, with at least 85% of establishments in each category having fewer than 20 employees. Countywide, there are only 17 establishments with 500 or more employees (five in manufacturing, eight in transportation and warehousing, and four in wholesale trade), and only five with 1,000 or more employees (one in manufacturing and four in transportation & warehousing).

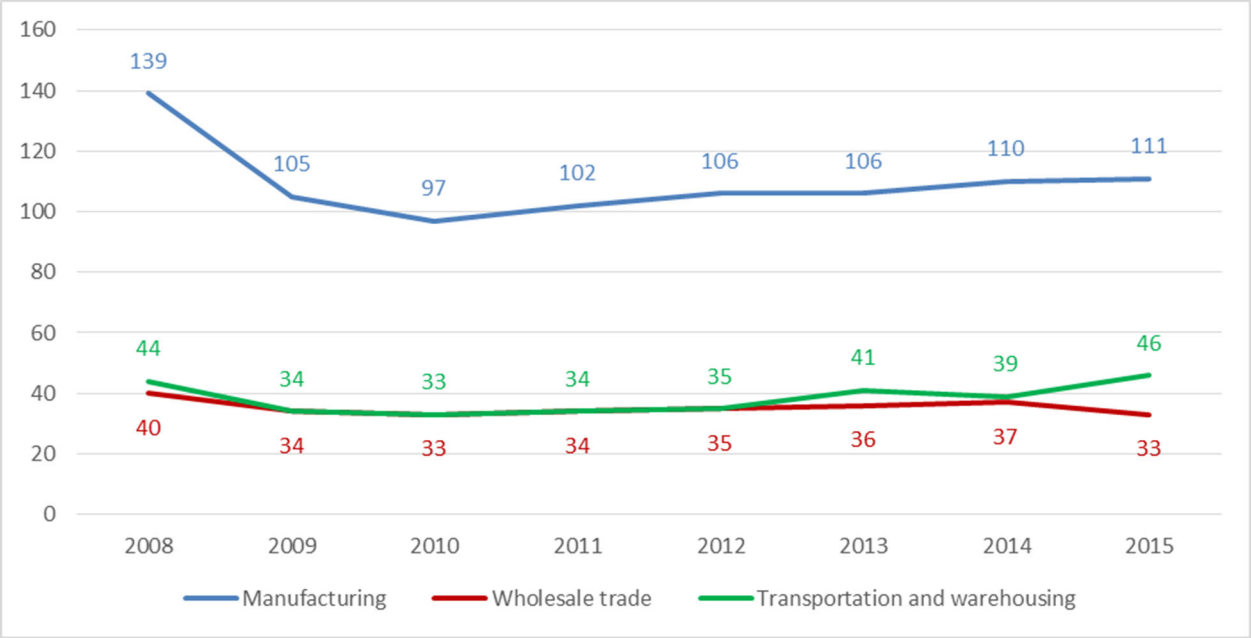
Table 2: Distribution of Establishments by Industry Category, 2015

Employees	Manufacturing	Transportation and warehousing	Wholesale trade	Sum
1 to 4 employees	587	761	983	2,331
5 to 9 employees	265	204	335	804
10 to 19 employees	216	121	258	595
20 to 49 employees	207	78	143	428
50 to 99 employees	109	37	54	200
100 to 249 employees	87	23	20	130
250 to 499 employees	19	15	9	43
500 to 999 employees	4	4	4	12
1,000 employees or	1	4	0	5
All establishments	**1495**	**1247**	**1806**	**4,548**

Large manufacturing and wholesale establishments have significantly higher warehousing activities than smaller ones. Therefore, it is worthwhile to examine the pattern in growth of large establishments in Riverside County (**Figure 4** and **Table 3**). Although the overall number of establishments with 100 or more employees has decreased since 2008 in the manufacturing and wholesale trade sectors, it has increased in the transportation & warehousing sector. Additionally, the number of establishments with 1,000 or more employees in the transportation & warehousing sector grew from one to four during this period.

Figure 4 and **Table 3** demonstrate a general growth trend in each of these three market sectors following the effects of the Great Recession causing declines, particularly in the manufacturing sector. These data also demonstrate considerable diversity in the size of the businesses within this sector in terms of total employees, with a general trend toward more numerous small businesses compared to large businesses. The general trend for growth in these market sectors that directly and indirectly include warehousing and logistics related activities, as well as the diversity in business sizes, support inclusion of the full range of these activities in each sector be considered to assess the extent of associated transportation impacts and mitigation needs.

Figure 4. Change in number of establishments with 100+ employees in Riverside County, 2008-2015.



Although building area is very desirable for the purpose of this study, Census does not provide any information about the square footage of warehouses or other establishments. Census, and therefore by reference other regional socio-economic forecasts like those developed by SCAG, are based on employees.

Table 3. Growth in Establishments with 50+ Employees, 2008-2015

Manufacturing								
Employees	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
100-249	106	80	74	80	82	81	84	87
250-499	24	19	20	17	19	20	21	19
500-999	7	5	2	4	4	4	4	4
1000+	2	1	1	1	1	1	1	1
Total	139	105	97	102	106	106	110	111
Transportation and warehousing								
Employees	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
100-249	25	15	17	20	22	28	25	23
250-499	13	16	11	8	7	8	9	15
500-999	5	2	4	3	5	3	3	4
1000+	1	1	1	3	1	2	2	4
Total	44	34	33	34	35	41	39	46
Wholesale trade								
Employees	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
100-249	29	21	19	20	22	22	23	20
250-499	7	9	9	11	10	12	11	9
500-999	3	3	3	2	2	1	2	4
1000+	1	1	2	1	1	1	1	0
Total	40	34	33	34	35	36	37	33

2.2. INFOGROUP GEOCODED DATABASE (SIC CODE)

Infogroup's[2] database provides information about businesses' location, size, and industry classification code. Although the data does not provide a complete list of all establishments, it has sufficient quality and coverage that it can be used to gain an extensive understanding of land uses and concentration of activities in various parts of the county.

Commercial establishments are organized by SIC code. In addition, the data is further broken down by number of employees at each establishment. Using this data, it is possible to get an idea of both the scope and scale of various industries in Riverside County. For informational purposes, a short description of each of the SIC categories relevant to this analysis is provided below.

Table 4. Description of Selected SIC Categories

Industry Code	Brief Description
20-39 (Manufacturing)	Establishments engaged in the mechanical or chemical transformation of materials or substances into new products. Usually described as plants, factories, or mills and characteristically use power driven machines and materials handling equipment. Establishments engaged in assembling component parts of manufactured products are also considered manufacturing if the new product is neither a structure nor other fixed improvement. Also included is the blending of materials, such as lubricating oils, plastics resins, or liquors.
42 (Transportation & Warehousing)	Establishments furnishing local or long-distance trucking or transfer services, or those engaged in the storage of farm products, furniture and other household goods, or commercial goods of any nature. The operation of terminal facilities for handling freight, with or without maintenance facilities, is also included.
50-51 (Wholesale Trade)	Establishments primarily engaged in selling merchandise to retailers; to industrial, commercial, institutional, farm, construction contractors, or professional business users; or to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies.

Source: U.S. Department of Labor, Occupational Safety & Health Administration

As shown on **Figure 5**, manufacturing establishments of all sizes (by primary or secondary SIC) are most heavily concentrated in Corona and Riverside along major freeway corridors, although the figure also demonstrates these activities are broadly distributed across the urbanized areas of Riverside County. Other areas with high concentrations include Mira Loma, Murrieta and Temecula. Corona, Riverside and Temecula are the only cities that contain manufacturing establishments with more than 500 employees.

[2] Infogroup is a private vendor of data on businesses.

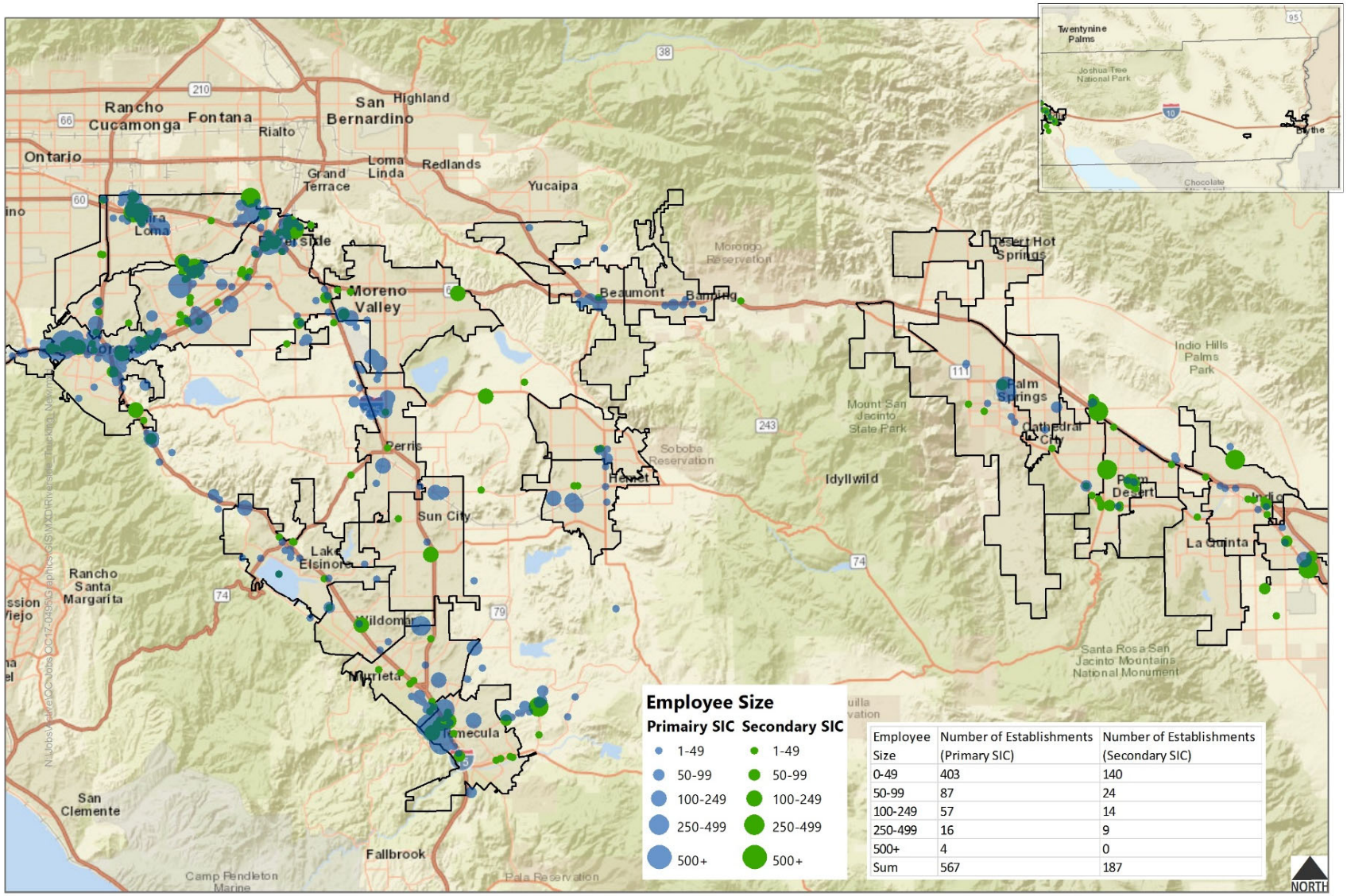
Represented on **Figure 6**, transportation & warehousing establishments with fewer than 50 employees are dispersed throughout the county, with the highest concentrations of establishments in Riverside, Corona and Temecula. Based on the primary SIC, only one establishment exceeds 50 employees and it is located in Mira Loma. Based on the secondary SIC, seven additional warehouse establishments have more than 50 employees; they are located in Corona, Mira Loma, Palm Desert and Riverside.

A total of 2,237 establishments countywide are characterized in wholesale trade as a primary function (**Figure 7**). This is several times larger than either manufacturing (567) or warehousing & transportation (483). Wholesale establishments of all sizes are similarly dispersed across the urbanized areas of the county, with some degree of concentration in Corona, Riverside and Temecula. There are six large wholesale establishments classified under primary code 50 and 51, with more than 500 employees in Coachella, Moreno Valley and Temecula. Based on the secondary SIC, there are also large wholesale establishments in Corona and Perris. In addition, there are 10 wholesale establishments with more than 500 employees in Perris.

It should be noted that there is no manufacturing, warehousing & transportation, or wholesale establishments of significance currently identified in the dataset within Blythe or the greater Palo Verde Valley. For this reason, the study effort will primarily focus on development activity in Western Riverside County and the Coachella Valley.

The overall number of establishments in each category is broadly consistent with the CBP numbers for Wholesale Trade, but not for Manufacturing and Transportation & Warehousing, where CBP shows a significantly larger number of establishments countywide. This is to be expected, given that CBP aims to be comprehensive, whereas Infogroup seeks to provide a sample and may take a more conservative approach in defining establishments. The Infogroup data is, however, useful in providing some idea of where establishments are or are not concentrated within the county. For each category, however, Infogroup appears to capture about a third of the establishments identified by CBP. Recognizing the limitations of the respective datasets, each provides useful information to validate and augment data derived from established regional sources, like SCAG, for the purposes of completing this study.

Figure 5. Distribution of Employment in Riverside County, Manufacturing



Employee Size	Number of Establishments (Primary SIC)	Number of Establishments (Secondary SIC)
0-49	403	140
50-99	87	24
100-249	57	14
250-499	16	9
500+	4	0
Sum	567	187

Figure 6. Distribution of Employment in Riverside County, Transportation & Warehousing

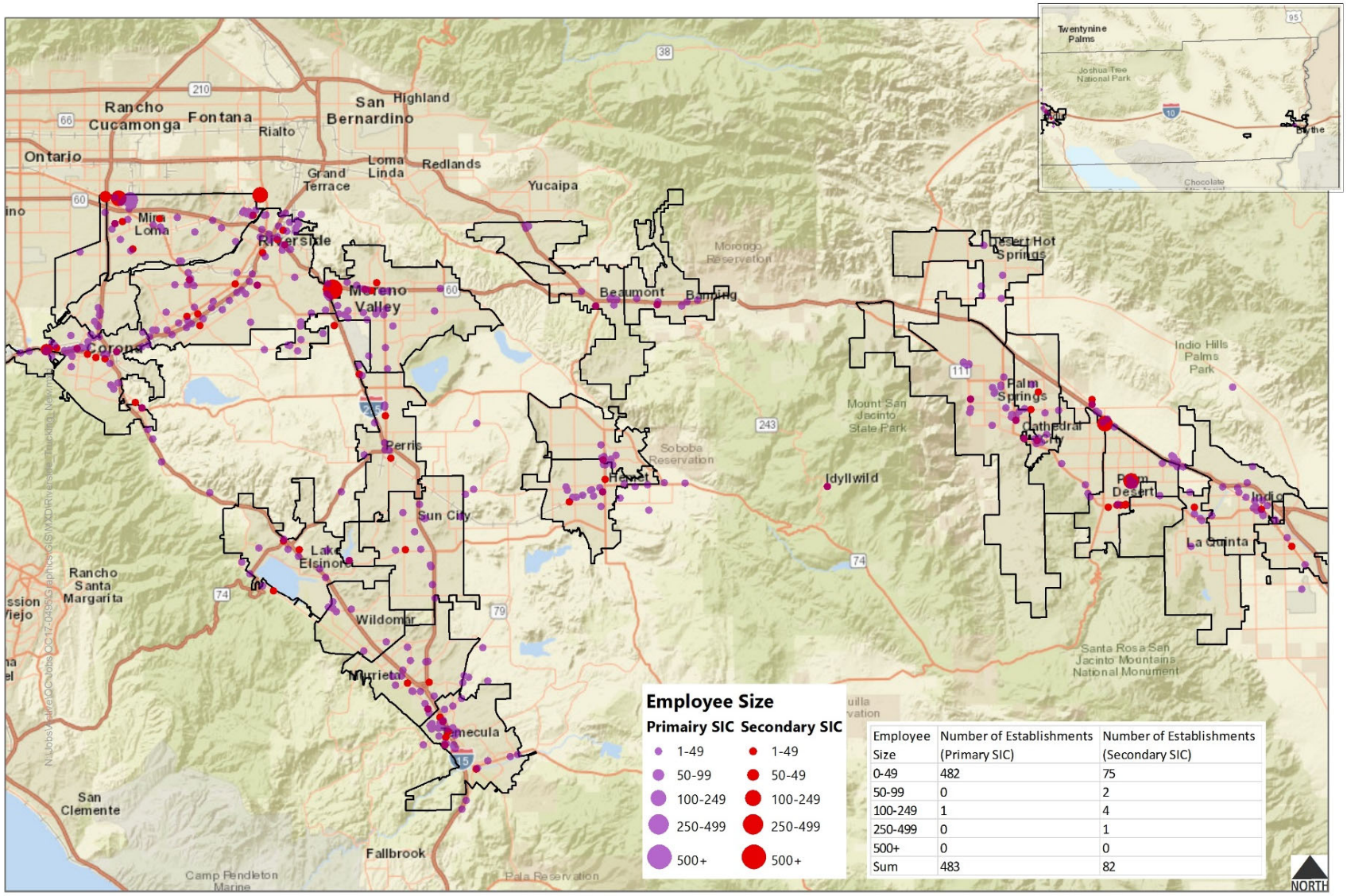
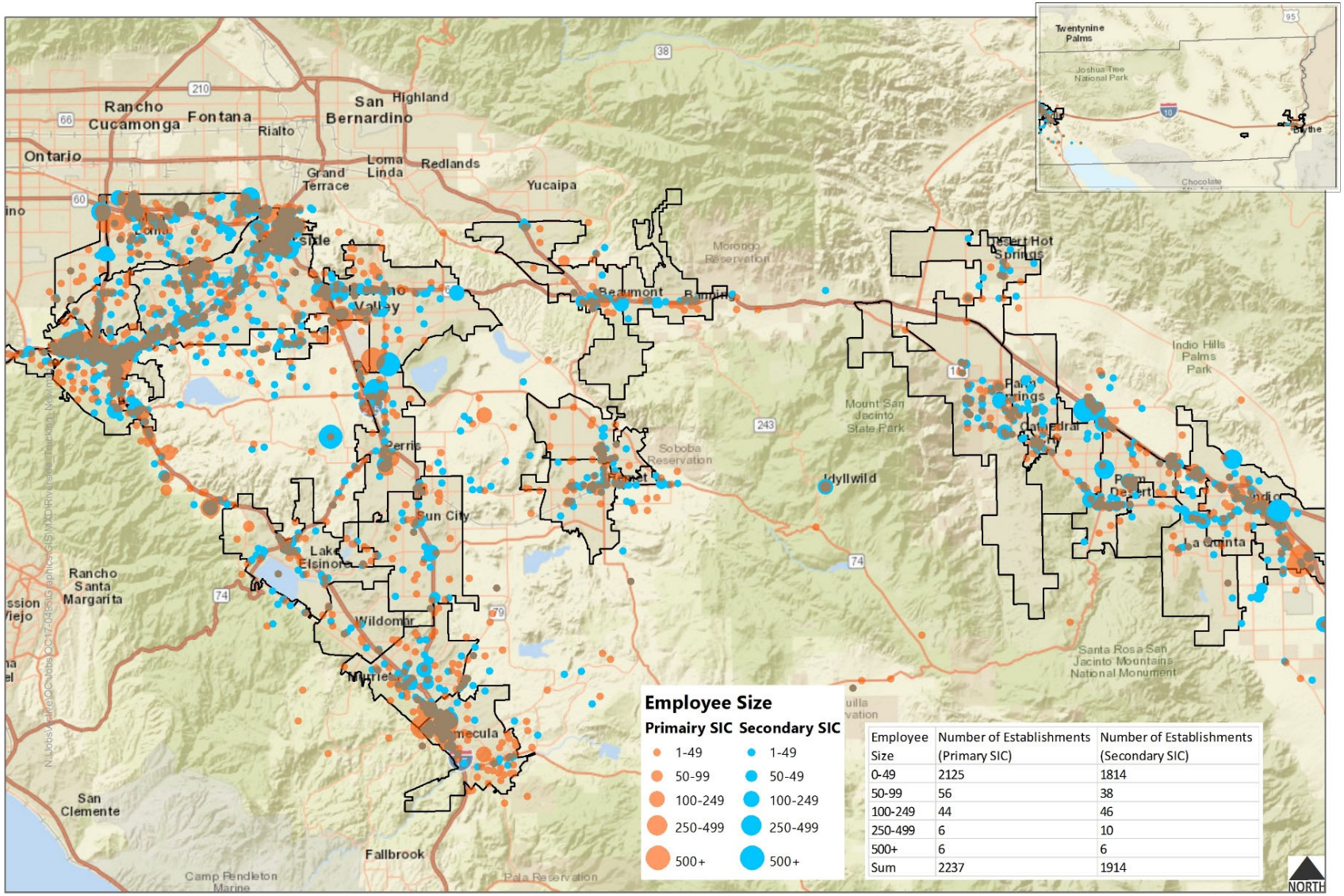


Figure 7. Distribution of Employment in Riverside County, Wholesale Trade



2.3. SCAG WAREHOUSE STUDY

SCAG's Industrial Warehouse Study provides estimates of existing and future warehouse square footage. Unfortunately at the time of preparing this report, this study was not officially released and therefore associated data were not able to be access for this study. The information presented here are based on land use data provided in the SCAG Heavy Duty Truck Model (HDT) developed for the 2016 RTP.

Warehouses are classified as High-Cube and Low-Cube in the SCAG HDT model. The high-cube warehouse is generally defined as a building with over 200,000 square feet of floor area and with a ceiling height of 24 feet or higher. The primary use of high-cube warehouses is storage, consolidation, and distribution of manufactured goods.

A high-cube warehouse is distinguished from a low-cube, or traditional, warehouse by several factors. Most prominent among these is a relative lack of automation in low-cube warehouses, leading to a larger number of human employees. High-cube warehouses, on the other hand, takes advantage of a very high degree of automation.

In addition, the two types are differentiated by economies of scale. Low-cube, traditional warehouses tend to be smaller on a square footage basis, with lower degree of automation, but higher employee per square feet ratio. High-cube warehouses process larger shipments with fewer employees relative to the warehouse's square footage. This means that, as compared to high-cube warehouses, low-cube warehouses generate fewer truck trips per employee (owing to the relatively larger number of employees proportional to size) but more truck trips per thousand square feet (because of smaller size of warehouse and smaller size of shipments).

By way of example, automation may mean that employees at a high-cube warehouse are able to handle higher shipment volumes than their counterparts at low-cube warehouses. Not only are total shipment volumes likely to be higher, but each individual shipment is likely to be larger. This means that truck trips are divided over a smaller number of employees. A low-cube warehouse will handle, on average, smaller shipments, and need a comparatively larger number of employees to handle them. This means that those truck trips handled at a low-cube warehouse will be spread over a larger number of employees.

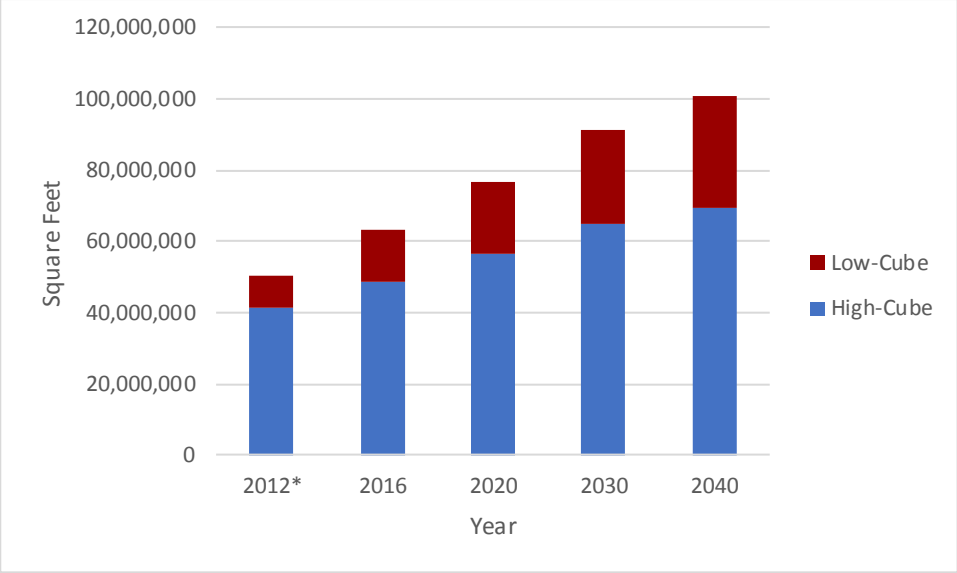
Based on information in 2016 SCAG HDT model, Riverside County is home to 76 million square feet of high-cube and low-cube warehouse space, and it is projected to grow through approximately 2030, before leveling off in expectation of market competition from other land uses. It is anticipated that in the long term, the attractiveness of other land uses and a lack of

easily developable land will exert downward pressure on the growth of warehouse square footage and employment in Riverside County. The changes predicted by this forecast are indicated in the figures below. By either measure (number of employment or square footage), the increase in warehouse capacity in Riverside County will be substantial during the 2012 to 2040 period, and constitutes both high-cube and low-cube warehouse growth. It is important to note that the comparison between 2012 and other years is not possible since the definition of "warehouse area" between 2012 baseline scenario and other scenarios are not consistent. The area shown in 2012 includes total available floor space, while the area shown in 2016 and years after includes only planned occupied floor space. Therefore the comparison analysis are only presented based on 2016 and 2040 scenarios for consistency.

As shown on **Figure 8** and **Figure 9**, although both high-cube and low-cube warehouse capacity are projected to increase substantially between 2016 and 2040, the increase for low-cube warehouse space is from 20,111 KSF to 31,232 KSF during this period (55%). This is significantly greater on a percentage basis (but lower in absolute terms) than the anticipated increase for high-cube warehouses space, from 56,393 KSF to 69,410 KSF (23%). As shown in detail on **Table 5**, and **Table 6**, this difference is somewhat less pronounced for employment, with low-cube warehouses increasing from 3,819 to 7,427 employees (94%), but with high-cube warehouses increasing from 3,256 employees to 6,185 by 2040 (90%).

It is important to remember that these forecasts are based on model data that must be considered in the context of modeling limitations. The addition or subtraction of just a few projects, particularly on the scale of high-cube warehouses, has the potential to make real-world conditions significantly different from the model's prediction. Despite the limitations in the model data, the anticipated growth in both high-cube and low-cube warehousing activity reiterates the appropriateness of considering all warehousing and logistics related uses as part of this study effort to assess the full transportation system impacts of this anticipated growth.

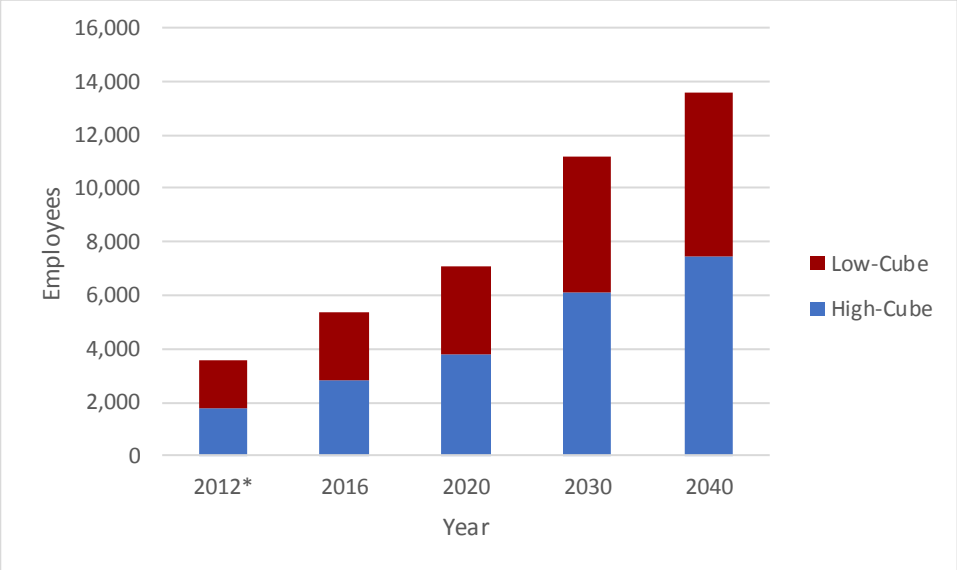
Figure 8. Warehouse Area Trend from 2012-2040 in Riverside County



* The area shown in 2012 includes total available floor space. The area shown in 2016 and years after includes planned occupied floor space.

Source: SCAG 2016 RTP

Figure 9. Warehouse Employment Trend from 2012 to 2040 in Riverside County



* The area shown in 2012 includes total available floor space. The area shown in 2016 and years after includes planned occupied floor space.

Source: SCAG 2016 RTP

Table 5 and **Table 6** show the employment ratio per 1000 square feet of each warehouse category. Based on SCAG information, the employee ratio for low-cube warehouse is at least twice higher than the ratio for high-cube warehouse. The tables also reflect a modest increase

over time in the ratio of employees per KSF for both high-cube and low-cube warehouses, although it not clear why this ratio is increasing in future year.

Table 5. High-Cube Warehouse Trends in Riverside County, 2012-2040

Year	Warehouse Area (square feet)	Employment	Employee/KSF
2012*	41,281,541	1,793	0.04
2016	48,837,363	2,810	0.06
2020	56,393,177	3,819	0.07
2030	64,664,947	6,120	0.09
2040	69,410,192	7,427	0.11

Table 6. Low-Cube Warehouse Trends in Riverside County, 2012-2040

Year	Warehouse Area (square feet)	Employment	Employee/KSF
2012*	8,833,418	1,804	0.20
2016	14,472,627	2,533	0.18
2020	20,111,826	3,256	0.16
2030	26,810,782	5,070	0.19
2040	31,231,977	6,185	0.20

* The area shown in 2012 includes total available floor space. The area shown in 2016 and years after includes planned occupied floor space.

Source: SCAG 2016 RTP

Table 7 shows the anticipated growth in high- and low-cube warehouse space in each Traffic Analysis Zone (TAZ) in Riverside County that has warehouse space. The rightmost column in the chart provides the sum in growth of both high- and low-cube warehouses during the period from 2016 to 2040.

SCAG's forecast anticipates that warehouse square footage growth will be highly concentrated. A single TAZ on the outskirts of Moreno Valley accounts for 56.3% of the expected growth between 2016 and 2040, and the 10 TAZs with the highest expected growth (on an absolute basis) will account for 90.3% of the county's overall warehouse growth in this period. Of the top 10, three are located in Moreno Valley, two are located in Coachella, and one each are located in Corona, Perris, Lake Elsinore, Jurupa Valley, and Hemet. The spatial distribution of this forecast reflects known warehousing and logistics development plans (like the World

Logistics Center in Moreno Valley) along with the influences of declining land availability in the region for warehouse and logistics related uses over time, especially high-cube uses that demand larger sites with transportation system accessibility. This influence of declining land availability is also reflected in the leveling off of the forecast rate of growth described previously, which accounts for the exhaustion of readily available land in later forecast years and the associated economics of locating highest and best value land uses making it less desirable to locate additional warehousing and logistics uses in Riverside County.

Table 7. Amount of Warehouse Space by TAZs in Riverside County (KSF)

TAZ_ID	High-cube 2016	Low-cube 2016	High-cube 2020	Low-cube 2020	High-cube 2030	Low-cube 2030	High-cube 2040	Low-cube 2040	Total Change from 2016-2040	Percent change from 2016 - 2040	Percent of total growth countywide
43344	5,417	2,323	10,834	4,646	16,778	7,201	20,136	8,628	21,024	271.63%	56.31%
43336	641	1,497	1,282	2,993	2,421	5,657	3,198	7,461	8,521	398.55%	22.82%
43338	101	231	202	462	297	696	355	822	845	254.52%	2.26%
43148	4,437	410	4,437	614	4,438	892	4,437	1,029	619	12.77%	1.66%
43571	-	-	-	-	382	-	594	-	594	0.00%	1.59%
43130	2,050	465	2,050	465	2,050	545	2,050	988	522	20.80%	1.40%
43364	-	182	-	182	221	232	331	293	442	242.86%	1.18%
43573	-	-	-	-	281	-	421	-	421	0.00%	1.13%
43302	655	-	1,072	-	1,072	-	1,072	-	417	63.66%	1.12%
43305	302	-	604	-	604	-	604	-	302	100.00%	0.81%
43264	-	-	-	-	200	-	300	-	300	0.00%	0.80%
43187	-	119	-	239	-	299	-	340	221	185.71%	0.59%
43575	156	37	311	75	311	75	311	75	193	100.00%	0.52%
43260	2,031	820	2,031	1,	2,032	1,002	2,031	1,002	180	6.38%	0.48%
43452	172	-	343	-	344	-	343	-	172	99.42%	0.46%
43345	-	-	-	-	-	109	-	163	163	0.00%	0.44%
43448	-	60	-	119	-	180	-	209	150	248.33%	0.40%
43286	-	-	-	-	-	87	-	149	149	0.00%	0.40%
43332	101	44	202	88	202	88	202	88	145	100.00%	0.39%
43249	3,197	1,716	3,197	1,860	3,198	1,864	3,197	1,860	144	2.93%	0.39%
43395	131	-	262	-	262	-	262	-	131	100.00%	0.35%
43415	2,992	244	2,992	244	2,993	328	2,992	369	124	3.86%	0.33%
43134	474	454	474	509	474	554	474	574	120	12.93%	0.32%
43454	119	-	237	-	237	-	237	-	119	99.16%	0.32%
43168	491	-	491	-	491	77	491	116	116	23.63%	0.31%

TAZ_ID	High-cube 2016	Low-cube 2016	High-cube 2020	Low-cube 2020	High-cube 2030	Low-cube 2030	High-cube 2040	Low-cube 2040	Total Change from 2016-2040	Percent change from 2016 - 2040	Percent of total growth countywide
43409	-	-	-	-	-	72	-	108	108	0.00%	0.29%
43366	-	-	-	-	-	59	-	89	89	0.00%	0.24%
43236	-	83	-	165	-	165	-	165	83	98.80%	0.22%
43399	-	81	-	162	-	163	-	162	81	100.00%	0.22%
43265	-	-	-	-	-	53	-	80	80	0.00%	0.21%
43488	-	78	-	155	-	156	-	155	78	98.72%	0.21%
43563	308	162	308	162	308	208	308	232	70	14.89%	0.19%
43246	328	487	328	547	328	548	328	547	61	7.36%	0.16%
43276	-	59	-	117	-	118	-	117	59	98.31%	0.16%
43429	-	57	-	115	-	115	-	115	57	101.75%	0.15%
43162	-	-	-	-	-	33	-	56	56	0.00%	0.15%
43181	821	61	821	61	822	95	821	112	51	5.78%	0.14%
43420	286	48	286	96	286	97	286	96	48	14.37%	0.13%
43261	-	120	-	163	-	163	-	163	43	35.83%	0.12%
43136	289	193	289	233	289	233	289	233	40	8.30%	0.11%
43310	-	40	-	80	-	80	-	80	40	100.00%	0.11%
43125	5,048	692	5,048	727	5,049	729	5,048	727	36	0.61%	0.10%
43474	-	32	-	65	-	65	-	65	32	103.13%	0.09%
43397	-	31	-	62	-	62	-	62	31	100.00%	0.08%
43188	380	145	380	175	380	175	380	175	30	5.71%	0.08%
43214	-	285	-	311	-	312	-	311	27	9.12%	0.07%
TOTAL	30,927	11,256	38,481	15,892	46,750	23,587	51,498	28,016	37,334	88.50%	100.00%

Source: SCAG Warehouse Study

Figure 10. High Cube Warehouse Area in Riverside County in 2016 by SCAG Tier I TAZ

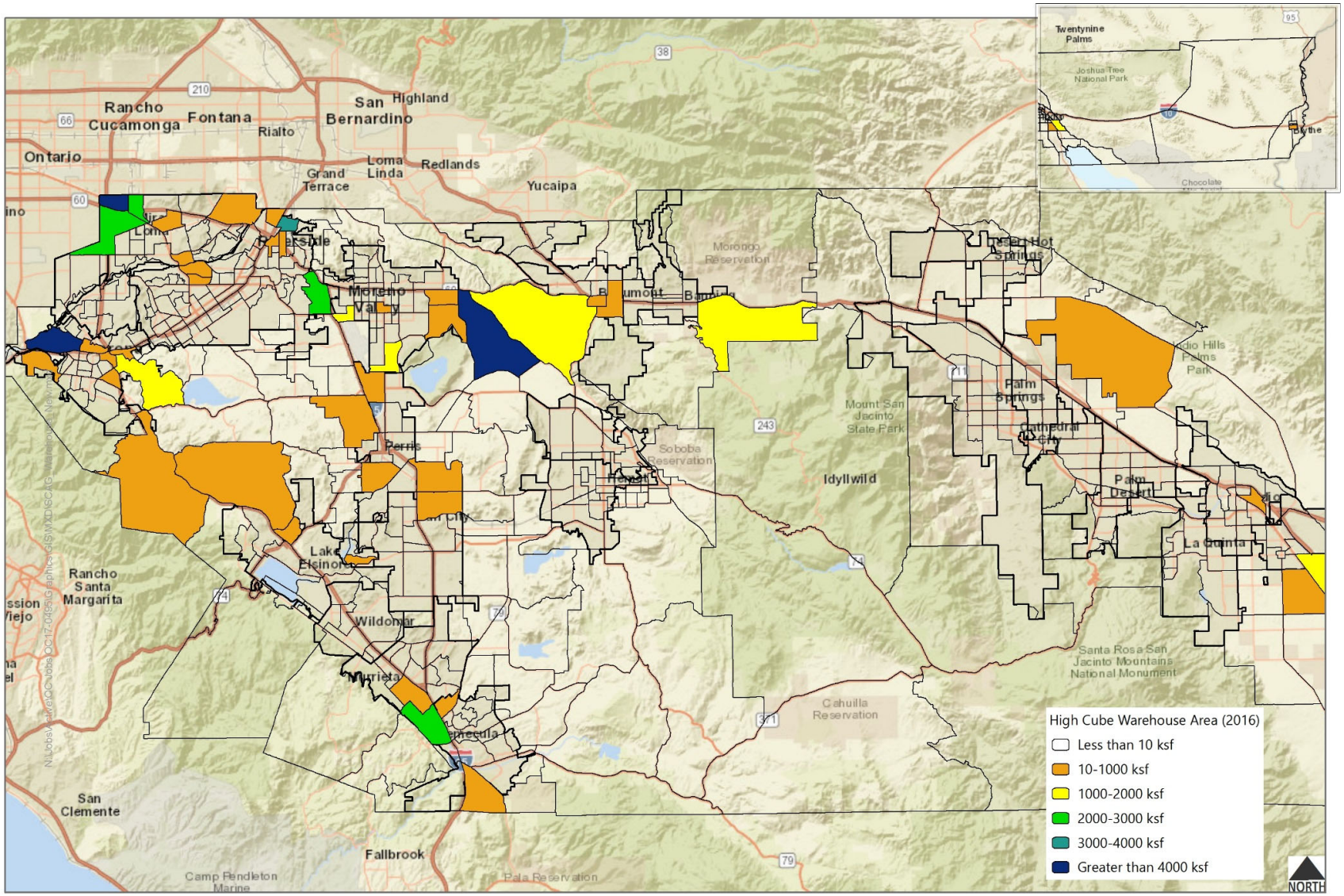


Figure 11. Low Cube Warehouse Area in Riverside County in 2016 by SCAG Tier I TAZ

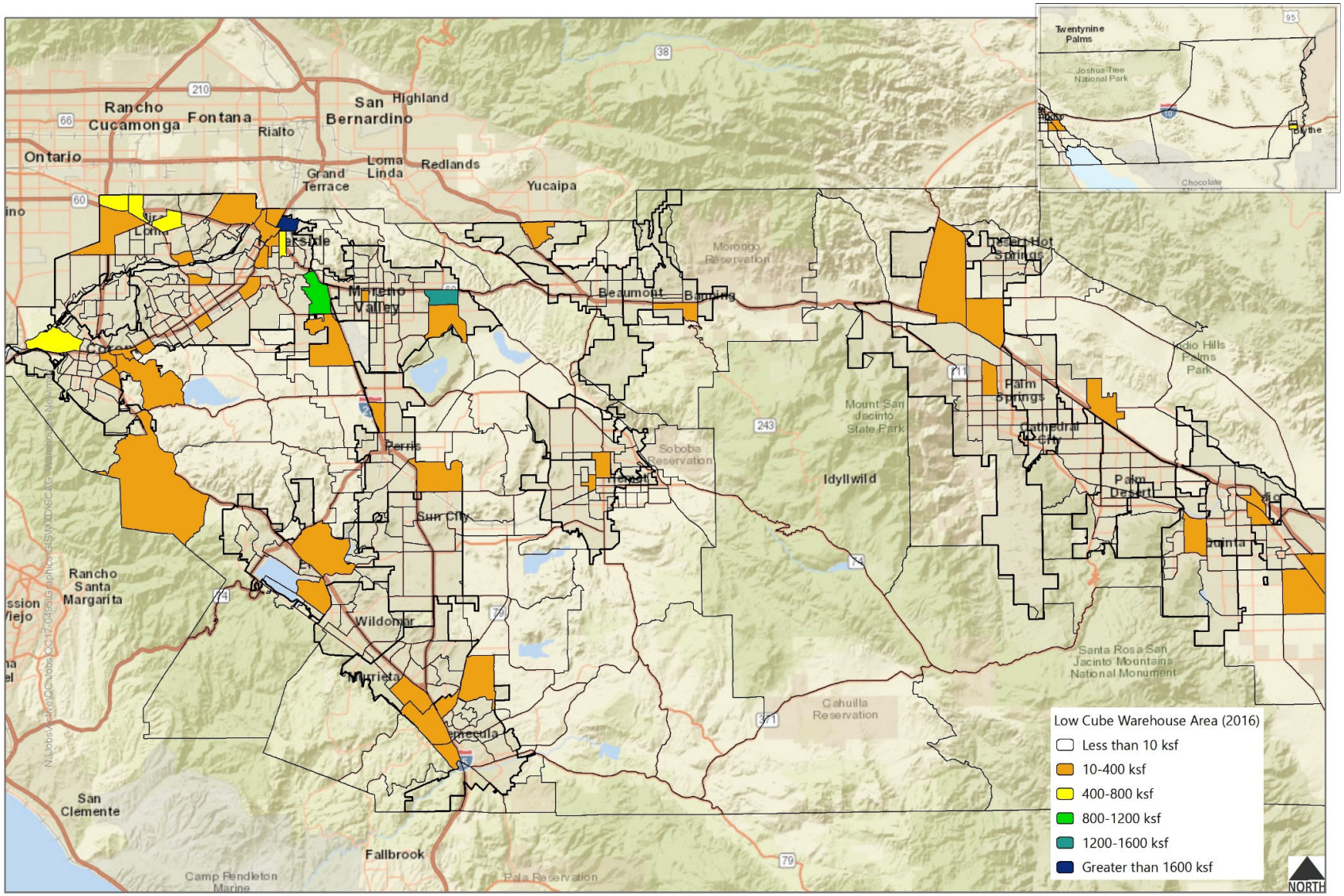


Figure 12. SCAG Expected High Cube Warehouse Area Growth in Riverside County 2016 to 2040 by SCAG Tier I TAZ

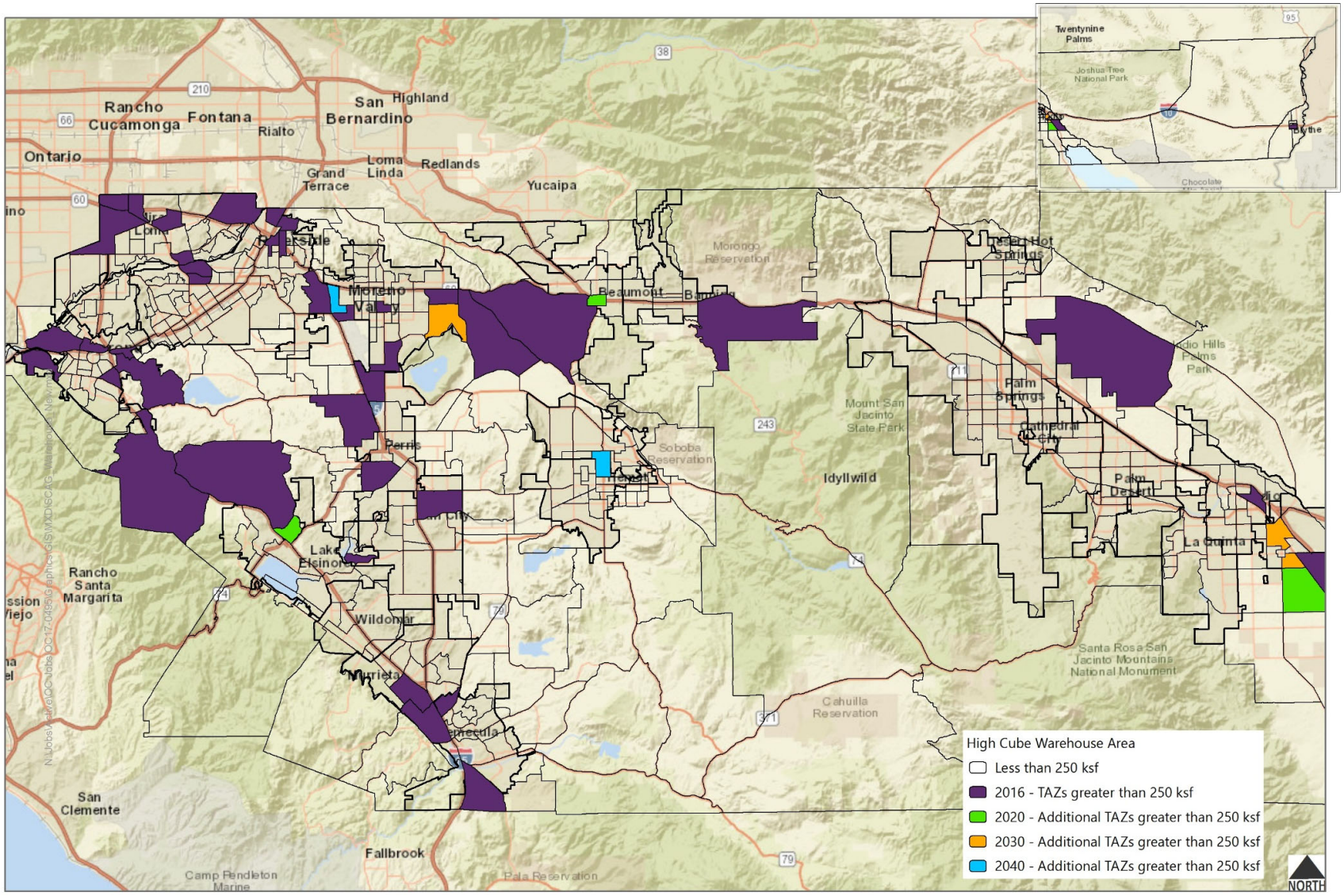
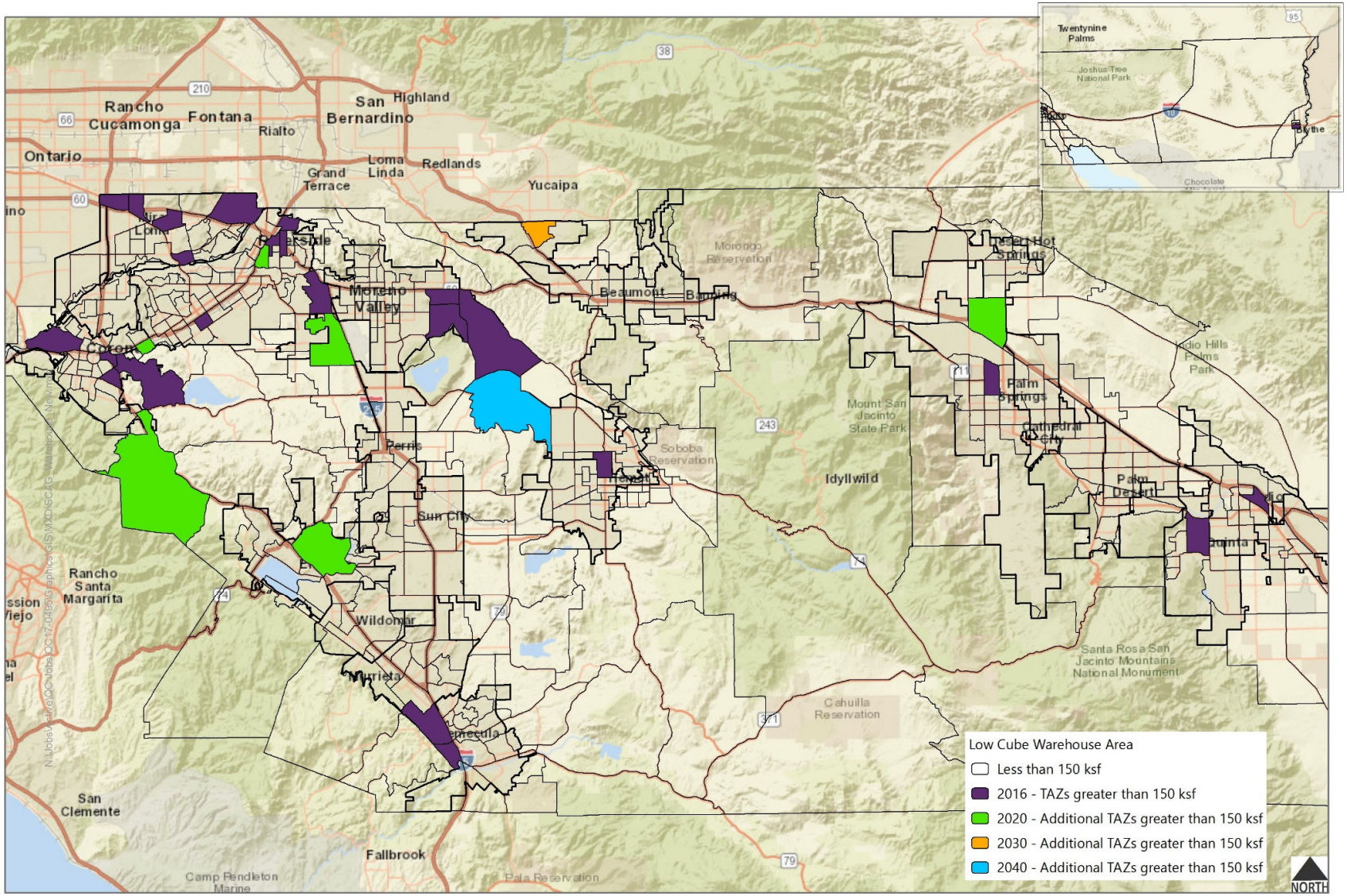


Figure 13. SCAG Expected Low Cube Warehouse Area Growth in Riverside County 2016 to 2040 by SCAG Tier I TAZ



3. TRUCK COUNTS

The SCAG RTP 2016 uses a comprehensive truck count database (2012-2013 counts) for HDT model calibration. This information helps to understand the magnitude of trucking activities on various segments of highway. This database has 74 locations on state and interstate facilities in Riverside County, as indicated in the following table. SCAG is currently conducting a project to update this database using 2016 counts. **Table 8** summarizes available truck counts on the state highway system in Riverside County. By comparing actual truck counts and GPS sample truck O-D information, it is possible to validate data derived from the SCAG regional model as well as estimate the share of truck traffic on each segment that is generated in Riverside County relative to the through traffic (trips with both origin and destination outside of the county)

Table 8. SCAG 2013 Truck Classification Count Locations within Riverside County

Facility TYPE	ON STREET	CROSS STREET	CROSS STREET 2
Interstate	I 10 (REDLANDS FWY) EB	Main St	SH 111
Interstate	I 10 (REDLANDS FWY) EB	Main St	SH 111
Interstate	I 10 (REDLANDS FWY) WB	Main St	SH 111
Interstate	I 10 (REDLANDS FWY) WB	Main St	SH 111
Interstate	I 10 EB	WEST OF	MESA DR
Interstate	I 10 EB	Dillon Rd	Aqueduct Rd Intchg
Interstate	I 10 EB	WEST OF	MESA DR
Interstate	I 10 EB	Dillon Rd	Aqueduct Rd Intchg
Interstate	I 10 EB (Sonny Bono Memorial Fwy)	N Gene Autry Trl	Date Palm Dr
Interstate	I 10 EB (Sonny Bono Memorial Fwy)	N Gene Autry Trl	Date Palm Dr
Interstate	I 10 WB	WEST OF	MESA DR
Interstate	I 10 WB	Dillon Rd	Aqueduct Rd Intchg
Interstate	I 10 WB	WEST OF	MESA DR
Interstate	I 10 WB	Dillon Rd	Aqueduct Rd Intchg
Interstate	I 10 WB (Sonny Bono Memorial Fwy)	N Gene Autry Trl	Date Palm Dr
Interstate	I 10 WB (Sonny Bono Memorial Fwy)	N Gene Autry Trl	Date Palm Dr
Interstate	I 15 (ONTARIO FWY) NB	68th St	Detroit St
Interstate	I 15 (ONTARIO FWY) NB	68th St	Detroit St
Interstate	I 15 (ONTARIO FWY) SB	68th St	Detroit St

Facility TYPE	ON STREET	CROSS STREET	CROSS STREET 2
Interstate	I 15 (ONTARIO FWY) SB	68th St	Detroit St
Interstate	I 15 (TEMECULA VALLEY FWY) NB	Temescal Canyon Rd	Lake St
Interstate	I 15 (TEMECULA VALLEY FWY) NB	Baxter Rd	Clinton Keith Rd
Interstate	I 15 (TEMECULA VALLEY FWY) NB	Temescal Canyon Rd	Lake St
Interstate	I 15 (TEMECULA VALLEY FWY) NB	Baxter Rd	Clinton Keith Rd
Interstate	I 15 (TEMECULA VALLEY FWY) SB	Temescal Canyon Rd	Lake St
Interstate	I 15 (TEMECULA VALLEY FWY) SB	Baxter Rd	Clinton Keith Rd
Interstate	I 15 (TEMECULA VALLEY FWY) SB	Temescal Canyon Rd	Lake St
Interstate	I 15 (TEMECULA VALLEY FWY) SB	Baxter Rd	Clinton Keith Rd
Interstate	I 215 (ESCONDIDO FWY) NB	W Nuevo Rd	North D St
Interstate	I 215 (ESCONDIDO FWY) NB	Keller Rd	Clinton Keith Rd
Interstate	I 215 (ESCONDIDO FWY) NB	W Nuevo Rd	North D St
Interstate	I 215 (ESCONDIDO FWY) NB	Keller Rd	Clinton Keith Rd
Interstate	I 215 (ESCONDIDO FWY) SB	W Nuevo Rd	North D St
Interstate	I 215 (ESCONDIDO FWY) SB	Keller Rd	Clinton Keith Rd
Interstate	I 215 (ESCONDIDO FWY) SB	W Nuevo Rd	North D St
Interstate	I 215 (ESCONDIDO FWY) SB	Keller Rd	Clinton Keith Rd
Interstate	I 215 (RIVERSIDE FWY) NB	Center St	Columbia Ave
Interstate	I 215 (RIVERSIDE FWY) NB	Center St	Columbia Ave
Interstate	I 215 (RIVERSIDE FWY) SB	Center St	Columbia Ave
Interstate	I 215 (RIVERSIDE FWY) SB	Center St	Columbia Ave
State Route-Full Access	E PALM CANYON DR	N Gene Autry Trl	Golf Club Dr
State Route-Full Access	E PALM CANYON DR	N Gene Autry Trl	Golf Club Dr
State Route-Full Access	Grapefruit Blvd	Ave 48	Ave 49
State Route-Full Access	Grapefruit Blvd	At	Imperial / Riverside County Line
State Route-Full Access	Grapefruit Blvd	Ave 48	Ave 49
State Route-Full Access	Grapefruit Blvd	At	Imperial / Riverside County Line
State Route-Full Access	PINACATE RD	Antelope Rd	Palomar Rd
State Route-Full Access	PINACATE RD	Antelope Rd	Palomar Rd
State Route-Full Access	S 71 (CORONA EXPY) NB	EUCLID AVE	S 91 (RIVERSIDE FWY)
State Route-Full Access	S 71 (CORONA EXPY) NB	EUCLID AVE	S 91 (RIVERSIDE FWY)
State Route-Full Access	S 71 (CORONA EXPY) SB	EUCLID AVE	S 91 (RIVERSIDE FWY)
State Route-Full Access	S 71 (CORONA EXPY) SB	EUCLID AVE	S 91 (RIVERSIDE FWY)
State Route-Full Access	S 74 (PINES TO PALMS HIGHWAY)	Santa Rosa Rd	PALM CANYON DR

Facility TYPE	ON STREET	CROSS STREET	CROSS STREET 2
State Route-Full Access	S 74 (PINES TO PALMS HIGHWAY)	Santa Rosa Rd	PALM CANYON DR
State Route-Full Access	State Highway 74 / Pines to Palms Hwy	South of	Portola Ave
State Route-Full Access	State Highway 74 / Pines to Palms Hwy	South of	Portola Ave
State Route-Full Access	WINCHESTER RD	Thompson Rd	Pourroy Rd
State Route-Full Access	WINCHESTER RD	Thompson Rd	Pourroy Rd
State Route-Full Access	WINCHESTER RD	Thompson Rd	Pourroy Rd
State Route-Limited Access	S 60 (Moreno Valley Fwy) EB	Moreno Beach Dr	Redlands Blvd
State Route-Limited Access	S 60 (Moreno Valley Fwy) EB	Moreno Beach Dr	Redlands Blvd
State Route-Limited Access	S 60 (Moreno Valley Fwy) WB	Moreno Beach Dr	Redlands Blvd
State Route-Limited Access	S 60 (Moreno Valley Fwy) WB	Moreno Beach Dr	Redlands Blvd
State Route-Limited Access	S 60 (POMONA FWY) EB	Hall Ave	Market St
State Route-Limited Access	S 60 (POMONA FWY) EB	Hall Ave	Market St
State Route-Limited Access	S 60 (POMONA FWY) WB	Hall Ave	Market St
State Route-Limited Access	S 60 (POMONA FWY) WB	Hall Ave	Market St
State Route-Limited Access	S 91 (Riverside Fwy) EB	Chino Valley Fwy (SH 71)	Serfas Club Dr/ Auto Center Dr
State Route-Limited Access	S 91 (Riverside Fwy) EB	Chino Valley Fwy (SH 71)	Serfas Club Dr/ Auto Center Dr
State Route-Limited Access	S 91 (Riverside Fwy) WB	Chino Valley Fwy (SH 71)	Serfas Club Dr/ Auto Center Dr
State Route-Limited Access	S 91 (Riverside Fwy) WB	Chino Valley Fwy (SH 71)	Serfas Club Dr/ Auto Center Dr
State Route-Limited Access	State Hwy 86 NB	Dillon Rd	50th Ave
State Route-Limited Access	State Hwy 86 NB	Dillon Rd	50th Ave
State Route-Limited Access	State Hwy 86 SB	Dillon Rd	50th Ave
State Route-Limited Access	State Hwy 86 SB	Dillon Rd	50th Ave

Caltrans regularly conducts vehicle classification counts on different segments of the highway network. The 2015 counts are presented in **Table 9**.

Table 9. CALTRANS Truck Counts Database

ID	Route	Post mile	Leg	Description and Approximate Location	Vehicle AADT Total	Truck AADT Total	Truck % Total Vehicle	Truck AADT Total by number of Axles				% Truck AADT by number of Axles			
								2	3	4	5	2	3	4	5
1	10	R58.89	A	Dillon Rd. (Coachella)	25,000	8,693	35	1,110	198	94	7,291	12.8	2.3	1.1	83.9
2	10	R105.087	B	Jct. Rte. 177 North (Desert Center)	24,600	8,693	35	1,110	198	94	7,291	12.8	2.3	1.1	83.9
3	10	R105.087	A	Jct. Rte. 177 North (Desert Center)	23,700	8,721	37	1,128	169	96	7,328	12.9	1.9	1.1	84.0
4	10	R149.15	B	Jct. Rte. 78 South (Blythe)	25,300	8,730	35	1,053	177	133	7,367	12.1	2.0	1.5	84.4
5	10	R149.15	A	Jct. Rte. 78 South (Blythe)	27,000	8,881	33	1,174	197	108	7,402	13.2	2.2	1.2	83.3
6	15	22.277	B	Jct. Rte. 74 (Lake Elsinore)	125,000	9,331	7	4,736	664	307	3,624	50.8	7.1	3.3	38.8

Source: Caltrans 2015 Truck counts.

4. TRUCK O-D AND ROUTING

A sample of mobile device and GPS truck trajectory data for weekdays in September 2016 was purchased from Streetlight® for this study. This data was used to identify truck origin-destination (O-D) patterns between zones in Riverside County, and between Riverside County and other regions, in part to validate similar information derived from the SCAG model. This data is also particularly helpful in identifying the share of through trips (trips with origin and destination outside of Riverside County, but passing through the county).

For the purposes of the O-D analysis, the TAZs in SCAG model were aggregated into 22 zones representing Riverside County and 11 zones representing the SCAG region outside Riverside County. **Figure 14** shows the boundaries of these zones.

This Streetlight data is classified by truck weights: heavy-duty trucks and medium-duty trucks. Heavy-duty trucks are those with minimum gross weight of 26,000 pounds. The medium-duty trucks are those with gross weight between 14,000 and 26,000 pounds.

Table 10 and **Table 11** show the O-D distribution for these two truck categories within the SCAG counties. Trips with at least one end external to the region are excluded from these tables. The GPS data was used to create a detailed O-D distribution between the 33 identified zones, which will be used by the team to fine-tune the model forecasts. In this analysis intermediate stops (less than 30 minutes), which are presumably for fuel or food, are eliminated so that long-distance trips are not mistaken for a series of short-distance trips. These tables show the share of each O-D pair in entire SCAG region. For example,15% of heavy duty truck trips in the SCAG region originate in Riverside County. Additionally, 7.3% of heavy duty truck trips and 10.4% of medium duty truck trips in the SCAG region start and end in Riverside County. This is reasonable because smaller trucks tends to travel shorter distances to perform multiple local deliveries.

Table 10. Heavy-Duty Truck O-D Distribution in SCAG Region

O \ D	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Total
Imperial	0.8%	0.0%	0.0%	0.2%	0.1%	0.0%	1%
Los Angeles	0.0%	25.8%	2.0%	2.3%	6.0%	0.6%	37%
Orange	0.0%	2.1%	3.0%	0.5%	1.1%	0.1%	7%
Riverside	0.1%	2.4%	0.5%	7.3%	5.0%	0.1%	15%
San Bernardino	0.1%	6.3%	1.2%	5.1%	25.1%	0.2%	38%
Ventura	0.0%	0.6%	0.0%	0.1%	0.2%	1.0%	2%
Total	1%	37%	7%	16%	37%	2%	100%

Table 11. Medium-Duty Truck O-D Distribution in SCAG Region

O \ D	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Total
Imperial	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1%
Los Angeles	0.0%	46.1%	2.2%	0.7%	1.6%	0.7%	51%
Orange	0.0%	2.2%	13.0%	0.5%	0.4%	0.0%	16%
Riverside	0.1%	0.7%	0.5%	10.4%	1.6%	0.0%	13%
San Bernardino	0.0%	1.6%	0.4%	1.6%	9.6%	0.0%	13%
Ventura	0.0%	0.7%	0.0%	0.0%	0.0%	3.9%	5%
Total	1%	51%	16%	13%	13%	5%	100%

Trips between zones for medium- and heavy-duty trucks are shown on **Table 12** and **Table 13**, respectively. For medium trucks, all 20 of the O-D pairs with the highest number of trips are the same zone (namely, short trips remaining within the same zone). The more frequent trip between two different zones is from Zone 14 to 21 (adjacent zones in the desert), which accounts for 31% of the traffic originating from Zone 14.

The situation is similar for heavy-duty trucks, where the 12 O-D pairs with the highest number of trips are the same zone. The most frequent trip between Zone 1 (northwestern Riverside County) and Zone 30 (southwestern San Bernardino County), accounting for 26% of trips from Zone 1. Beyond this, the most frequent trips are from Zone 17 to Zone 30 and from Zone 19 to Zone 31 (both 25% of trips originating from those respective links).

The distribution of trips on 29 selected segments of the highway network in Riverside County were also investigated. This analysis used a sample of GPS truck trip trajectories to understand the origin-destination of trips on a given facility. In this analysis, intermediate stops are included and counted as separate trips since these trips will contribute to congestion on local streets.

Table 14 shows the share of truck trips generated in Riverside County compared to the share of truck trips generated in SCAG area from the total truck traffic on each of the links. For heavy-duty trucks, Riverside County generated the most traffic on Links 17, 18, 19, 20, 21, and 23. Of these links, three are located on SR-60, two are located on I-215, and one is located on SR-91. Overall, Riverside is a comparatively bigger generator of medium-duty truck trips, although the busiest links are similar: Links 17, 18, 19, 21, 22, 23, and 24. Of these, three are on I-215, two are on SR-60, and two are on SR-91.

The patterns identified by these data are particularly useful for validating and refining other data sources as the basis for determining the fair share of trips generated by warehousing and logistics uses in Riverside County compared to those trips (or the portion of trips) generated by uses outside of the county.

Table 12. Distribution of Trips by Zone for Medium-Duty Trucks (% by Destination)

O \ D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	SUM
1	18	2	4	4			1				1						6	3	1	1			3	1		3	2		7	21	11	1		100
2	2	21	5	15		2	4		1	1	1	2						1	5	5			1			2	1		4	8	10	2		100
3	1		51	6	4					1	2						3							1		2	2		8	7	3	1		100
4	2	5	11	36	2	2	3		1	1	3						2	1	2	3						2	1		5	7	5			100
5			15	4	30	2			1	5	11						1							1		2	2		8	5	3			100
6		1	3	7	3	29	6		5	10	4									5				1		2	1		4	7	4	2		100
7		2	2	7		4	34	2	3	3	2	2							1	7				1		1	1		3	9	8	1		100
8	1	4	2	4		2	23	6	8	2	2	6	2						2	5			4			4	2	2	2	7	7			100
9			2	4		2	3		53	6	7	3	1							1									2	4	3			100
10			4	2	5	5	3		9	33	15	1							1	2						1			4	4	3	1		100
11			3	2	5	1			4	7	60																		3	3	2			100
12			1	2			1		3	1	1	45	7								4	2				2	1		1	7	11	1		100
13												3	61								24									1	1	3		100
14											2	6	7	25	2						31	12	1					2	2	3				100
15												3	6		50	10					14	3	1						1	2	2	4		100
16												1	2		9	76					2	2								1		2		100
17	8		13	5	1		1				1						22	1					1	2		3	2	2	6	20	5	1		100
18	10	5	5	11		1	2		1	1	1						3	11	3	2			2	1		2	2		5	14	11	1		100
19	2	6	4	9		1	4		1	2	2							2	13	3	1		2	2		3	2		4	10	19	3		100
20	2	4	4	10	1	5	12		2	3	2	1	1					1	3	17			1	1		2	1		4	8	9	1		100
21												2	25	2	1						60									1	1	2		100
22																					1	92						2						100
23																							50	9	9	5	12	3	6	2				100
24																							5	77	6	3	2		1	1			2	100
25																							9	11	62	1	10	1	2				2	100
26																							8	9	2	51	4	2	7	11	2			100
27																							9	3	7	2	61	8	7	1				100
28																							7	2	3	3	27	47	5	2				100
29			1																				3	1	1	2	5		80	2				100
30	2		2	1													1						3	3	1	8	2	1	5	51	10	3		100
31	1		2	2			1					2							1				1	2		2	1		2	17	53	4		100
32													1											2		1			1	5	4	78		100
33																								7	4								84	100

Values less than 1% are not shown in the table.

Table 13. Distribution of Trips by Zone for Heavy-Duty Trucks (% by Destination)

O \ D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	SUM
1	11					2	3										5	1		1			6	3		7	3	2	4	26	12	5		100
2	7	7	2	2		4	7	1				3	2			1	2	3	3	9	3	1	2	2		3	1		3	8	13	4		100
3	4	1	20	2	2	1					2						3			1			7	2		4	5	2	9	17	7	3		100
4	4	4	6	15		1	1					1					2	1	2	4	1		2	2		4	4	2	6	16	10	5		100
5	12		9		22	1	1				5						6						2	2		2	1	1	5	16	7	4		100
6	8	1				15	6					1	1			1	1	1	1	5	1		2	4		3	3	1	3	15	13	6		100
7	10	2				5	14					2	1			1	4	1	2	5	2		2	3		3	1		2	14	14	6		100
8	5	2		1	1	2	6	5		1		7	5						2	8	4	1	3	4	2	6	6	1	6	8	6	2		100
9	3	1	2			4	4		23	3	3	5	2				2	2	2	3			2	2		2			2	13	13	3		100
10	10	2	1		2	9	5	1	3	13	9	1						1	2	6				1			2		2	9	12	4		100
11	4		3		6	3				3	25	1					4		2	2			1	2		2	1		3	15	12	4		100
12	3											16	8		4	5	1			1	7	2	3	3		4	3	1	3	12	13	4		100
13	2											10	15		6	7				1	10	3	3	3		3	2	1	2	10	12	4		100
14	4											9	7	12							12	19		3		1				7	12	4		100
15	4											6	8		17	17				1	11		2	2		2	2	1	2	9	8	2		100
16	2											5	6		12	29					9	2	2	2		3	2		1	9	7	3		100
17	12	1	1				1										13	2	1	2			4	4		6	3	2	4	25	8	5		100
18	9	2					2										3	7	2	2			7	4		6	3	1	4	16	19	7		100
19	6	2	1			1	1					1					3	2	13	4			3	4		4	2		3	14	25	5	1	100
20	7	3	1	2		4	3				1	1	1				3	1	3	13			3	4		4	3	1	4	17	12	4	2	100
21	3						1					7	11		8	9					15	3	3	4		3	2	1	2	9	10	2		100
22	1											2	4	2							5	69		1					1	3	4	2		100
23	1																						38	8	2	9	11	5	5	10	3	3	1	100
24	1																						11	44	3	7	5	2	3	9	4	3	4	100
25																							17	14	30	3	14	4	3	4	2		6	100
26	3																1						11	6		29	5	3	6	20	5	4		100
27	1																						15	4	2	6	32	12	9	8	2	3		100
28																							8	2		5	14	51	4	7		3		100
29	2		1														1						8	3		6	9	4	45	10	3	3		100
30	5																2						5	4		7	3	3	4	41	11	6		100
31	4											2	1					1	2	1	1		3	3		4	2		3	18	36	10		100
32	1																						3	2		2	2	1	2	9	7	65		100
33																							5	15	3	3	3	1	2	4	2	2	54	100

Values less than 1% are not shown in the table.

Table 14. Share of Each Region from the Truck Traffic by Link

State Route No.	Link	Heavy-Duty Trucks		Medium-Duty Trucks	
		Riverside	SCAG	Riverside	SCAG
74	1	21%	93%	40%	99%
91	2	26%	94%	37%	98%
71	3	21%	84%	28%	93%
60	4	22%	93%	26%	95%
15	5	18%	90%	25%	92%
215	6	34%	83%	39%	94%
10	7	33%	74%	41%	85%
62	8	28%	93%	42%	98%
15	9	1%	1%	1%	1%
79	10	2%	6%	7%	15%
86	11	27%	80%	32%	85%
111	12	32%	83%	31%	88%
78	13	21%	43%	23%	47%
10	14	0%	0%	0%	0%
95	15	13%	32%	23%	40%
177	16	26%	53%	41%	61%
60	17	55%	78%	61%	88%
60	18	55%	80%	65%	91%
215	19	52%	83%	60%	92%
60	20	45%	93%	52%	96%
91	21	44%	91%	62%	98%
91	22	43%	91%	63%	97%
215	23	48%	73%	66%	86%
215	24	26%	36%	66%	79%
15	25	26%	37%	56%	74%
215	26	18%	26%	55%	61%
10	27	43%	72%	55%	84%
10	28	41%	62%	63%	80%
10	29	32%	41%	33%	39%

Figure 14. Zones Used in the O-D Analysis

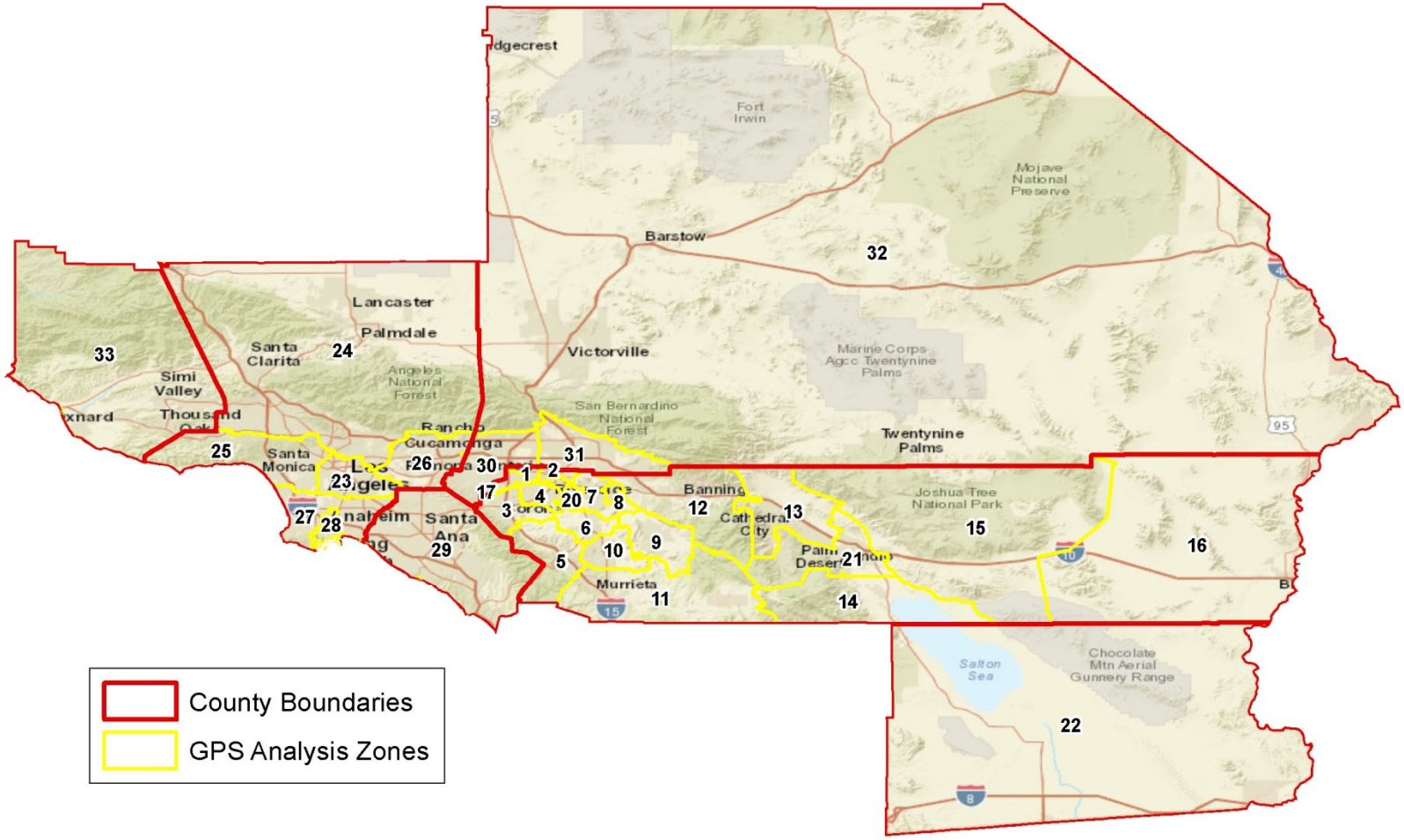
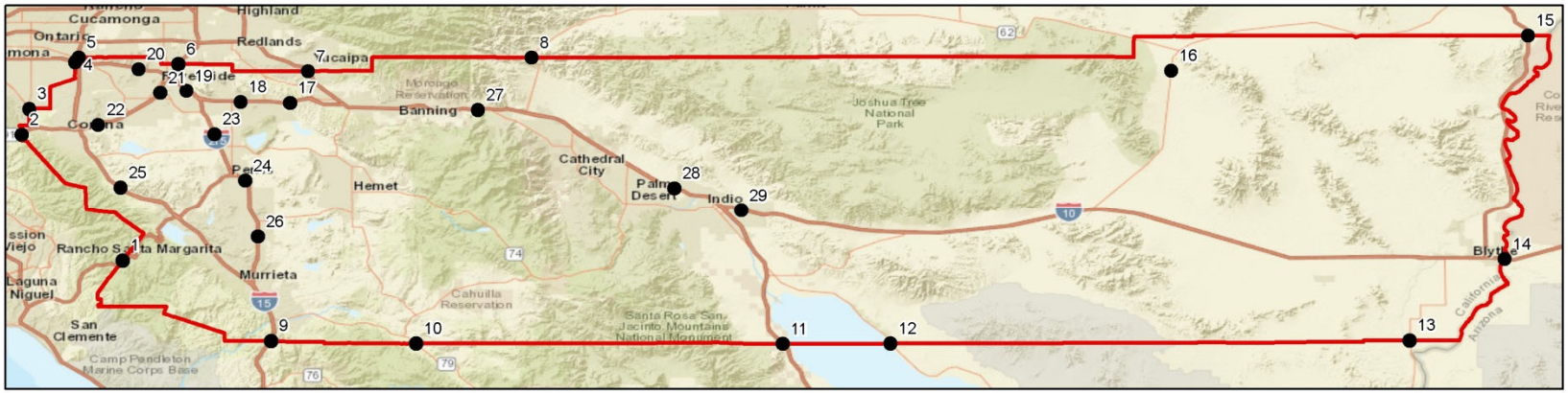


Figure 15. Selected Links for O-D Analysis



● Select Links

5. WAREHOUSE TRIP GENERATION METHODOLOGY

There are many possible approaches to estimate the number and length of trips generated by warehouse-related establishments in a given area. In this section, the most relevant and defensible of the currently available studies and methodologies are summarized. The recommendations follow the inventory of options.

5.1. CITY OF FONTANA TRUCK TRIP GENERATION STUDY

This study was completed in 2003 to evaluate the vehicle trip generation characteristics of several land use categories that typically generate significant volumes of truck traffic in the City of Fontana. This study identifies nine types of truck trip generating land uses, three of which are relevant to this study, namely: light warehouse, heavy warehouse, and industrial park. Below are the definitions for the three most relevant types of land use from the study, based on the Institute of Traffic Engineers (ITE) Trip Generation manual:

- Warehouse (ITE code 150) are primarily devoted to the storage materials; they may also include office and maintenance areas.
    - Light warehouses are 100,000 square feet gross floor area or less
    - Heavy warehouses are greater than 100,000 square feet gross floor area.
- Industrial park (ITE code 130) are areas containing a number of industrial or related facilities. They are characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use. Many industrial parks contained highly diversified facilities, some with a large number of small businesses and others with one or two dominant industries.

Table 15 summarizes trip generation rates presented in the Fontana study for the above uses. The distribution of truck mix for each warehouse type is also presented. Based on this study, light warehousing generates more truck trips relative to heavy warehousing per employee (for example: 0.327*13%=0.065 >0.309* 13%=0.04 during AM period) however the share of 3+ axles trucks are significantly higher for heavy warehousing

Table 15. Trip Generation Rates by Warehouse Type (Fontana Study)

Warehouse Type	Period	Avg. trip rate per employee	Avg. trip per building KSF	Employee per building KSF	Truck %	Large Truck Mix %		
						2 Axles	3 Axles	4+ Axles
Light Warehouse	Daily	3.713	1.659	0.45	23%*	24.7	20.6	54.6
	AM Site	0.327	0.146		20%			
	PM Site	0.282	0.126		26%			
Heavy Warehouse	Daily	4.657	3.547	0.76	11%	16.95	22.71	60.34
	AM Site	0.309	0.235		13%			
	PM Site	0.417	0.318		10%			
Industrial Park	Daily	2.485	1.236	0.5	26%*	7.9	7.1	85
	AM Site	0.265	0.132		20%			
	PM Site	0.382	0.19		32%			

Source: Fontana Truck Trip Generation Study

* Daily truck percentages are derived by averaging the AM and PM peak hour truck percentage.

5.2. HIGH-CUBE WAREHOUSE VEHICLE TRIP GENERATION ANALYSIS

The South Coast Air Quality Management District (SCAQMD) and the National Association of Industrial and Office Properties (NAIOP) engaged ITE to conduct a high-cube warehouse vehicle trip generation analysis. The findings of this report are reflected in the most recent ITE Trip Generation Manual (10th Edition) published in September 2017.

This study defines high-cube warehouse (HCW) as a:

> building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. A typical high-cube warehouse has a high level of on-site automation and logistics management. The automation and logistics enable highly-efficient processing of goods through the high-cube warehouse.

For the purpose of the analysis, high-cube warehouses are grouped into five types:

- Transload – usually pallet loads or larger handling products of manufacturers, wholesalers/distributors, or retailers with little or no storage durations
- Short-Term Storage – products held on-site for a short time

- Cold Storage – permanent cold storage in at least part of the building
- Fulfillment Center – storage and direct distribution of e-commerce product to end users
- Parcel Hub – Transload function for a parcel delivery company

This study describes the high-cube warehouse facilities in the context of existing ITE categories: "High-cube warehouses/distribution centers may be located in industrial parks or be free-standing. Intermodal truck terminal (Land Use 030), industrial park (Land Use 130), manufacturing (Land Use 140) and warehousing (Land Use 150) are related uses." A detailed description and comparison of each of the HCW categories regarding function, layout, building dimension, and level of automation is presented in the original report.

The vehicle trip generation for daily, AM and PM peak period and share of truck trip generation are estimated for the above categories of high-cube warehouse, and these data represent the most comprehensive effort to assess trip generation associated with high-cube warehouse to date thereby providing useful information to help validate other data sources. However, the study includes the following caveats related to the data and analyses contained within the report:

- Since the sample size for **fulfilment center** and parcel hub include only one establishment, the study recommends further data collection (a minimum of at least six sites) for these two categories to derive stable trip generation rates.

- The study produce statistically acceptable results based on limited data (nine sites) for **cold storage** category, which is generally higher than the rates developed previously based on an older data collection effort. The cold storage sites are classified subjectively based on the interpretation of the data submitter. It is recommended to confirm the applicability of the cold storage category based on the proportion of the HCW building space devoted to the cold storage. If some of the facilities are reclassified, the analysis needs to be re-evaluated. Further data collection might be needed, if a total of at least six sites are not identified under this category after reclassification.

- The study **combined the transload and short-term storage** categories for trip generation analysis. Although these categories are functionally different, their trip generation is not significantly different. Despite having relatively large sample size (95 sites) for this group, the study concluded that there is no meaningful statistic correlation between gross floor area and vehicle trip generation. It is recommended that an evaluation of further potential stratifications of the available data be undertaken and an appropriate set of data be selected for use as interim rates until further study is complete. For example, a set of 15 similar sites can be selected to

evaluate the consistency and correlation between the trip generation and one or more independent variables such as number of employment or floor area.

Recognizing the above-mentioned cautions about the results of this study, the summary of this study is presented in the following tables. **Table 16** shows the percentage of trucks from total vehicles by each high-cube warehouse category, and the findings reflect notable differences in the trip generation characteristics between certain use types.

At Short-Term Storage, Transload & Cold Storage facilities, trucks represent approximately 30% of daily vehicle traffic, with disproportionately less of that traffic coming during AM and PM peak hours. At Parcel Hubs, trucks represent almost half of the AM peak traffic, but only approximately 38% over the course of the day and just over 29% during the PM peak hour. Trucks account for only a small percentage of the total vehicle traffic at Fulfillment Centers.

Table 16 shows the daily weighted truck trip generation rates for each high-cube warehouse category. Per square foot, Parcel Hubs generate the highest number of truck trips, but the highest *proportion* of truck trips are generated by Cold Storage facilities. This is also the case when only 5+-axle trucks are considered.

Table 16. Trip Generation Rates by Warehouse Type (NAIOP Study)

Warehouse Type	Period	Avg trip rate per 1,000 GSF*	Truck %	Large Truck Mix %	
				2,3,4, Axles	5+ Axles
Short-Term Storage, Transload	Daily	1.432	32%	48.7	51.3
	AM Site	0.082	29%	37.5	62.5
	PM Site	0.108	21%	56.5	43.5
Cold Storage	Daily	2.115	40%	10.4	89.6
	AM Site	0.103	37%	28.9	71.1
	PM Site	0.129	33%	26.2	73.8
Fulfillment Center	Daily	8.178	9%	66.2	33.8
	AM Site	0.841	3%	60.9	39.1
	PM Site	1.979	2%	62.9	37.1
Parcel Hub	Daily	10.638	38%	75.5	24.5
	AM Site	0.851	50%	90.3	9.7
	PM Site	0.803	29%	96.2	3.8

Source: ACQMD, 2016, GSF: Gross Floor Area

5.3. INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) TRIP GENERATION MANUAL

The 9th Edition ITE Trip Generation Manual provides trip generation rates for warehousing (150), mini-warehousing (151), high-cube warehousing (152), and wholesale market (860). Each land use code provides one or more methods for estimating the trips generated by a land use. For example, warehousing (150) provides two options:

1. Employee-based estimation for weekday
2. Area-based estimation for weekday

The results of ITE's analysis for various uses in Riverside County are presented in **Table 17**. The ITE Trip Generation Manual provides the ability to estimate daily, AM peak, M peak, and weekend vehicle trips based on land use types, using independent variables of: floor area, acreage, or number of employees.

10th ITE Trip Generation Manual was released in September 2017. Since the new edition might not be adopted by RCTC yet, the trip generation rates from the 9th Edition is compared with respective rates from the 10th edition.

The information contained in the High-Cube Warehouse Vehicle Trip Generation Analysis and the ITE Trip Generation Manuals will be particularly useful in determining the proportional impact and fair share fee for differing types of high cube warehousing uses not readily distinguishable in the data derived from other aggregated sources, like Census and the SCAG demographic forecasts.

Table 17. ITE Daily Trip Generation Rates for Industrial Land Use (Site Generators)

Code	Land Use	Unit	Daily Rate (9th Ed.)	AM/PM Peak (9th Ed.)	Daily Rate (10th Ed.)	AM/PM Peak (10th Ed.)	Truck % (9th Ed.)
110	General Light Industrial	Employees	3.02	0.48 / 0.51	3.05	0.67 / 0.68	N/A
		KSF Gross Floor Area	6.97	1.01 / 1.08	4.96	0.92 / 0.83	
120	General Heavy Industrial	Employees	0.82	0.40 / 0.40			N/A
		KSF Gross Floor Area	1.5	*PM:* 0.68			
130	Industrial Park	Employees	3.34	0.43 / 0.45	2.91	0.42 / 0.42	13%
		KSF Gross Floor Area	6.83	0.80 / 0.84	3.37	0.41 / 0.40	
140	Manufacturing	Employees	2.13	0.39 / 0.40	2.47	0.43 / 0.45	N/A
		KSF Gross Floor Area	3.82	0.79 / 0.75	3.93	0.81 / 0.79	
150	Warehousing	Employees	3.89	0.55 / 0.58	5.05	0.68 / 0.68	20%
		KSF Gross Floor Area	3.56	0.42 / 0.45	1.74	0.22 / 0.24	
151	Mini-Warehouse	KSF Gross Floor Area	2.5	0.28 / 0.29	1.51	0.20 / 0.20	2%-15%
		KSF Net Rentable Area	1.65	0.18 / 0.22	1.65	0.18 / 0.22	
		Storage Units	0.25	0.03 / 0.03	0.18*	0.23* / 0.24*	
		Occupied storage units	0.2	0.02 / 0.02	0.19*	0.02* / 0.02*	
152**	High-Cube Warehouse	KSF Gross Floor Area	1.68	0.14 / 0.16			38%
154	High-Cube Transload & Short-Term Storage Warehouse	KSF Gross Floor Area	-	-	1.40	0.12 / 0.16	N/A
155	High-Cube Fulfillment Center Warehouse	KSF Gross Floor Area	-	-	8.18	0.22 / 0.27	N/A
156	High-Cube Parcel Hub Warehouse	KSF Gross Floor Area	-	-	7.75	0.88 / 0.71	N/A
157	High-Cube Cold Storage Warehouse	KSF Gross Floor Area	-	-	2.12	N/A	N/A

Source: ITE Trip Generation, 9th Edition

** Figures given by 100s of units; divided by 100 for consistency with 9th Edition figures.*

*** In the 10th Edition, Land Use Code 152 is replaced by Codes 154-157, which provide additional specificity.*

5.4. SCAG HEAVY-DUTY TRUCK TRIP GENERATION (2016 RTP)

SCAG's heavy-duty truck (HDT) model is a sub-model within the SCAG 2016 Regional Transportation Plan (RTP) model. The model classifies trucks into three HDT weight classes by gross vehicle weight (GVW): light-heavy (8,500 to 14,000 lbs. GVW); medium-heavy (14,001 to 33,000 lbs. GVW); and heavy-heavy (>33,000 lbs. GVW).

The SCAG 2016 RTP HDT Model applies freight-related socioeconomic data to estimate trip generation using three submodules – external (to the region) trip generation, internal (to the region) trip generation, and special generator trip generation.

- **The external trip generation module** estimates the internal-external (IE), external-internal (EI), and external-external (EE) truck trip table for all interregional truck trips based on commodity flow patterns that link Southern California with the rest of the country. The EI/IE HDT trips are generated using a combination of commodity flow data at the county level and 2-digit NAICS employment data at a county level. External cordons are used to forecast future year external HDT trips from the base year trip flow matrices. This module uses a TRANSEARCH database obtained from IHS/Global Insight. These data are provided as annual flows in tons and are converted to daily weekday flow using an annulation factor of 306 (6 days per week for 51 weeks) for all commodities. The flows are converted from tons to trucks using the specified payload factors varying by commodity types. These payload factors were developed using data from the 2002 Vehicle Inventory and Use Survey (VIUS).

- **The internal trip generation module** is based on trip rates (number of trips per employee or household) for ten different land use/industry sectors at the trip ends. These land use/industry sectors are households, agriculture/mining/construction, retail, government, manufacturing, transportation/utility, general warehousing, high cube warehousing, wholesale, and other (service). The socioeconomic data used by the internal HDT model is consistent with those data used by broader regional travel demand model. The trip rates for every land use were updated based on recent data collection efforts – establishment surveys and third-party truck GPS data. **Table 15** shows the trip generation rates for truck trips internal to the region. All trip rates are per employee, except for the warehouse category, for which trip rates are presented both per employee and KSF of area

- **Special generators** include the ports and intermodal facilities. Not only major-purpose trips are included, but also secondary trips like cargo trips from intermediate handling locations to final destinations. Additionally, there are empty movements of trucks

associated with port truck trips, for purposes of truck repositioning. Ports are modeled based on detailed port area zone system and specialized trip generation rates for autos and trucks by type (bobtail, chassis, and containers). Intermodal truck trips are HDT movements generated at the six regional intermodal facilities in the SCAG region.

Table 18. Internal Truck Trip Generation Coefficient for Various Land Use Categories

Category	Truck Type			All Trucks
	Light HDT	Medium HDT	Heavy HDT	
Households	0.0147	0.0046	0.0072	0.0265
Agriculture/Mining/Construction	0.0804	0.0778	0.0715	0.2297
Retail	0.0663	0.0662	0.0703	0.2028
Government	0.0296	0.0150	0.0148	0.0594
Manufacturing	0.0613	0.0655	0.0924	0.2192
Transportation/Utility	0.1579	0.1815	0.3199	0.6593
Wholesale	0.0916	0.0968	0.1316	0.32
Other (Service)	0.0095	0.0111	0.0151	0.0357
General Warehouse per Employee	0.1610	0.1850	0.3720	0.718
General Warehouse per KSF of Area	0.2819	0.2434	0.5421	1.0674
High Cube Warehouse per Employee	0.184	0.211	0.372	0.767
High Cube Warehouse per KSF of Area	0.0948	0.1272	0.3380	0.56

Based on information in the SCAG HDT model, the ratio of employee per KSF for general warehouse and is presented in **Table 19.**

Table 19. Employee per KSF Ratio in SCAG HDT model

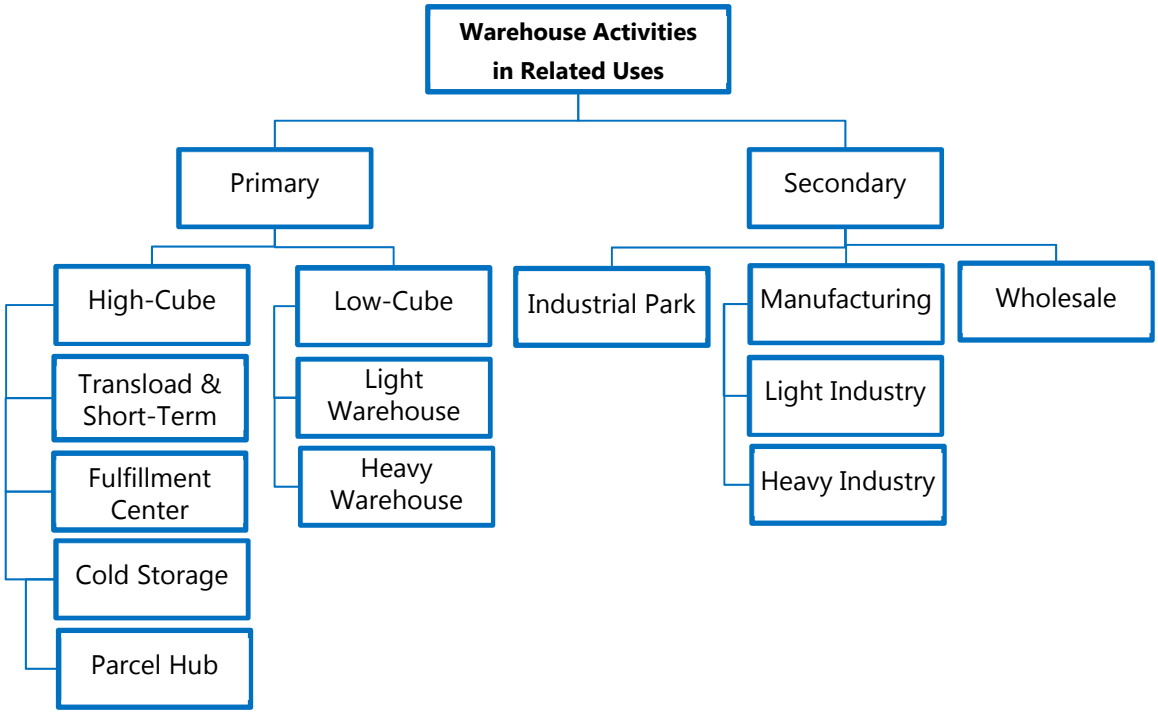
Employee per KSF Ratio	Light HDT Trip Rate	Medium HDT Trip Rate	Heavy HDT Trip Rate	Total Trucks
General Warehouse	1.75	1.32	1.46	4.52
High Cube Warehouse	1.94	1.66	1.10	4.70

The employee ratio in SCAG model seems very high compared to the ITE rates and the Fontana study. This issue was discussed with the SCAG modeling group who advised to only use the warehouse employee information from SCAG model since the 2016 RTP scenarios are based on employee variable and the warehouse square feet variable was not considered ready for use. For this reason, where necessary, employee per KSF conversion rates will be derived from the ITE Trip Generation Manual.

5.5. SUMMARY OF METHODOLOGICAL APPROACHES

Various approaches were reviewed in defining: 1) existing warehouse uses, 2) truck trip generation related to warehouse activities and 3) anticipated future warehouse growth in Riverside County. Although the equations used to estimate truck trips may differ significantly, a more important difference is the source of truck trips and the land use category that relates to each model. Unfortunately, these studies did not adopt a common definition of uses and with the rapid growth in automation in modern warehouses, the employee density may be declining while the related trucking activities may increase. However, in the absence of any other available information, the number of employee is still the primary variable to estimate trucking activities related to warehouse uses. For the purpose of this study effort, it is important to maintain the consistency between identified warehouse-related uses, their trip generation, and the future forecast of each use. **Figure 16** shows the taxonomy of various uses with major warehouse activities.

Figure 16. Taxonomy of Uses with Major Warehouse Activities



The studies that provide methods to estimate trip generation rates for various warehouse activities may aggregate some of these uses due to lack of information. Some methods are more conservative, choosing to include only heavy truck trip generators. Other methods take a more holistic approach, casting a broader net of trip types and weighting them for estimated

volume. No approach is inherently more correct than any other, but one may be more appropriate than others for a given purpose.

A desire for precision would suggest dis-aggregating land use types to the greatest degree possible. For example, distinguishing between high-cube and low-cube. However, this only useful if there is a valid forecast in the growth of these uses at the dis-aggregated level. Furthermore, in the context of impact fee programs, the concept of "rough proportionality" has been determined to be adequate as the basis for establishing a rational nexus and associated fair share fee. For these reasons, the use of more reliable, aggregated data is considered preferable for this study effort, with cross-reference to supplemental data sources to address specific study needs.

Table 20 is a summary of the trip generation data assessed in this report. These data represent the "universe" for trip generation for the purposes of this study effort, and elaborate the related land uses, available of data and applicability for study use.

Table 20. Summary of Uses Related to Warehouse Activities and Trip Generation Methodologies

Land use Category with Significant Warehouse Activity		Trip Generation Reference				SCAG Future Forecast (2040)
		Fontana Study	SCAG RTP (2012 Base Year)	SCAQMD	ITE	
Primary Warehouse Activity	High-cube transload / short-term warehouse			✓	✓	
	High-cube fulfillment center			✓	✓	✓
	High-cube cold storage			✓	✓	
	High-cube parcel hub			✓	✓	
	Light warehouse *	✓	✓		✓	✓
	Heavy warehouse **	✓	✓			
Secondary Warehouse Activity	Industrial park*	✓			✓	
	Light industry (manufacturing)	✓	✓		✓	✓
	Heavy industry (manufacturing)	✓				
	Wholesale		✓		✓	✓

✓ = available but not suitable for primary study use
✓ = available and suitable for supplemental reference
✓ = available and preferred for primary study use
*: Light warehouse also includes "low-cube" as defined by SCAG but not the Fontana Study
**: Heavy warehouse includes "high-cube" as defined by SCAG but not the Fontana Study

Table 21 summarize the trip generation rates presented in this study. It is important to use this table properly and understand the assumptions related to each reference, since there are fundamental differences.

Table 21. Summary Trip Generation Rates Related to Warehouse Activities

Land use Category with / Unit		Trip Generation Reference						
		Fontana Study		SCAG RTP [1]			SCAQMD	ITE (10TH ED)
		Per Employee	Per 1,000 GSF	Per Employee	Per 1000 SF	Per 1,000 GSF [2] (adjusted)	Per 1,000 GSF	Per 1,000 GSF*
Primary Warehouse Activity	High-cube transload /short-term warehouse	0.951	0.725	0.767	0.560	0.384	0.454	0.444
	High-cube fulfillment center						0.717	0.717
	High-cube cold storage						0.836	0.75
	High-cube parcel hub						4.007	2.918
	Light/General warehouse	0.732	0.327	0.673	1.065	0.897	-	0.348
Secondary Warehouse Activity	Industrial park	1.173	0.583	-	-	-	-	0.438
	Light industry/ manufacturing	1.722	2.513	0.219	-	-	-	0.992
	Heavy industry	1.469	2.926		-	-	-	-
	Wholesale	-	-	0.32	-	-	-	0.302

[1] Source: SCAG Internal HDT Truck Model Development Report, 2012

[2] Assuming 2000 square feet per employee in High cube warehouse and 750 square feet per employee in general warehouse

The SCAG HDT model is the only source that provides future forecast for warehousing uses. It provides aggregate level data for high-cube and low-cube warehouse uses, as well as data for secondary manufacturing and wholesale activities, and for consistency, it is the primary recommended data source for this study. Furthermore, the SCAG 2016 RTP model applies trip rates differentiated between general and high-cube warehouse and forecast truck trips from 10 land use types including general and high-cube warehouses. The rates presented in the Fontana study and most recent ITE manual (which incorporates findings from the SCAQMD study) provide supplemental information that can be used to modify the trip rates in the SCAG HDT model to provide further disaggregation of results, as needed.

6. DIAGNOSTIC TESTS OF SCAG MODEL

Best practice for traffic forecasting includes, among other things, checking the traffic model to make sure that it provides reasonable forecasts for the specific area(s) under study. The forecasting model that was selected for this study is the model developed by SCAG for the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)[3]. This model was selected because it incorporates the current adopted transportation and land use plan (the 2016 RTP/SCS)[4] and because it covers a sufficiently large geographic area to capture both ends of truck trips to and from logistics warehouses in Riverside County. The SCAG model was validated on a region-wide basis prior to its use for the RTP/SCS[5]. The diagnostic checks conducted for the current study pertained to the model's ability to accurate represent truck trips on freeways in Riverside County.

This first test was to see whether the model replicated the distribution of truck trips based on origin and destinations within the county and in neighboring counties. Utilizing the O-D data described previously, the model results were compared. **Table 22** shows that the model replicates the distribution of truck trips derived from the O-D data very closely.

Table 22: Check of County-Level Truck Origin-Destination Distribution

Trip Type	O-D Survey	2016 SCAG Model
Heavy Trucks		
Internal to Riverside County	47%	46%
One trip-end in Riverside County	53%	54%
Medium Trucks		
Internal to Riverside County	78%	80%
One trip-end in Riverside County	22%	20%

[3] SCAG Standard Disclaimer: "The following modeling analysis was performed by WSP based upon modeling information originally developed by the Southern California Association of Governments (SCAG). SCAG is not responsible for how the Model is applied or for any changes to the model scripts, model parameters, or model input data. The resulting modeling data does not necessarily reflect the official views or policies of SCAG. SCAG shall not be held responsible for the modeling results and the content of the documentation."

[4] Note that the current versions of the two other candidate models, namely RivTAM and the CVAG model, are both based on the (now superseded) 2012 RTP/SCS.

[5] See: *SCAG Regional Travel Demand Model and 2012 Model Validation*, SCAG, March 2016

The next check was to determine how well the model represented traffic flows on Riverside County freeways in the AM and PM peak hours. **Figure 17** and **Figure 18 c**ompare the model's 2016 traffic volumes to counts of actual traffic taken from the Caltrans' Performance Measurement System (PeMS). The figures also show a shaded area that represents the allowable deviation based on Caltrans guidelines[6]. A model is considered generally valid if 75% of the points fall within the allowable deviation. Based on this criterion, the SCAG model is generally valid for Riverside Counties in both the AM peak period (77% within allowable deviation) and the PM peak hour (81%). The figures also show that the model tends to slightly over-estimate traffic, which is a tendency that can be corrected by factoring down the forecasts during post-processing. However, the results indicate a particularly acute overestimation for the traffic on SR-91. Subsequent investigation has determined anomalies in the PeMS data for these locations causing the appearance in the charts that the model is overestimating when in reality, the results are more likely in the same realm as other sampled locations.

The next check was to see how well the SCAG model forecasts truck traffic on freeways in Riverside County, which is particularly relevant to determining the effectiveness of the model for use in this study effort. This test was performed by dividing the Riverside County freeway network into sections, as illustrated in **Figure 19**, and comparing the model's 2016 truck volumes on each section with Caltrans' truck volume data. **Table 23** shows that the model generally does a good job of forecasting truck traffic on the study freeways. The only notable exceptions are for the sections of SR-60/I-215 and SR-91 within the City of Riverside, where the model is over-forecasting truck trips by about a factor of 3. Since the model matches the counts with regards to the percentage of trucks (see the right-most column in **Table 23**, the over-estimate of trucks in the vicinity of Riverside appears to be mainly due to the general over-estimation of trucks in that area, and is consistent with the over estimation of traffic in this area as described previously and illustrated in **Figure 17** and **Figure 18**.

Correcting the general over-forecast of traffic in the vicinity of the City of Riverside central business district should reduce the tendency to over-forecast trucks on those sections of the freeway system. With resolution of this apparent anomaly in the SCAG model, the overall findings of the diagnostic tests of the SCAG model indicate that, with some minor post-processing, it can provide very reasonable forecasts of traffic, and specifically truck traffic, on freeways in Riverside County, and therefore is suitable for use to support the subsequent study evaluation efforts.

[6] *Travel Forecasting Guidelines,* Caltrans, November 1992

Figure 17: Comparison of Model to Actual Traffic in the AM Peak Hour

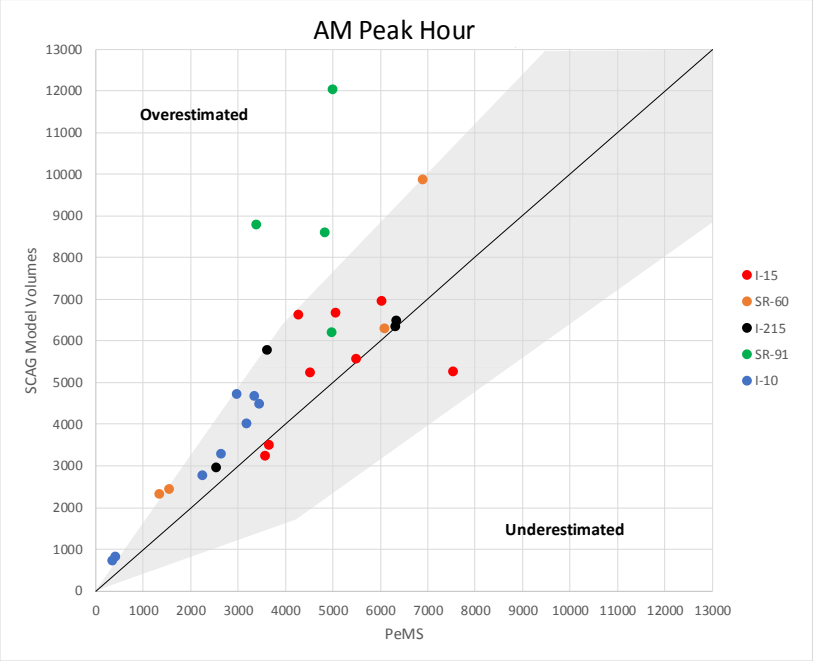


Figure 18: Comparison of Model to Actual Traffic in the PM Peak Hour

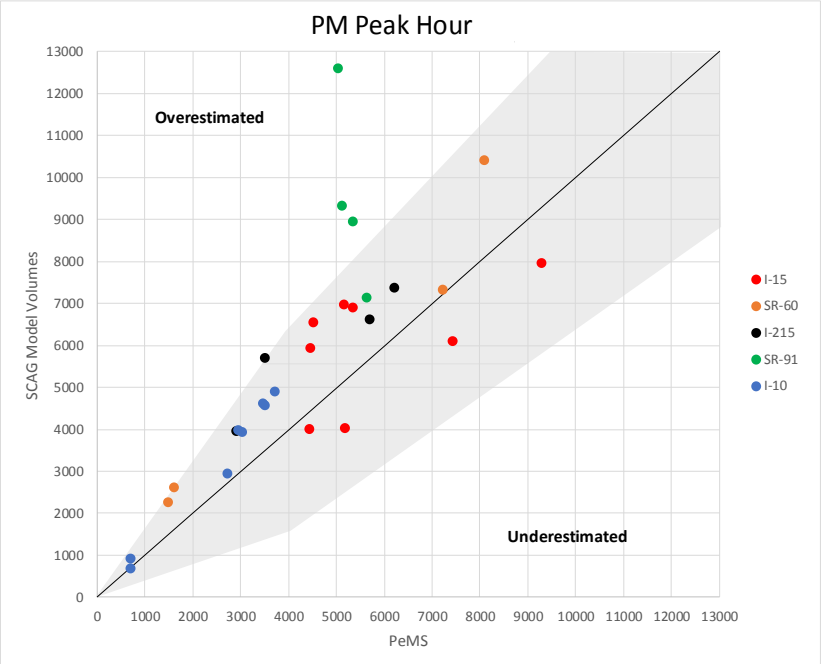


Figure 19: Freeway Sections Used to Check Truck Forecasts

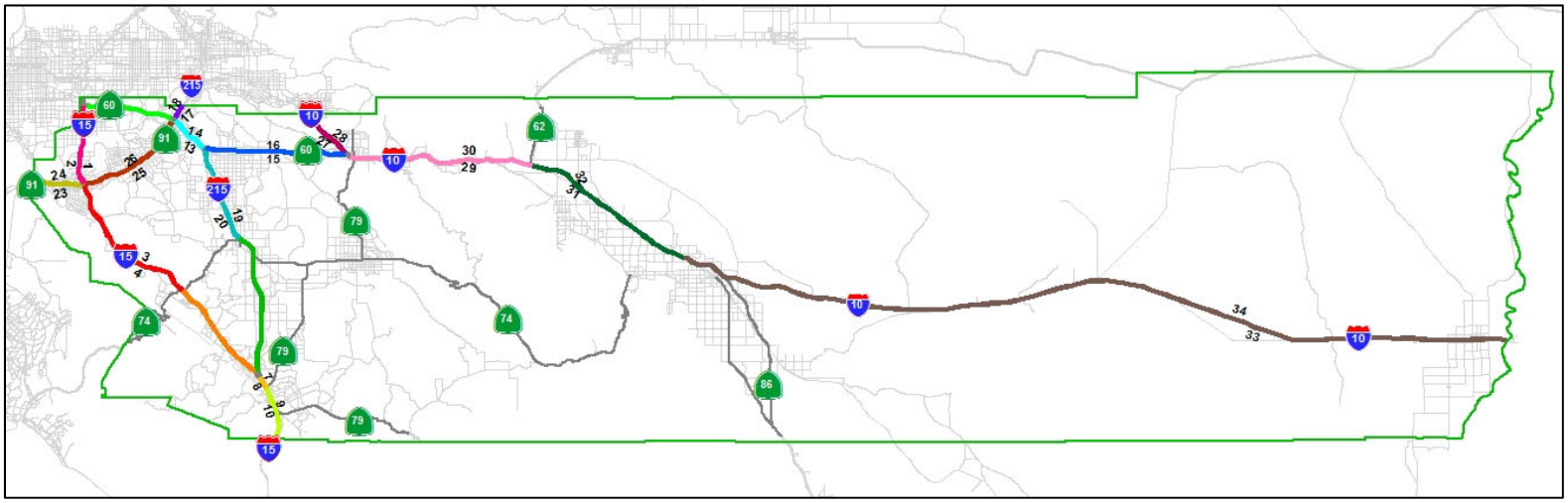


Table 23: Comparison of Model's Truck Volumes to Counts of Actual Truck Traffic

ID	Route	SCAG 2016 Model Daily Volumes			AADT 2015 (Census)			Counts		Difference in Heavy Truck Percentage
		Total Vehicles	Heavy Trucks	Heavy Trucks %	AADT	4+ Axle AADT	Heavy Truck %	Difference Heavy Trucks	Ratio	
1&2	I-15	185,621	9,165	4.9%	151,000	9,082	6.0%	83	1.01	-1.1%
3&4	I-15	139,861	10,033	7.2%	117,000	5,762	4.9%	4,271	1.74	2.2%
7&8	I-15	197,698	9,092	4.6%	190,000	5,857	3.1%	3,235	1.55	1.5%
9&10	I-15	153,487	6,932	4.5%	159,000	6,226	3.9%	706	1.11	0.6%
13&14	SR-60/I-215	210,042	19,361	9.2%	170,000	5,367	3.2%	13,994	3.61	6.1%
15&16	SR 60	66,192	10,448	15.8%	61,000	6,929	11.4%	3,519	1.51	4.4%
17&18	I-215	189,324	7,187	3.8%	153,000	9,747	6.4%	-2,560	0.74	-2.6%
19&20	I-215	121,827	5,590	4.6%	120,000	6,120	5.1%	-530	0.91	-0.5%
23&24	SR-91	276,622	23,815	8.6%	247,000	8,040	3.3%	15,775	2.96	5.4%
25&26	SR-91	191,400	13,614	7.1%	209,000	8,036	3.8%	5,578	1.69	3.3%
27&28	I-10	109,361	9,708	8.9%	93,000	7,821	8.4%	1,887	1.24	0.5%
29&30	I-10	131,961	18,801	14.2%	118,000	16,844	14.3%	1,957	1.12	0.0%
31&32	I-10	96,719	16,418	17.0%	84,000	15,939	19.0%	479	1.03	-2.0%
33&34	I-10	30,654	10,415	34.0%	23,700	7,424	31.3%	2,991	1.40	2.6%

7. DATA ADEQUACY FINDINGS AND RECOMMENDATIONS

The objective of this technical memorandum is to present an overview of warehousing and logistics related development activity in Riverside County, and the availability of appropriate data to assess the impact of this development over time. This document is also intended to provide transparency in the study process by presenting background information regarding the range of data sources available to support the evaluation to be conducted in subsequent tasks.

The review of available data has revealed that Riverside County can expect to see continued development of warehousing and logistics uses in the future, and that growth in warehousing and logistics uses, although focused in specific zones, will occur in cities across Western Riverside County and the Coachella Valley, thereby likely generating impacts across the freeway system. Growth is expected to continue for both low-cube and high-cube warehousing and logistics uses supporting consideration of the impacts associated with the full range of associated development as part of this study, although it is anticipated that the rate of this type of development will decline over time as land availability is reduced for these uses.

SCAG demographic forecasts are provided based on number of employees, although impact fees are most readily applied based on total building (or site) area. The SCAG forecasts follow the NAICS structure which includes several categories associated with warehousing and logistics uses. The NAICS breakdown of employment categories utilized by SCAG supports extraction of warehousing and logistics employment from other uses as the basis to estimate growth in warehousing and logistics use over time. And while the SCAG Warehouse Study information that is expected to incorporate information relating to the growth in building area of warehousing is not considered suitable for use at this time, the availability of various employee to building area ratios will support conversion of the SCAG growth forecasts into growth in building area for the purposes of determining a fee. Furthermore, the availability of trip generation rates for a range of differing warehouse and logistics use types (based on employees and building area) will support the ability to determine a fair share fee amount to reflect the differing levels of impact associated with a variety of different types of warehousing and logistics uses.

A comparison of model outputs, O-D study results and actual traffic counts indicates that the SCAG model does a good job of replicating existing truck travel patterns and traffic conditions on the Riverside County freeway system. Furthermore, anomalies in the model results appear to be explicable and able to be resolved with limited post processing of results. This finding

supports the use of the SCAG model as the primary evaluation tool for study evaluation, with supporting information able to be derived from a variety of other sources for validation and post processing of results to accomplish study needs.

The assessment associated with this study task has determined that a range of adequate, suitable data is available to support the determination of impacts associated with warehousing and logistics uses in Riverside County, and more specifically, the cost associated with mitigating the cumulative regional impacts of new warehousing and logistics development on the freeway system in Riverside County. The specific methodology for applying the various data sources to the study evaluation will be described in subsequent Technical Memoranda. In addition, these subsequent documents will present the study findings and results providing the framework for consideration to establish a regional logistics impact fee program.

RCTC TRUCK STUDY AND REGIONAL LOGISTICS MITIGATION FEE

Supplemental Technical Memorandum 1: Existing and Future Conditions

Model Validation, Calibration and Forecasts

Prepared for :

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

Prepared by:

WSP

In partnership with

FEHR & PEERS

Revised: March 2018

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1. INTRODUCTION

This supplemental technical memorandum documents the modeling steps used to prepare the forecasts of freeway impacts arising from new logistics development in Riverside County, and presents the results of the model runs.

The first section of this supplemental technical memorandum describes how the model was reviewed and calibrated to correct the problems reported in the earlier Technical Memorandum 1[1]. The second section describes the methodology used to forecast the growth in logistics in Riverside County. This is followed by a section describing the results of the model runs used to identify the impacts of truck traffic arising from new logistics warehouses. The final section of this memo discusses next steps in the analysis process.

2. ADJUSTING THE SCAG MODEL

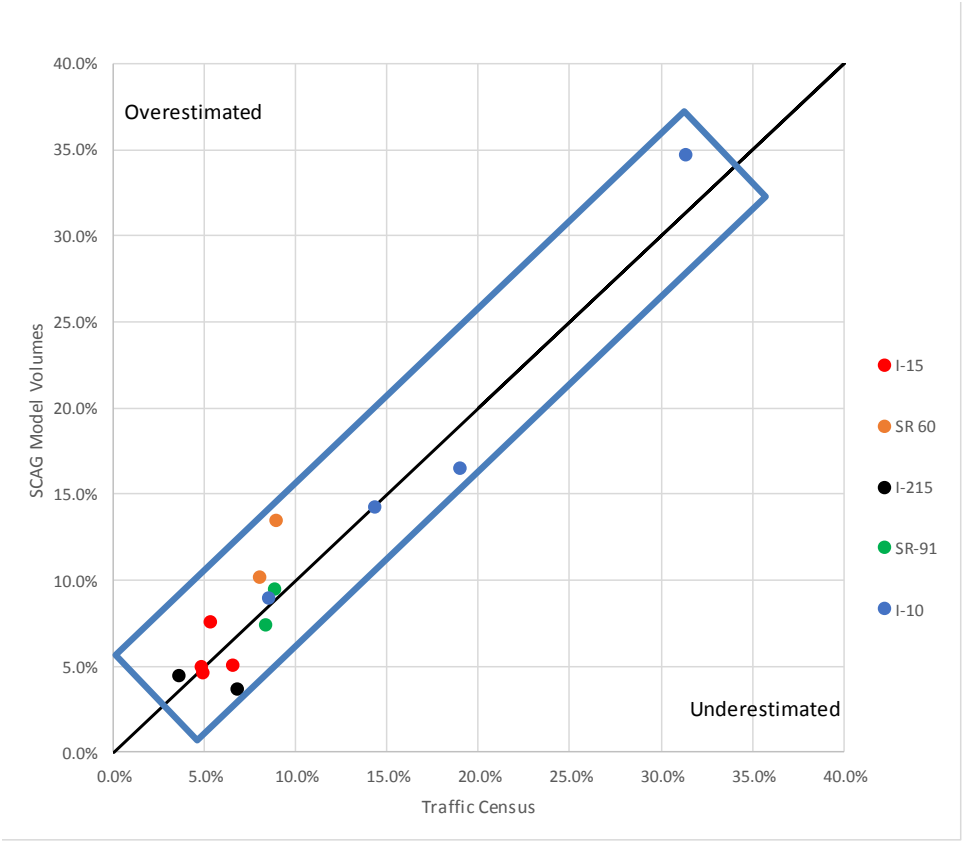
Best industry practice requires that a regional travel demand model be adjusted and re-validated prior to using it for sub-regional studies:

> *"Agencies that use MPO models for purposes other than regional planning should ensure that the model provides the appropriate scale and sensitivity for applications at a sub-regional level such as corridor, sub-area, or local planning studies. Below the regional level, model refinements are likely necessary to ensure the model meets the validation targets established in these guidelines and is appropriately sensitive to smaller scale changes associated with sub-regional studies."*
> *Source: California Regional Transportation Plan Guidelines, California Transportation Commission, 2010.*

Technical Memorandum 1 described a series of diagnostic tests that were performed on the SCAG model to test its validity for use to conduct technical evaluation as part of the RCTC Truck Study and Regional Logistics Mitigation Fee. The tests showed that the model represented truck traffic on Riverside County freeways well. For example, Exhibit 1 compares the percentage of trucks in the traffic on various freeways in the model versus the percentage in the Caltrans performance measurement system (PeMS) data, and Exhibit 2 shows a similar comparison for the truck volumes. The exhibits show a close correlation between the model and actual values, and no systemic tendency towards over- or under-estimating the truck percentage.

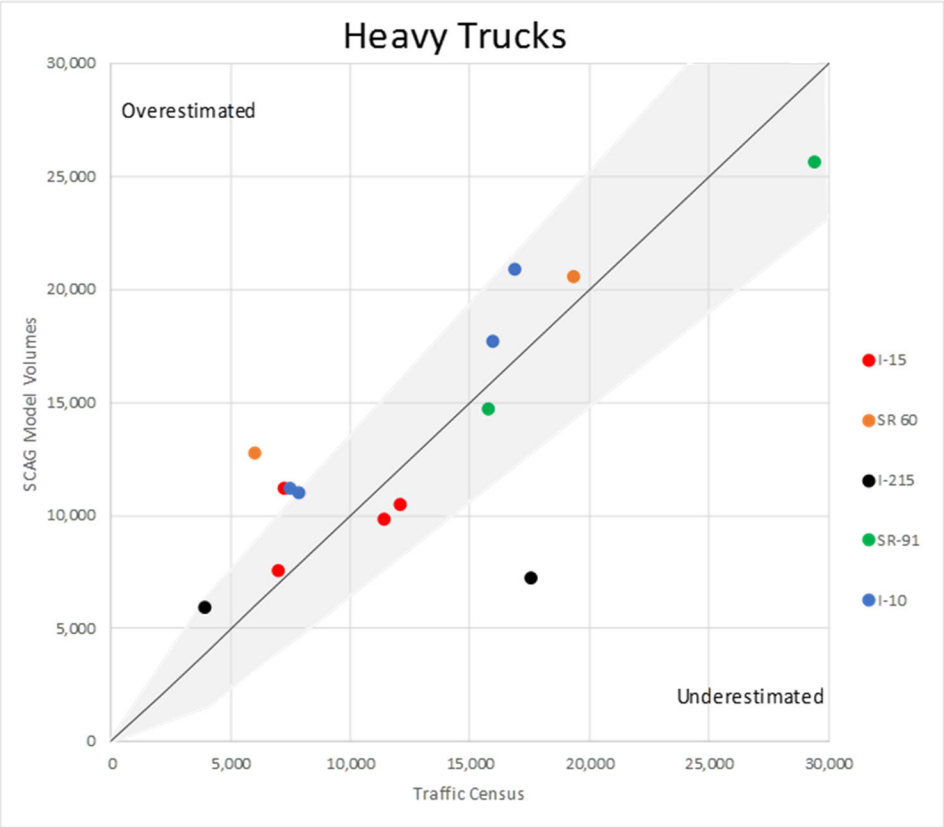
[1] See the discussion of diagnostic tests of the SCAG model in *Technical Memorandum 1: Existing and Future Conditions*, WSP, October 2017

Exhibit 1: Comparison of Modeled to Actual Truck Percentages on Riverside County Freeways



Data sources: SCAG 2016 RTP Travel Demand Model; Caltrans Freeway Performance Monitoring System (PeMS)

Exhibit 2: Comparison of Modeled to Actual Truck Volumes on Riverside County Freeways

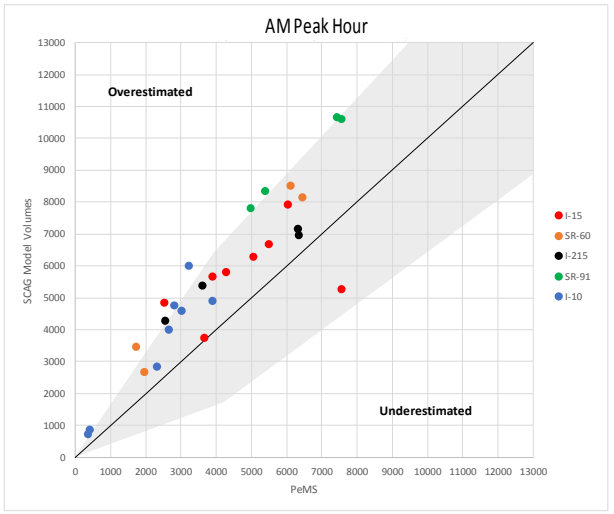


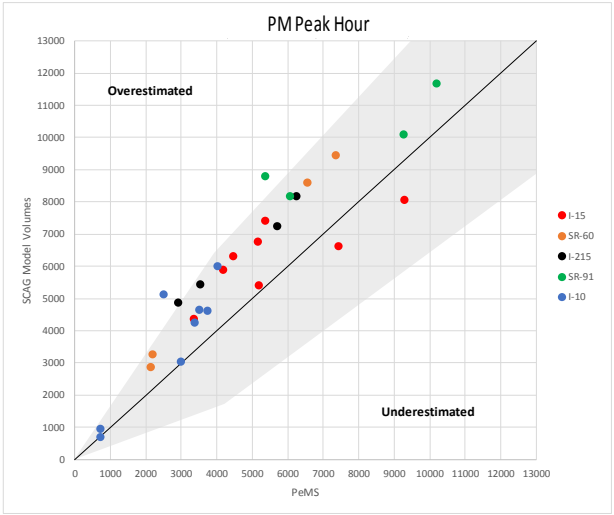
Data sources: SCAG 2016 RTP Travel Demand Model; Caltrans Freeway Performance Monitoring System (PeMS)

However, the tests also revealed that there was an issue warranting adjustment. Exhibit 3 shows link flows from a SCAG model run for 2016 compared to PeMS data for the same year. This data was evaluated two ways, namely:

- The shaded area in Exhibit 3 shows the allowable deviation based on Caltrans guidelines. The allowable deviation reflects the fact that the actual traffic volumes on roads fluctuate from day to day, so the "normal" traffic volume that a model should replicate is a range rather than a fixed value. A model is considered generally valid if 75% of the points fall within the allowable deviation. In this case 77% of the sites are within the allowable range in the AM peak hour and 81% in the PM peak hour, so the model passes this test of validity.
- The second test was to see whether there a general tendency for the model to over-estimate or under-estimate freeway volumes on freeways in Riverside County. The exhibit shows that the model failed this test demonstrating a tendency to over-estimate freeway traffic, as illustrated by the fact the points nearly all fall above the equilibrium line which crosses diagonally through the middle of the exhibits, with an average over-estimation of 26% in the AM peak hour and 20% in the PM peak hour.

Exhibit 3: AM and PM Peak Hour Comparison of Traffic Counts and SCAG Model Volumes





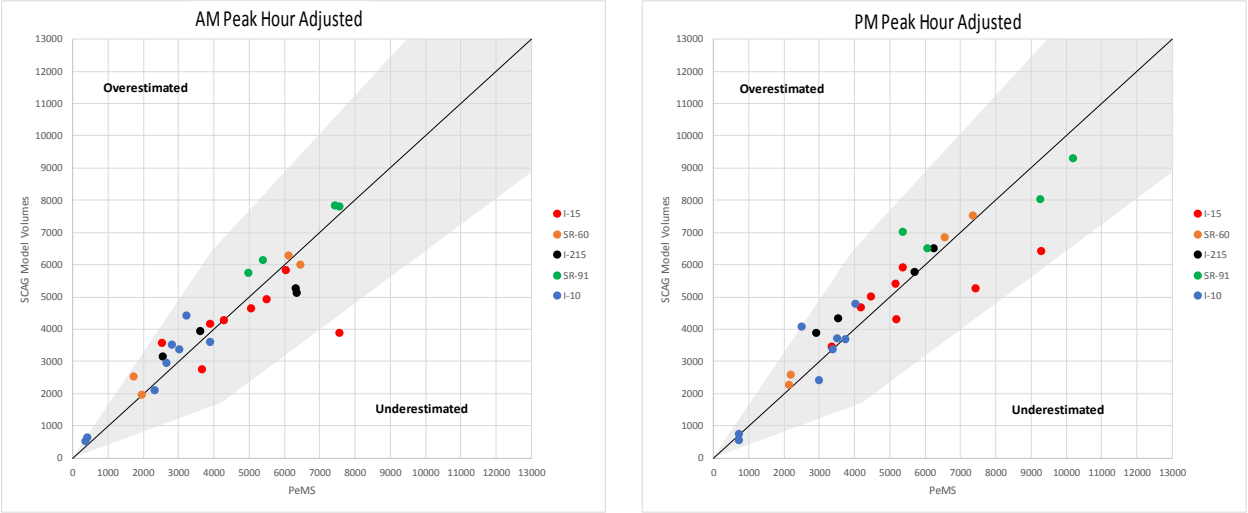
Data sources: SCAG 2016 RTP Travel Demand Model; Caltrans Freeway Performance Monitoring System (PeMS)

Both the AM and PM peak hour overestimates can be reduced by factoring down model volumes in a post-model adjustment. Note that only car volumes were factored down, not truck volumes, because Exhibit 2 showed that the truck volumes were not in error.

Exhibit 4 shows the results after applying the factors of 0.74 and 0.80 in the AM peak hour and PM peak hour. The accuracy of the forecasts was much improved by these adjustments, with the R-squared[2] value increasing from 0.15 to 0.79 in the AM peak hour and from 0.53 to 0.84 in the PM peak hour. The factoring down of the model forecasts to correct for the overestimation of car volumes by the model is important in the context of the study to ensure both existing and future deficiencies on the freeway network are not being overstated.

[2] R-squared is a measure of how well the forecast accounts for variations in the traffic counts. R-squared values can range from 0.00, indicating no relationship between the model values and the counts, to 1.00, indicating that the model accounts fully for variation in the count data set.

Exhibit 4: AM and PM Peak Hour Comparison of Traffic Counts and SCAG Model Adjusted Volumes



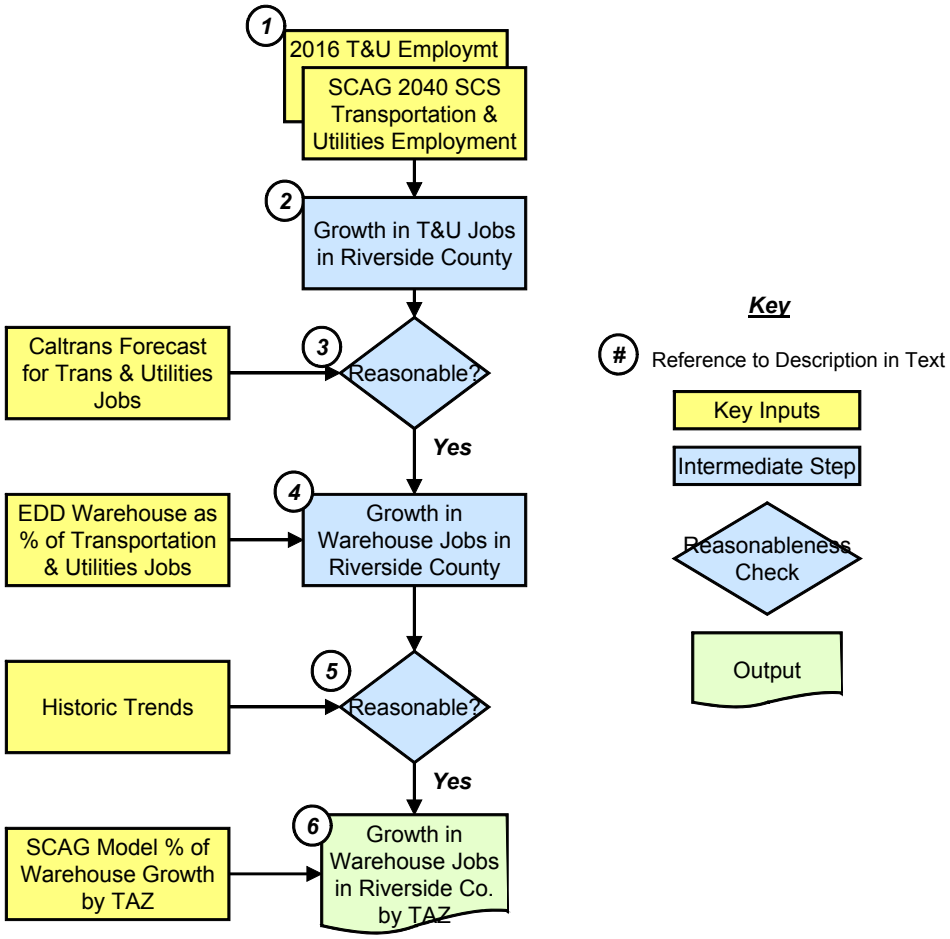
Data sources: SCAG 2016 RTP Travel Demand Model (adjusted volumes); Caltrans Freeway Performance Monitoring System (PeMS)

3. FORECASTING THE GROWTH IN LOGISTICS IN RIVERSIDE COUNTY

The steps used to forecast for the growth in logistics in Riverside County are illustrated in Exhibit 5. The steps in the process are described in the following section. The data sources recommended as the basis to accomplish these steps was previously described in Technical Memorandum 1.

1. The starting point for forecasting logistics growth in Riverside County was the adopted SCAG 2016 RTP/SCS. The SCS included a number of employment categories, of which the most relevant for this study is Transportation and Warehousing (corresponding to NAICS code 48-49). Warehousing employment (NAICS subcategory code 493) is included within this broad category, along with such things as air and rail transportation, trucking, transit, pipeline, and postal service jobs. The SCS data was obtained from SCAG in the form of socio-economic data (SED) inputs for the latest SCAG model (v6.3).
2. The growth in jobs in the Transportation and Warehousing category was derived as the difference in the employment figures for 2016 and 2040.

Exhibit 5: Steps Used to Forecast Logistics Growth



3. Caltrans' Transportation Economics Branch provides annual county-level projections of employment by 2-digit NAICS industry categories out to 2050[3]. Their forecast is shown in Exhibit 6. This was compared to the forecast from the adopted SCAG SCS as a reasonableness check. As can be seen in Exhibit 7, the two forecasts are reasonably consistent. The SCS forecast is a little lower in magnitude than the Caltrans' forecast, making it a more conservative basis for a fee program[4].
4. Next, the growth in employment in the warehouse sub-category needed to be separated out from the growth of the broader Transportation and Warehousing category. The best available data for accomplishing this comes from the California Employment Development Department (EDD). EDD collects data on employment by detailed NAICS industries, but only at the Metropolitan Statistical Area (MSA)

[3] http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html

[4] The Mitigation Fee Act prohibits agencies from over-charging a fee, but not under-charging (in most cases an agency is not required to charge any fee at all). For fee studies it is important not to *over*-state impacts. This is different from studies done pursuant to CEQA, where it is important not to *under*-state impacts.

geography. Moreover, EDD does not include long-term forecasts. Therefore, the EDD historical data for the Riverside-San Bernardino-Ontario MSA extrapolated into the future based on the continuation of historical trend.

The proportion of Transportation and Warehouse employment that is in the warehousing sub-category was computed (see Exhibit 8) to observe the historical trend. As seen in Exhibit 8, 2003 marks an inflection point where the rate of growth in warehousing increases relative to the growth of transportation employment as a whole. Therefore, the post-2003 trend was used to extrapolate from 2016 to 2040 for both for the warehousing sub-category and the rest of Transportation sub-categories.

Exhibit 6: Caltrans Economic Forecast for Riverside and San Bernardino Counties

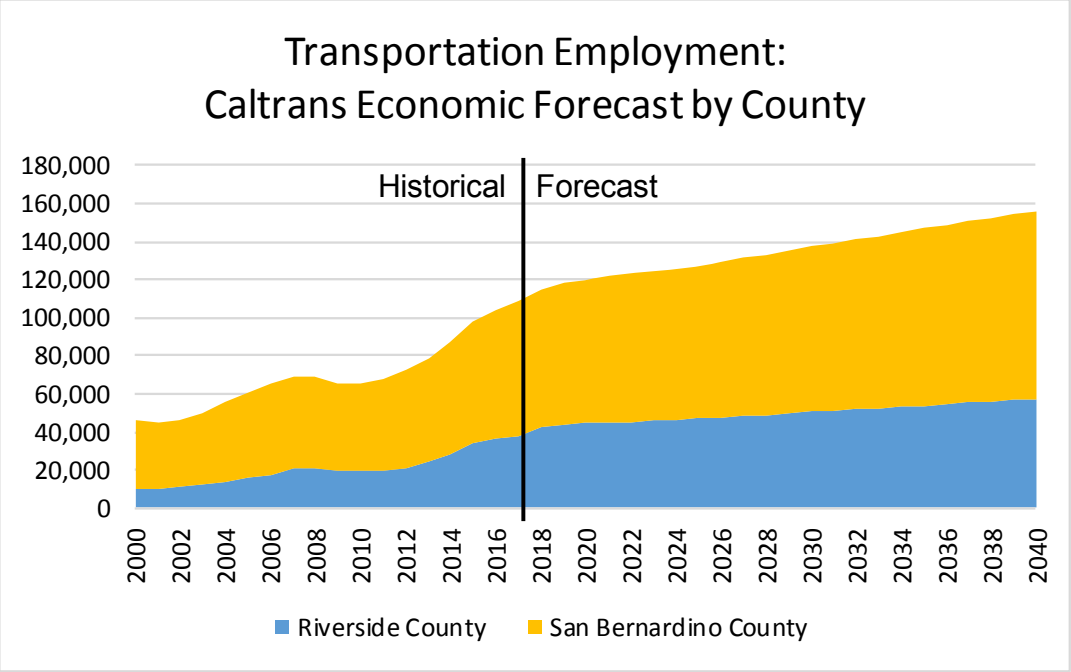


Exhibit 7: Caltrans Economic Forecast Transportation Employment Compared to the SCAG model's Transportation Employment Data for Riverside

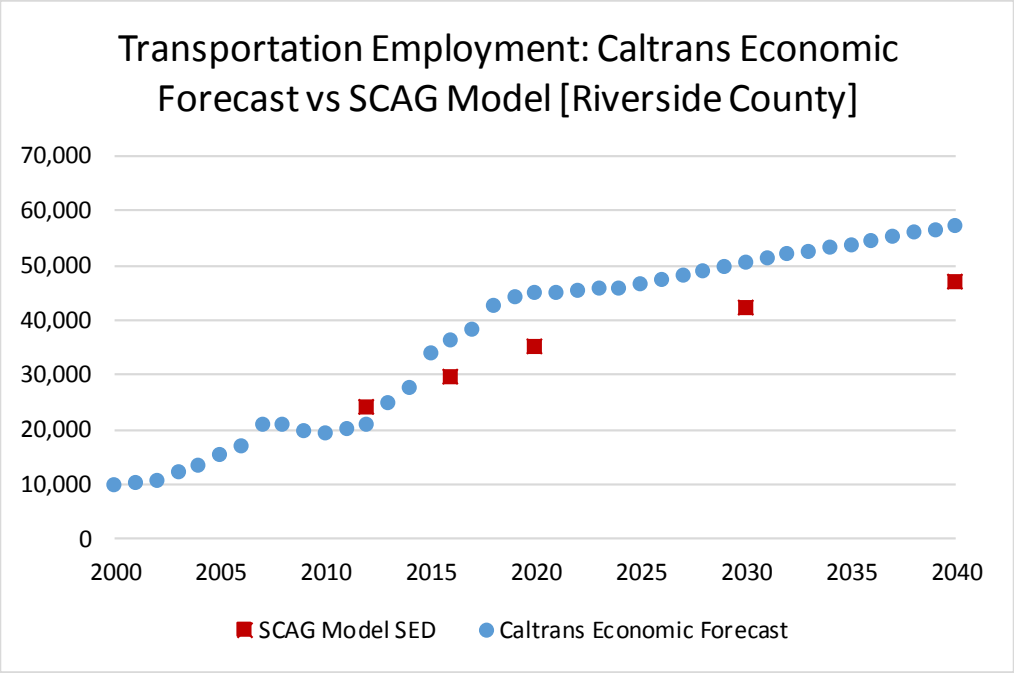
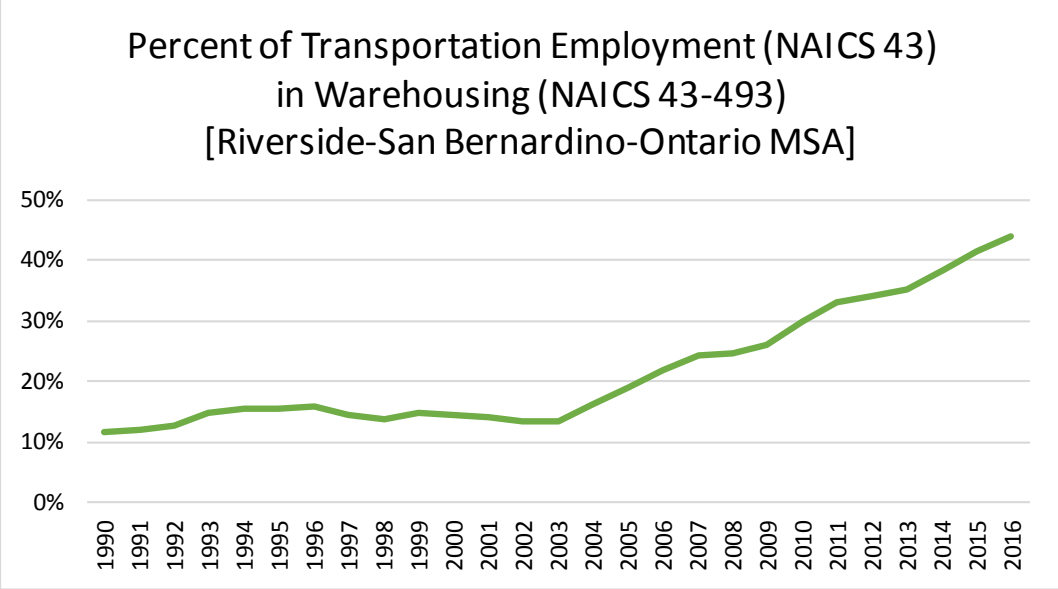
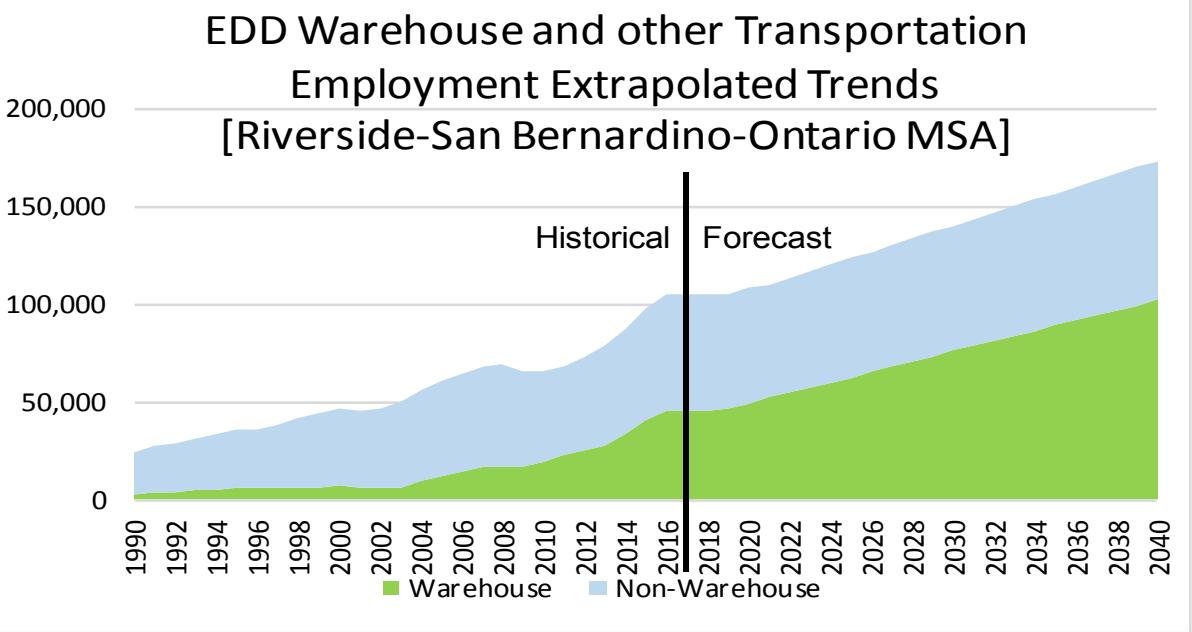


Exhibit 8: The Proportion of Warehousing to Transportation Employment from the Riverside-San Bernardino-Ontario MSA



5. As a reasonableness check, the growth in warehouse jobs and non-warehouse jobs in the Transportation and Warehouse category were compared to historic trends. As can be seen in
6. , the forecasts produced by steps 1 through 4 appear to be reasonable in light of the best available data, and generally reflect a continuation of recent historical trends.

Exhibit 9: Extrapolated EDD to 2040 using the 2003 to 2016 trend for warehousing and other transportation employment

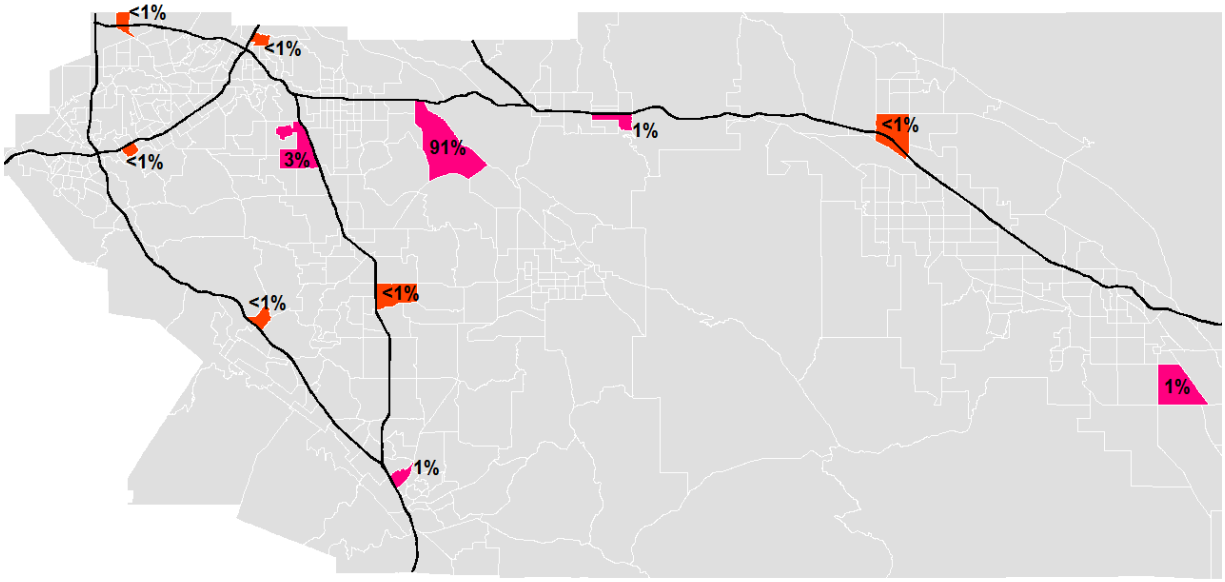


7. Steps 1 through 5 produced a control total for the growth in warehouse jobs in Riverside County, but contain no information about where in the county the jobs would be located. The best available data for the distribution of growth among the traffic analysis zones (TAZs) comes from a study currently underway by SCAG, some products of which are available for modeling purposes[5]. Exhibit 10 shows the TAZs with the highest warehousing growth in the SCAG model SED. The large majority of growth is associated with the World Logistics Center—this TAZ contains 91% of the growth shown for the county at the time the SED was developed. Another 3% of the projected growth is reflected in a TAZ encompassing the western portion of the March Joint Powers Authority (JPA) March Air Force Base Reuse Plan. Three additional TAZ's each show 1% of the forecast growth in warehousing, while six additional TAZs each show warehousing growth of less than 1%.

   The control total from Step 5 was multiplied by the percentage of growth for each TAZ to produce the forecast of the growth in warehouse employment by TAZ.

[5] The on-going SCAG study also produced some forecasts of warehouse jobs by TAZ, but the SCAG team stated that these were very preliminary and recommended that they not be used for the current nexus study.

Exhibit 10: TAZs with Largest Warehousing/Logistics Growth



4. RESULTS OF NEW MODEL RUNS

Once the model was prepared as described in the previous sections, new model runs were performed to forecast various traffic performance measures including the volume-to-capacity V/C ratio for each portion of the freeway network in Riverside County. The V/C ratio was computed using the passenger car equivalent (PCE) factors[6] embedded in the model. The Riverside County Congestion Management Plan (CMP) sets a target LOS of "E" (V/C ratio no greater than 0.99) for freeways, so any segment with a V/C ratio equal to or greater than 1.00 is considered deficient as defined by the CMP.

Exhibit 11 plots the existing freeway V/C ratios geographically. There are three current deficiencies as illustrated: I-15 in the Jurupa Valley, I-215 between downtown Riverside and Moreno Valley, and SR-91 through Corona. It should be noted that in many cases the extents of congestion drivers experience is exacerbated by queuing from downstream segments where deficiencies are observed (i.e. the bottlenecks identified by the model).

Exhibit 12 illustrates the impact of 2040 travel demands on the existing freeway network with no additional capacity improvements. The deficiencies shown in Exhibit 11 worsen and an additional three deficiencies are identified. Both plots only show Western Riverside County because no deficiencies were observed on freeways elsewhere in Riverside.

[6] PCE factors are used to account for the difference in size, speed, and maneuverability between different classes of vehicles, including the effect of slopes on the operating characteristics of trucks.

Exhibit 11: Existing Freeway Deficiencies in Western Riverside County

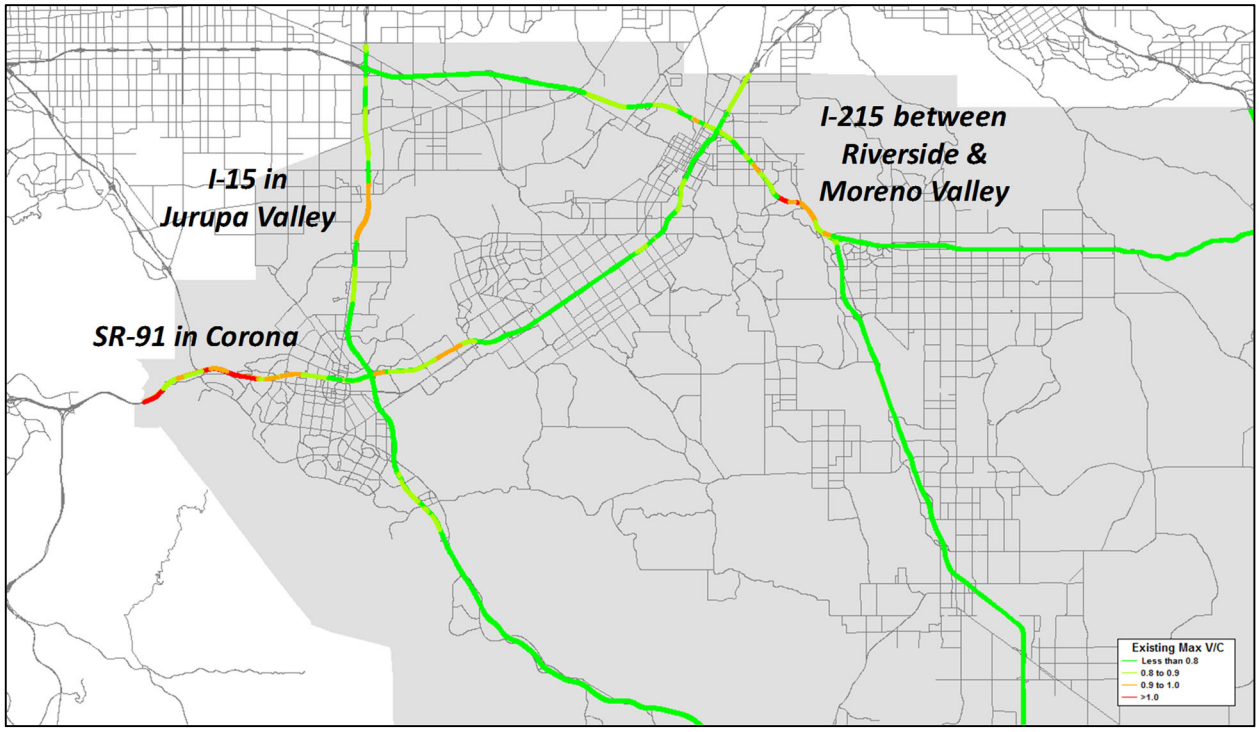


Exhibit 12: Future Freeway Deficiencies in Western Riverside County

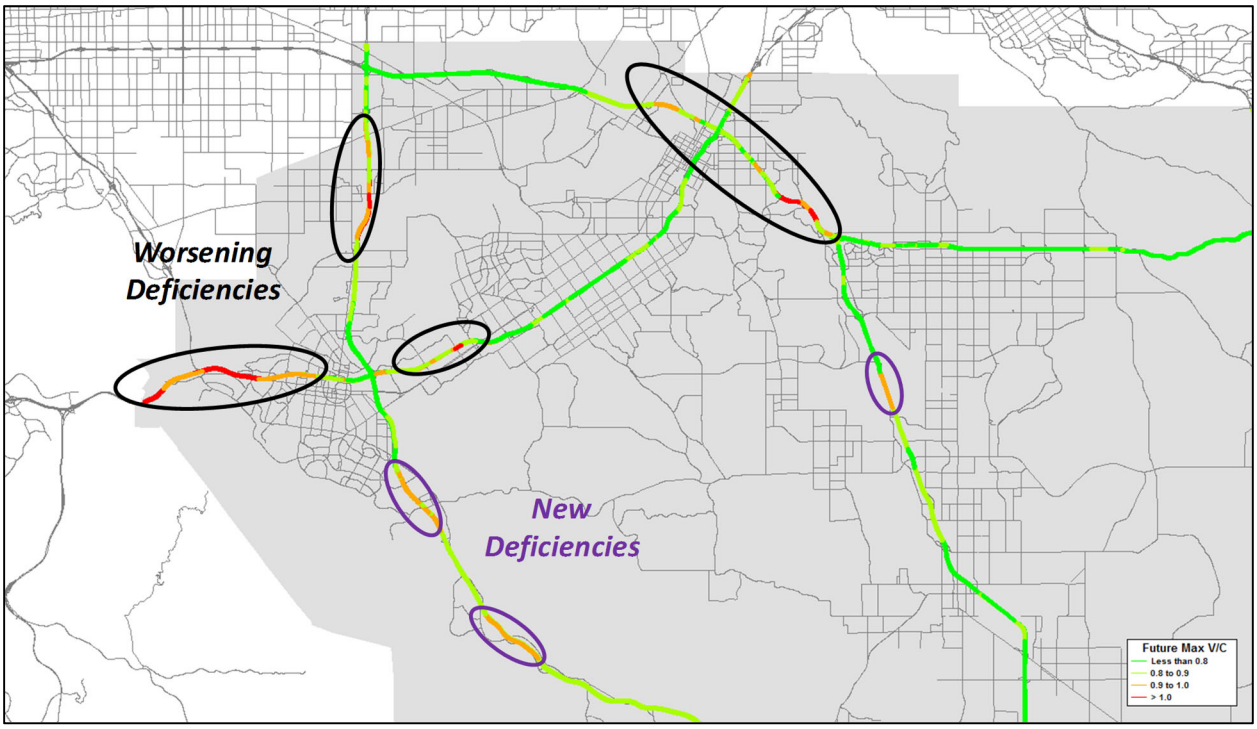
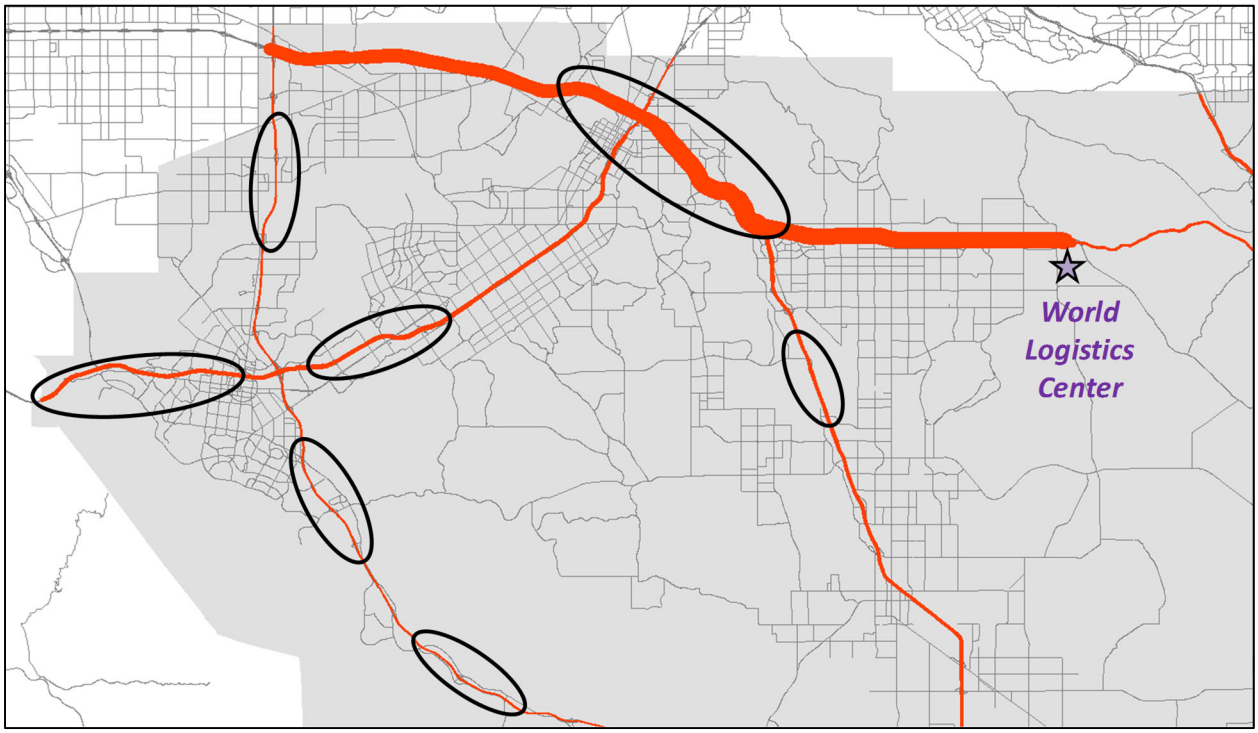


Exhibit 13 shows the relative growth in truck traffic due to new logistics, with the bandwidth being proportional to the increased volume. The largest flows of trucks are forecast to come from truck traffic to and from the proposed World Logistics Center. The largest increases in truck flows would occur on SR-60 and I-215 west of the World Logistics Center. However, truck traffic from new warehouses would contribute to worsening traffic conditions at all of the deficient freeway sections previously identified in Exhibit 11 and Exhibit 12, and as indicated by the black ellipses in Exhibit 13 .

Exhibit 13: New Logistics Trucks on Freeways in Western Riverside County



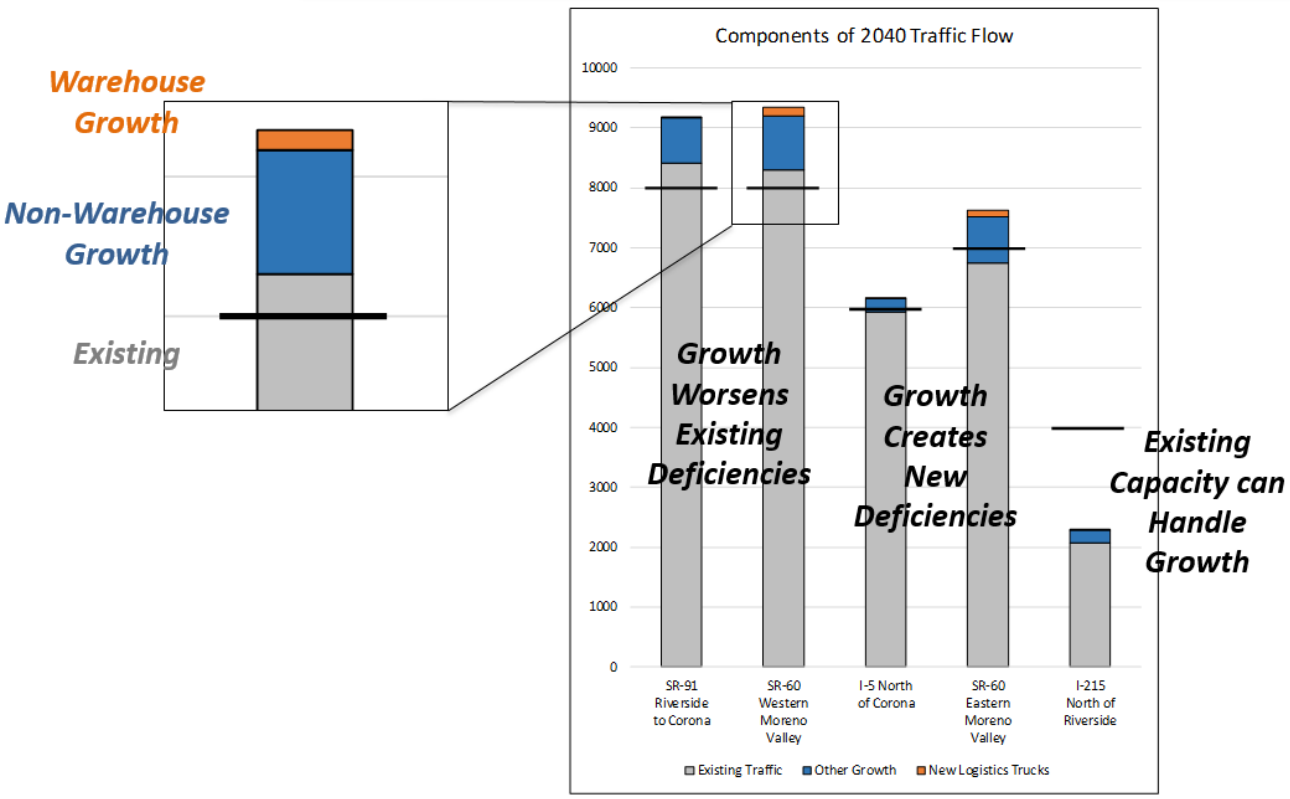
5. NEXT STEPS

Once the existing and future deficiencies were identified and the truck traffic arising from new logistics warehouses was forecast, the next step in the study process will be to determine how much of each future deficiency can be attributed to new truck trips from warehouses. Exhibit 14 shows that there are three possible situations in terms of the determining the relative share of future forecast traffic growth hat may be attributable to growth in warehousing in Riverside County:

- Some freeway segments have an existing deficiency that will be worsened with the addition of traffic from new growth. SR-91 between Riverside and Corona and SR-60 in western Moreno Valley appear to fall into this category. In these cases, the percent of the deficiency attributable to new growth is the portion of the excess traffic (excess being the traffic above the capacity of the road) that arises from new growth rather from existing traffic.
- The second case occurs when the existing traffic volumes are below the capacity of the freeway, but the addition of traffic from new growth creates a deficiency where none previously existed. I-15 north of Corona and SR-60 in eastern Moreno Valley are two examples of this. In such cases 100% of the deficiency can be attributed to new development.
- In the final situation, freeway volumes are below the capacity of the freeway, even when the traffic from new development is added in. In such cases there is no deficiency. No fee can be collected because no improvement is needed to mitigate the impacts of new growth.

It should be noted that in all three examples, the proportion of traffic impacts associated with new warehousing development in Riverside County (illustrated in orange in the exhibit) is relatively small compared to the traffic impacts associated with all other growth (illustrated in blue in the exhibit). As such, the share of the cost of mitigation attributable to growth in warehousing in Riverside County must be commensurate with the relative share of the impact resulting from these uses. Determination of mitigation needs, costs and the relative share attributable to new warehousing in Riverside County will be the subject of the next technical memorandum.

Exhibit 14: Examples of Attribution of 2040 Traffic Flow to Differing Sources



RCTC TRUCK STUDY AND REGIONAL LOGISTICS MITIGATION FEE

Technical Memorandum:
Task 2 – Funding and Cost Analysis

Prepared for :

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

Prepared by:

WSP

In partnership with

FEHR & PEERS

Revised: June 2018

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1. INTRODUCTION

The statutory requirements and legal precedents relating to the imposition of impact fees mandate developing a fully fundable program to ensure that the revenues collected are proportional, adequate and can be spent in a reasonable amount of time to effectively mitigate the resulting impacts. Accomplishing the funding and cost analysis task represents a series of critical steps in the nexus process to identify other available funding sources that will contribute to mitigating the impacts of logistics facilities and other development in the County. This includes quantifying the costs of addressing existing deficiencies in highway infrastructure, the costs to address impacts resulting from other development activities not attributable to the warehousing and logistics sector, and the cost to address the impacts of pass through trips, including goods movement. Additionally, this task will need to establish a program of projects that can be implemented to effectively mitigate the cumulative regional impacts of new logistics related developments and to satisfy requirements for timely revenue expenditure.

The various steps of the nexus development process that contribute to accomplishing this task are summarized as follows. This effort starts by using the traffic data outputs of the prior task to identify capacity deficiencies in the highway network, then determining the proportion of those deficiencies that are attributable to new warehousing and logistics related development. The resultant information can then be cross-referenced with project cost information to determine the overall cost of mitigating freight impacts as the basis for estimating a fee.

2. IDENTIFYING CAPACITY DEFICIENCIES

A primary step in the process of determining the basis for any impact fee program is identifying the extent of the impact that will result from new development activity. For the purposes of this study, the SCAG regional travel demand model was the primary tool used for identifying existing and future capacity deficiencies and determining attribution of deficiencies to new logistics trucking[1]. A modified SCAG model was run for existing (2016) and future with no improvement (2040) conditions. Model outputs were processed to identify deficiencies and percent attributable to new logistics trucking, as described in the following sections.

2.1. ADJUSTING THE SCAG MODEL

The SCAG Model's 2016 scenario year network was used for all model runs with the 2016 and 2040 socio-economic data providing the basis for the demand inputs. These model files were from the version of the SCAG model used to develop the 2016 RTP/SCS. In accordance with best industry practice, some adjustments were made to improve the accuracy of the model

[1] The following model analysis was performed by WSP based upon modeling information originally developed by the Southern California Association of Governments (SCAG). SCAG is not responsible for how the model is applied or for any changes to the model scripts, model parameters, or model input data. The resulting modelling data does not necessarily reflect the official views or policies of SCAG. SCAG shall not be held responsible for the modeling results and the content of the documentation.

with respect to freeways in Riverside County. These adjustments are described in an earlier technical memorandum[2].

2.1.1. Model Validation

Best industry practice requires that a regional model be adjusted and re-validated prior to using it for sub-regional studies:

> *"Agencies that use MPO models for purposes other than regional planning should ensure that the model provides the appropriate scale and sensitivity for applications at a sub-regional level such as corridor, sub-area, or local planning studies. Below the regional level, model refinements are likely necessary to ensure the model meets the validation targets established in these guidelines and is appropriately sensitive to smaller scale changes associated with sub-regional studies."* From *2010 California Regional Transportation Plan Guidelines*, California Transportation Commission.

The previous technical memorandum described a series of diagnostic tests that the study team performed on the SCAG model to test its validity for use in a freeway impact fee nexus study. The tests showed that the model represented truck traffic on Riverside County freeways well. For example, Figure 2-1 compares the percentage of trucks in the traffic on various freeways in the model versus the percentage in the Caltrans performance measurement system (PeMS) data, and Figure 2-2 shows a similar comparison for truck volumes. There is a close correlation between the model and actual values, and no systemic tendency towards over- or under-estimating the truck percentage.

[2] See the discussion of diagnostic tests of the SCAG model in *Technical Memorandum 1: Existing and Future Conditions*, WSP, July 2017

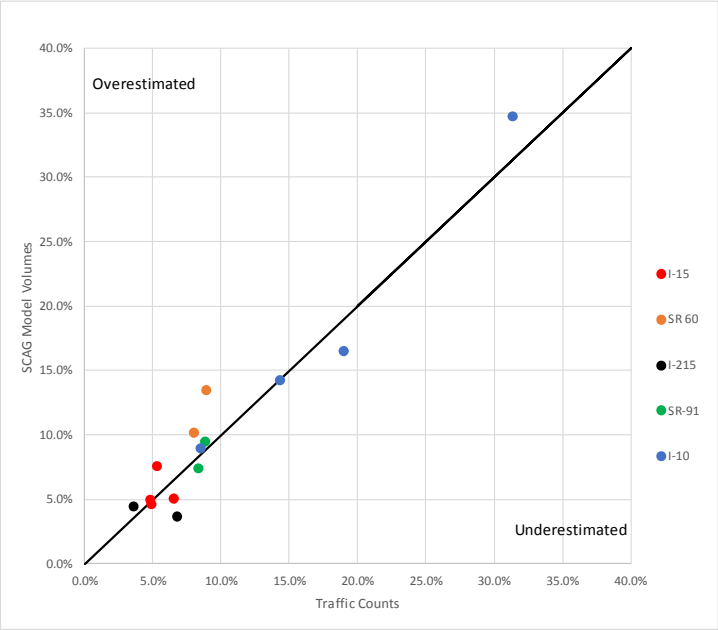


Figure 2-1: Comparison of Modeled to Actual Daily Truck Percentages on Riverside County Freeways

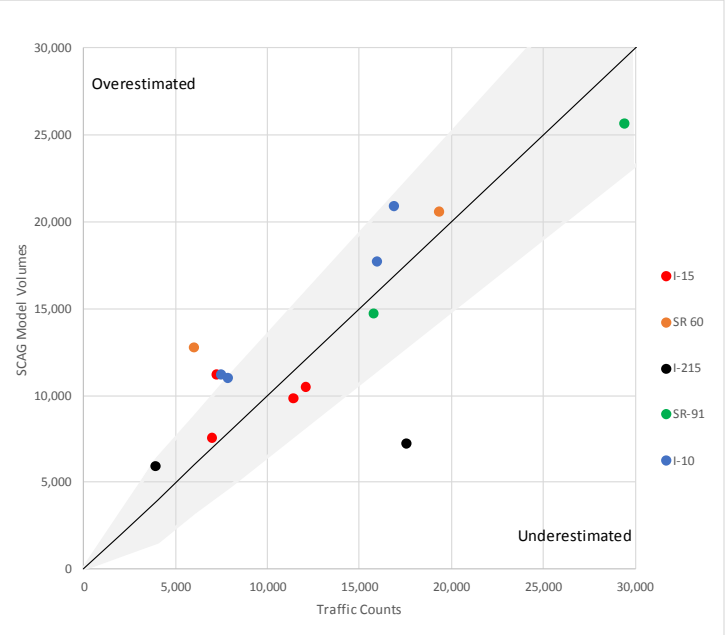


Figure 2-2: Comparison of Modeled to Actual Daily Truck Volumes on Riverside County Freeways

However, the tests also revealed that there was an issue warranting adjustment. Figure 2-3 shows link flows from a SCAG model run for 2016 compared to PeMS data for the same year. This data was evaluated two ways, namely:

- The shaded areas in Figure 2-2 and Figure 2-3 show the allowable deviation based on Caltrans guidelines. The allowable deviation reflects the fact that the actual traffic volumes on roads fluctuate from day to day, so the "normal" traffic volume that a model should replicate is a range rather than a fixed value. A model is considered generally valid if 75% of the points fall within the allowable deviation. In this case 77% of the sites are within the allowable range in the AM peak hour and 86% in the PM peak hour, so the model passes this test of validity.
- The second test was to see whether there was a general tendency for the model to over-estimate or under-estimate freeway volumes on freeways in Riverside County. Figure 2-3 shows that the model failed this test; over-estimating traffic on Riverside County freeways by an average of 26% in the AM peak hour and 20% in the PM peak hour.

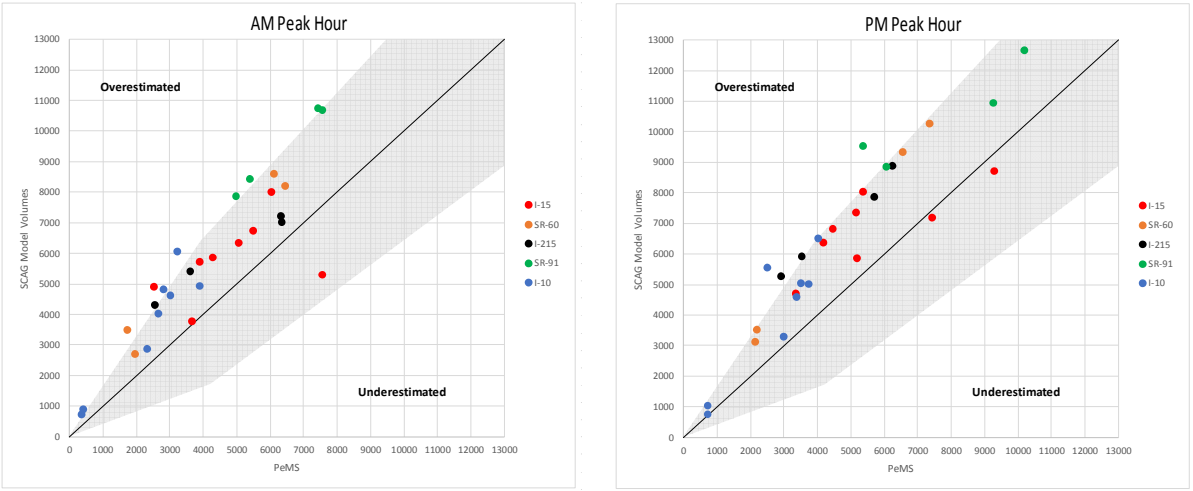


Figure 2-3: AM and PM Peak Hour Comparison of Traffic Counts and SCAG Model Volumes

The model overestimation can be reduced by factoring down model volumes in a post-model adjustment. Only car volumes were factored down, not truck volumes, because truck volumes did not show the same trend (see Figure 2-2).

Figure 2-4 shows the results after applying factors of 0.74 and 0.80 in the AM peak hour and PM peak hour, respectively. After adjustments, the R-squared[3] value increased from 0.11 to 0.79 in the AM peak hour and from 0.51 to 0.84 in the PM peak hour.

3 R-squared is a measure of how well the forecast accounts for variations in the traffic counts. R-squared values can range from 0.00, indicating no relationship between the model values and the counts, to 1.00, indicating that the model accounts for all variation in the count data set.

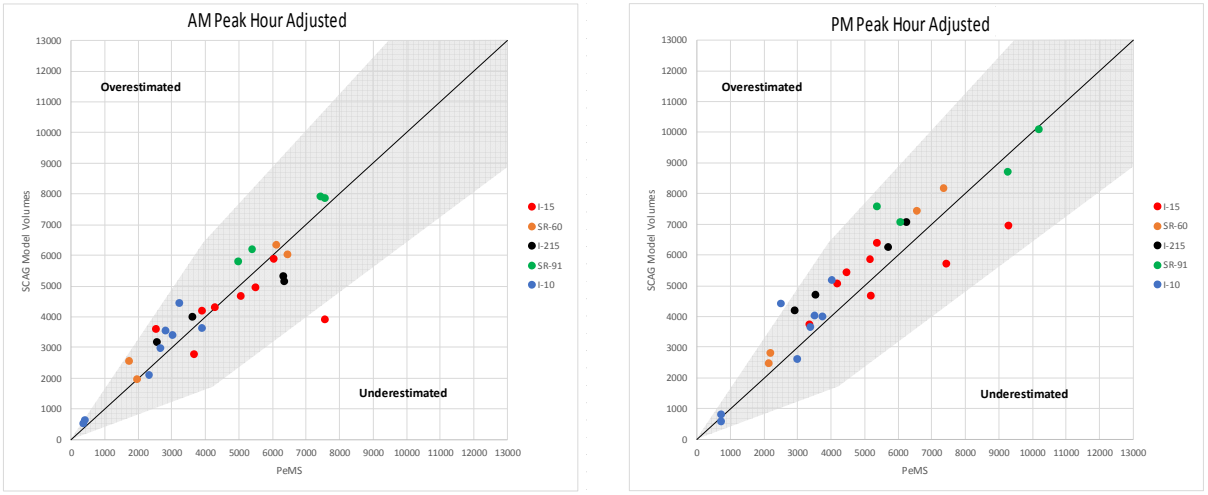


Figure 2-4: AM and PM Peak Hour Comparison of Traffic Counts and SCAG Model Adjusted Volumes

2.1.2. Forecasting the Growth in Logistics Employment in Riverside County

The steps used to forecast for the growth in logistics in Riverside County are outline in Figure 2-5 below.

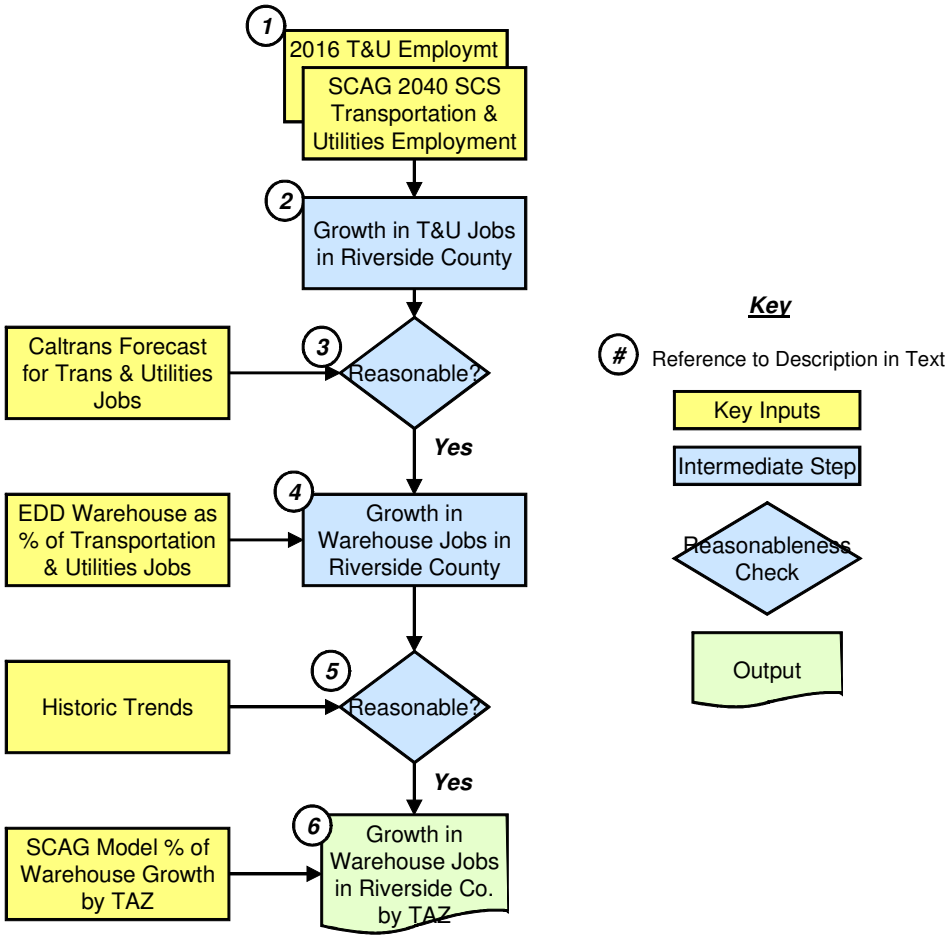


Figure 2-5: Steps Used to Forecast Logistics Growth

The steps in the process were:

1) The starting point for forecasting logistics growth in Riverside County was the adopted SCAG 2016 RTP/SCS. The SCS socio-economic data (SED) included several employment categories, of which the most relevant for this study is Transportation and Warehousing (corresponding to NAICS code 48-49). Warehousing employment (NAICS subcategory code 493) is included within this category, along with other types of employment such as air and rail transportation, trucking, transit, pipeline, and postal service. The SCS data was obtained from SCAG in the form of SED inputs for the latest SCAG model (v6.3).

2) The growth in jobs in the Transportation and Warehousing category was derived as the difference in the employment figures for 2016 and 2040.

3) Caltrans' Transportation Economics Branch provides annual county-level projections of employment by 2-digit NAICS industry categories out to 2050[4]. Their forecast is shown in Figure 2-6. This was compared to the forecast from the adopted SCS as a reasonableness check. As can be seen in Figure 2-7, the two forecasts are reasonably consistent. The SCS forecast is a little lower than the Caltrans' forecast, representing a more conservative forecast as the basis a fee program[5].

4) Next, the growth in employment in the warehouse sub-category needed to be separated out from the growth of the broader Transportation and Warehousing category. The best data available for doing this comes from the California Employment Development Department (EDD). EDD collects data on employment by detailed NAICS industries, but only at the Metropolitan Statistical Area (MSA) geography. Moreover, EDD does not include long-term forecasts. Therefore, the EDD historical data for the Riverside-San Bernardino-Ontario MSA had to be extrapolated into the future.

   First, the proportion of Transportation and Warehouse employment that is in the warehousing sub-category was computed (see Figure 2-8) to observe the historical trend. As seen in Figure 2-8, 2003 marks an inflection point where the rate of growth in warehousing increases relative to the growth of transportation/warehousing employment overall. Therefore, the post-2003 trend was used to extrapolate from 2016 to 2040 for both for the warehousing sub-category and the rest of Transportation sub-categories.

5) As a reasonableness check, the growth in warehouse jobs and non-warehouse jobs in the Transportation and Warehouse category were compared to historic trends. As can be seen in Figure 2-9, the forecasts produced by steps 1 through 4 appear to be reasonable considering the best available data.

6) Steps 1 through 5 produced a control total for the growth in warehouse jobs in Riverside County, but contain no information about where in the county the jobs would be located. Locational data is needed so that the growth will be properly represented in the forecast in terms of where they will affect the freeway system.

   The best available data for the distribution of growth among the traffic analysis zones (TAZs) comes from a study currently underway by SCAG, some products of which are available for modeling purposes[6]. Figure 2-10 shows the TAZs with the highest warehousing growth in the SCAG model SED. The large majority of growth is associated

[4] http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html

[5] Impact fee programs must demonstrate a rational nexus and rough proportionality between the nature of the development that would be subject to the fee, the magnitude of the impact being created, and the cost to mitigate the specific impact. For fee studies, it is important not to *over*-estimate impacts or thr required mitigation, which can be different from other types of traffic impact studies done pursuant to CEQA, where it is typically more important not to *under*-estimate impacts.

[6] The on-going SCAG study also produced some forecasts of warehouse jobs by TAZ, but the SCAG team stated that these were very preliminary and recommended that they not be used for the current nexus study.

with the World Logistics Center—this TAZ contains 91% of the growth for the county. After the five TAZ with the largest growth, there are six TAZs each with less than 1% of the warehousing employment in the county.

The control total from Step 5 was multiplied by the percentage of growth for each TAZ to produce the forecast of the growth in warehouse employment by TAZ.

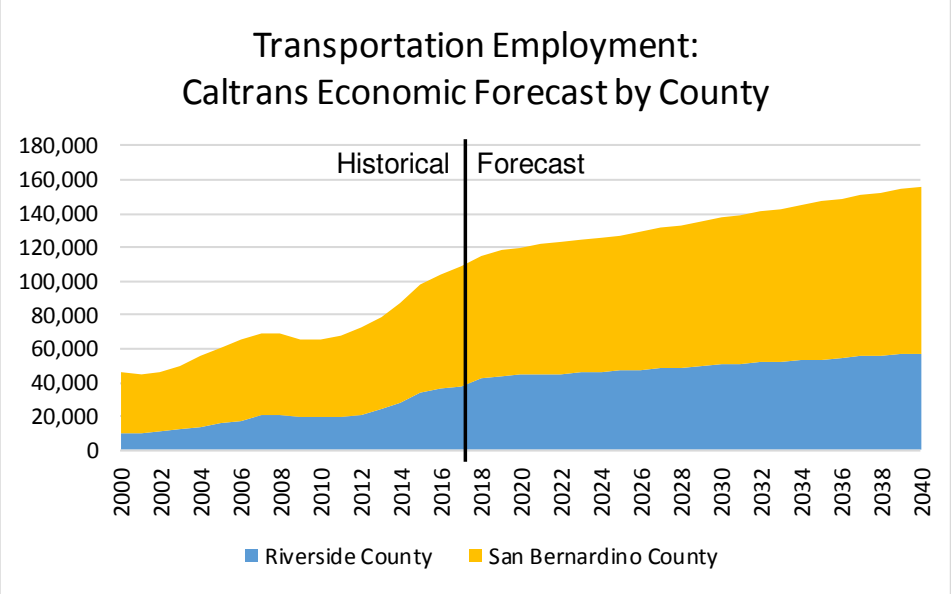


Figure 2-6: Caltrans Economic Forecast for Riverside and San Bernardino Counties

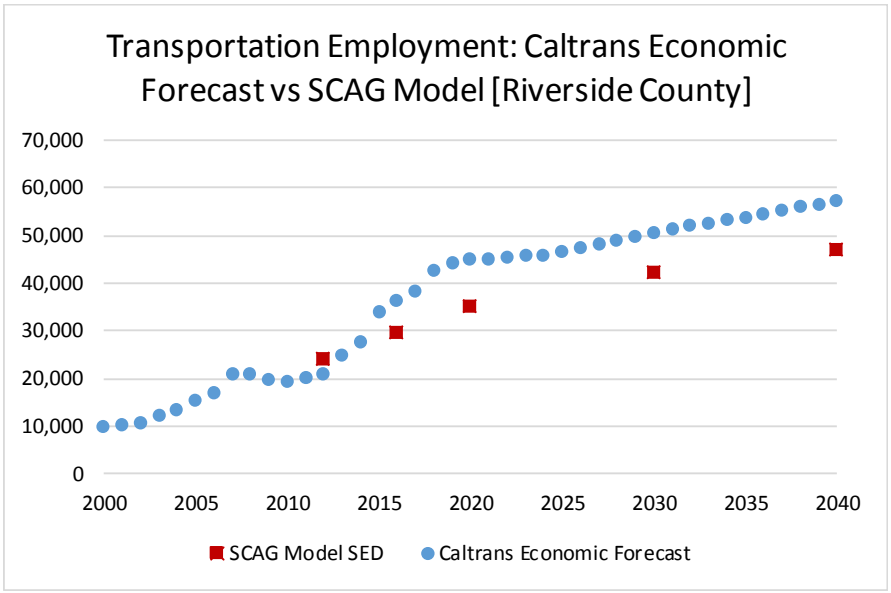


Figure 2-7: Caltrans Economic Forecast Transportation Employment Compared to the SCAG model's Transportation Employment Data for Riverside

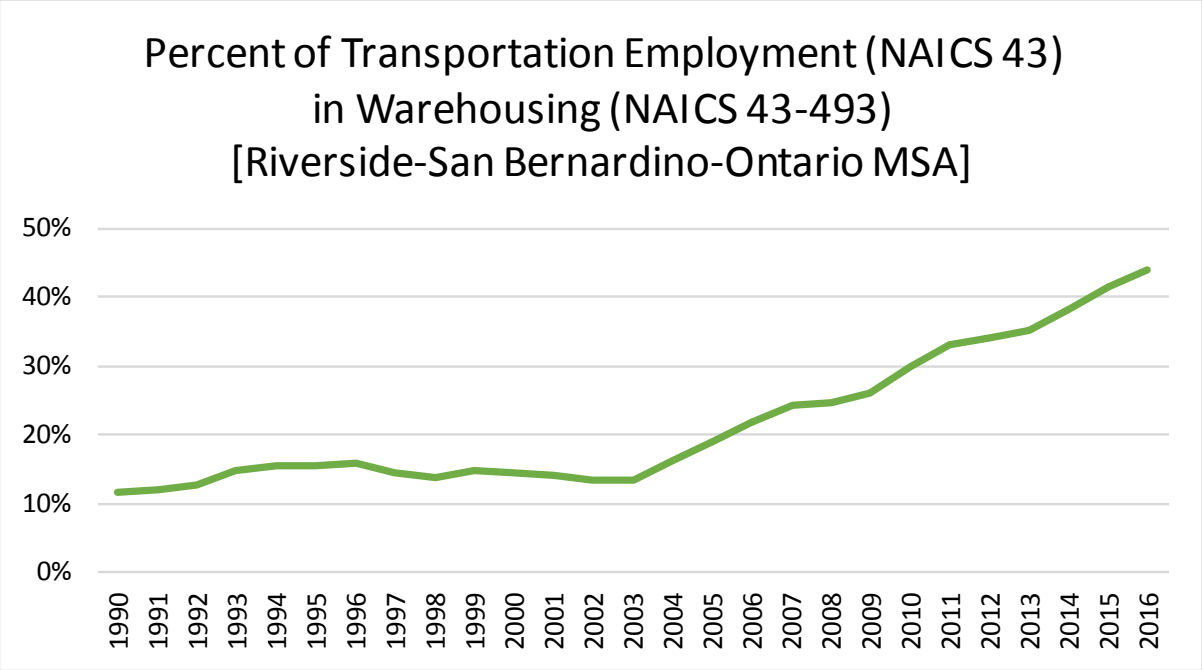


Figure 2-8: The Proportion of Warehousing to Transportation Employment from the Riverside-San Bernardino-Ontario MSA

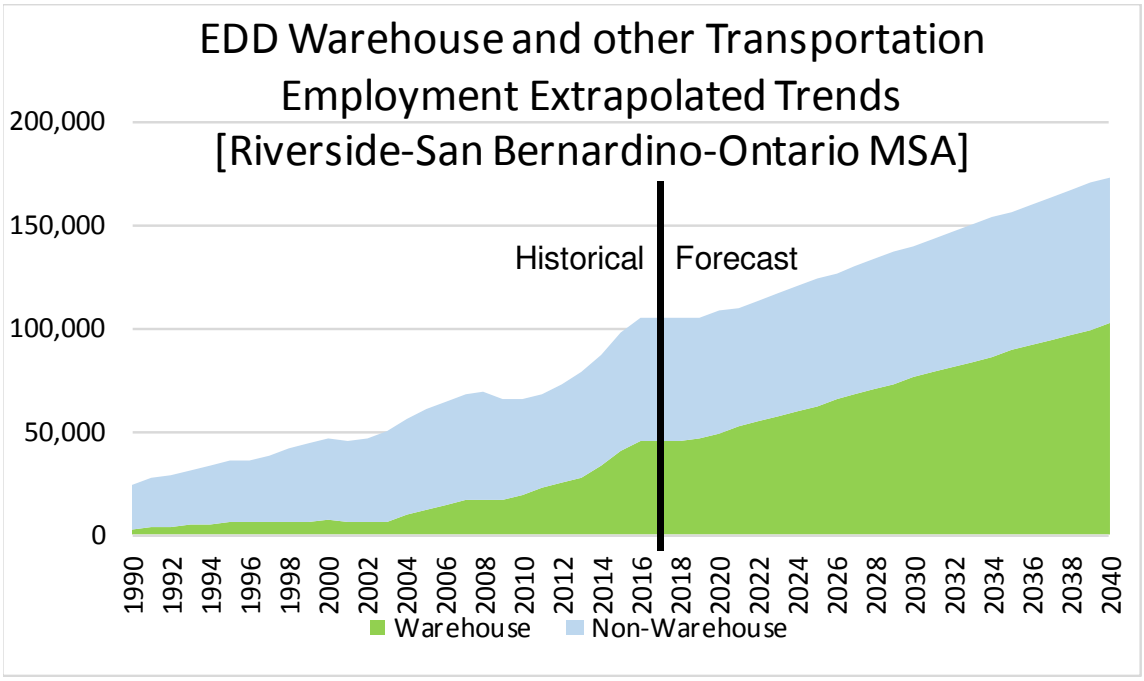


Figure 2-9: Extrapolated EDD to 2040 Using the 2003 to 2016 Trend for Warehousing and Other Transportation Employment

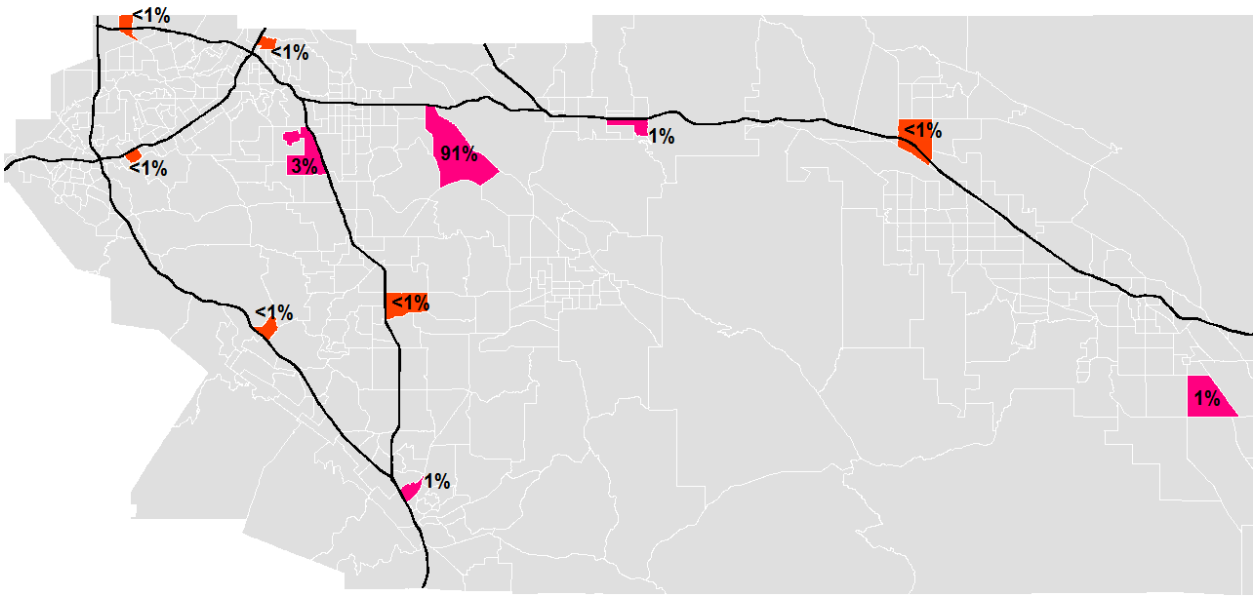


Figure 2-10: TAZs with Largest Warehousing/Logistics Growth in Riverside County

2.1.3. Model Post Processing

The model data was post-processed to calculate peak hour volume-to-capacity (V/C) ratios and identify deficiencies. Link data was processed for all freeway links in Riverside County. The SCAG model generates link flows for the AM peak (3-hour) and PM (4-hour) peak periods. Peak period flows for non-trucks were converted to hourly flows using conversion factors of 0.35 and 0.28 for AM and PM peak hours, respectively. These factors were taken from *San Bernardino County CMP Appendix H – Post Processed Traffic Volume Guidelines* and are widely used in model applications in Riverside and San Bernardino Counties. Trucks were assumed to have a flat demand for each hour within a peak period (i.e. factors of 0.33 and 0.25 for AM and PM). Then, the validation factors discussed in Section 2.1 (0.74 and 0.80 in the AM and PM peak hours, respectively) were applied to non-truck flows.

2.2. Identifying Deficiencies

The V/C ratio was computed for each link in the AM and PM peak hours using the capacities and passenger car equivalent (PCE) factors[7] embedded in the SCAG model which account for grade. Per the RCTC Congestion Management Program, the adopted minimum Level of Service (LOS) threshold for freeways in Riverside County is LOS "E" meaning that facilities with a V/C ratio of 1.0 or higher are considered deficient.

Figure 2-11 and Figure 2-13 show the existing V/C ratios for the AM peak hour and PM peak hour, respectively. There are three current deficiencies identified in Riverside County: SR-91 in Corona during the both the AM and PM peak hours, I-15 in the Jurupa Valley during the PM peak hour, and I-215 between Riverside and Moreno Valley during the PM peak hour. These congested sections may result in queuing in upstream sections whose V/C ratios would not in themselves be problematic, so drivers may perceive the problem sections to be longer than shown.

Figure 2-12 and Figure 2-14 shows 2040 traffic demand assigned to the existing network[8] with no capacity improvements for the AM and PM peak hours, respectively. The existing deficiencies would worsen and two additional deficiencies in the AM peak hour and five additional deficiencies in the PM peak hour would be created.

7 PCE factors are used to account for the difference in size, speed, and maneuverability between different classes of vehicles, including the effect of slopes on the operating characteristics of trucks.

8 The SCAG existing model network represents the current state of the transportation system in 2016 and does not reflect those projects completed since 2016. In Riverside County, the SR-91 Express Lanes Extension project that included various freeway improvements along SR-91 from the Orange County line to I-15 was completed after 2016. Projects completed after 2016 (as well as projects currently under construction) get reconciled during subsequent study steps, as described in Chapter 4 of this technical memorandum.

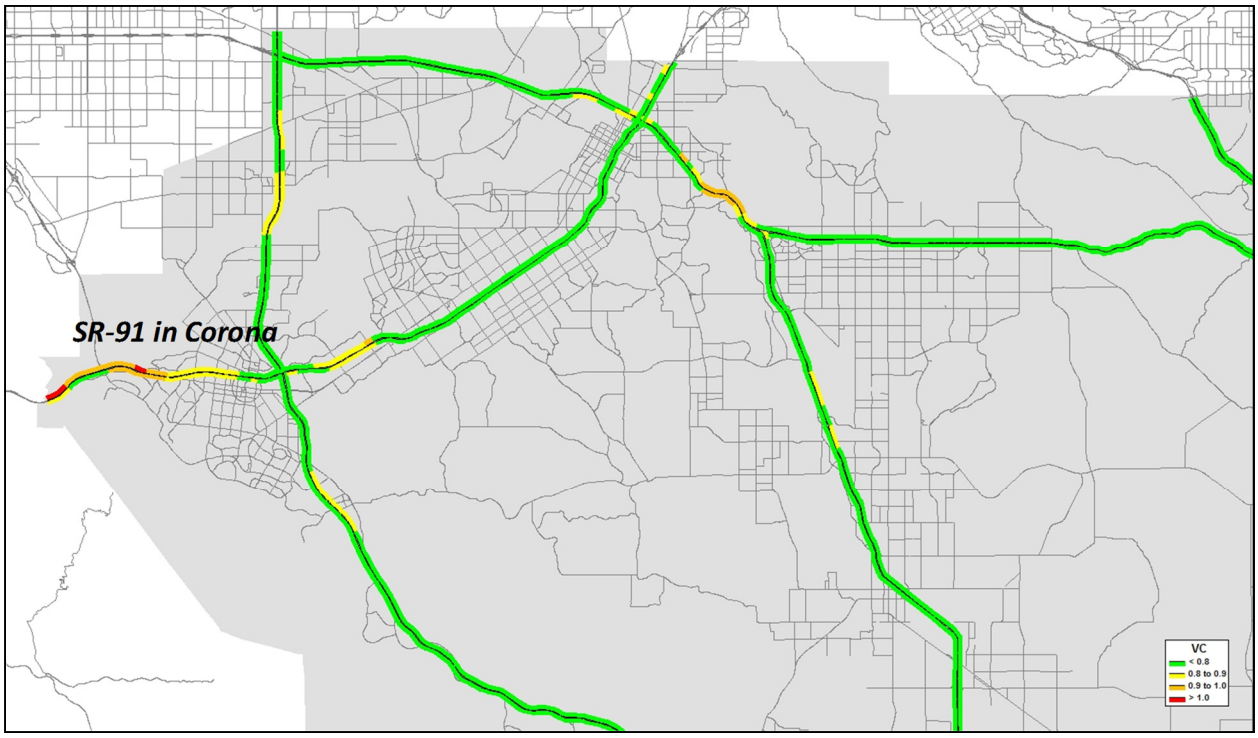


Figure 2-11: Existing Deficiencies in Riverside County during the AM Peak Hour

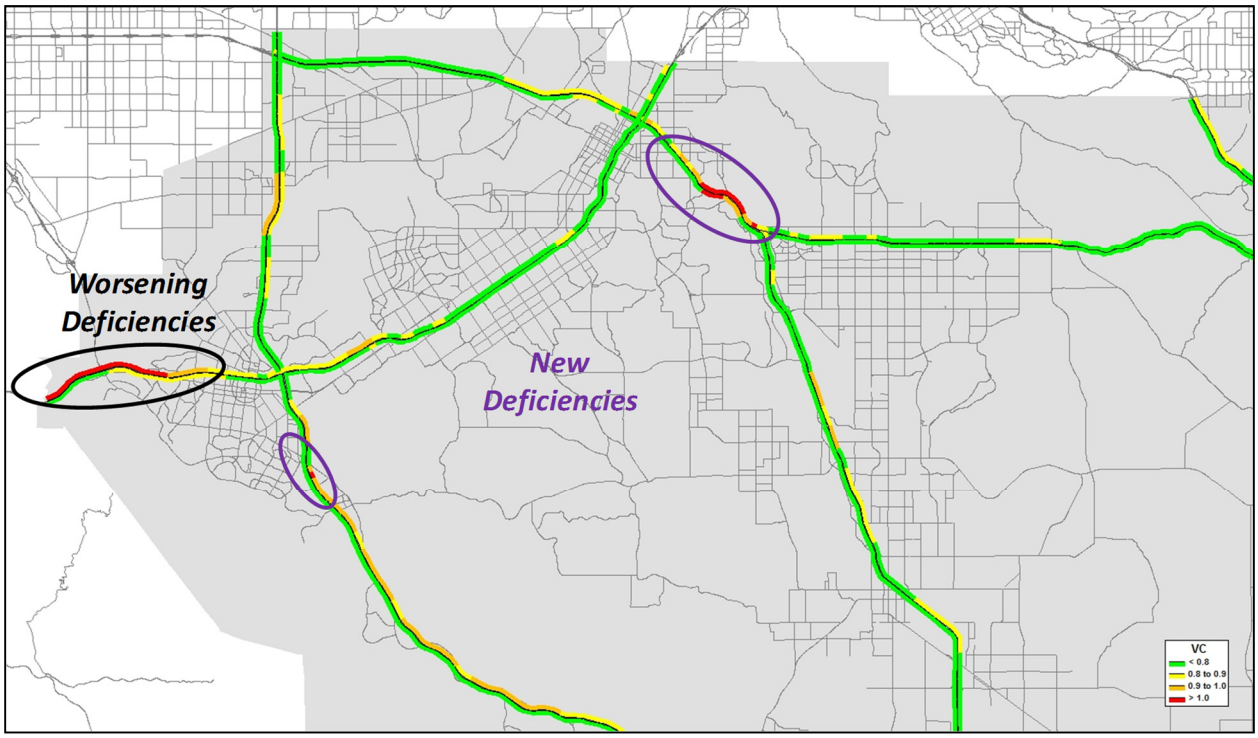


Figure 2-12: Future Deficiencies in Riverside County during the AM Peak Hour

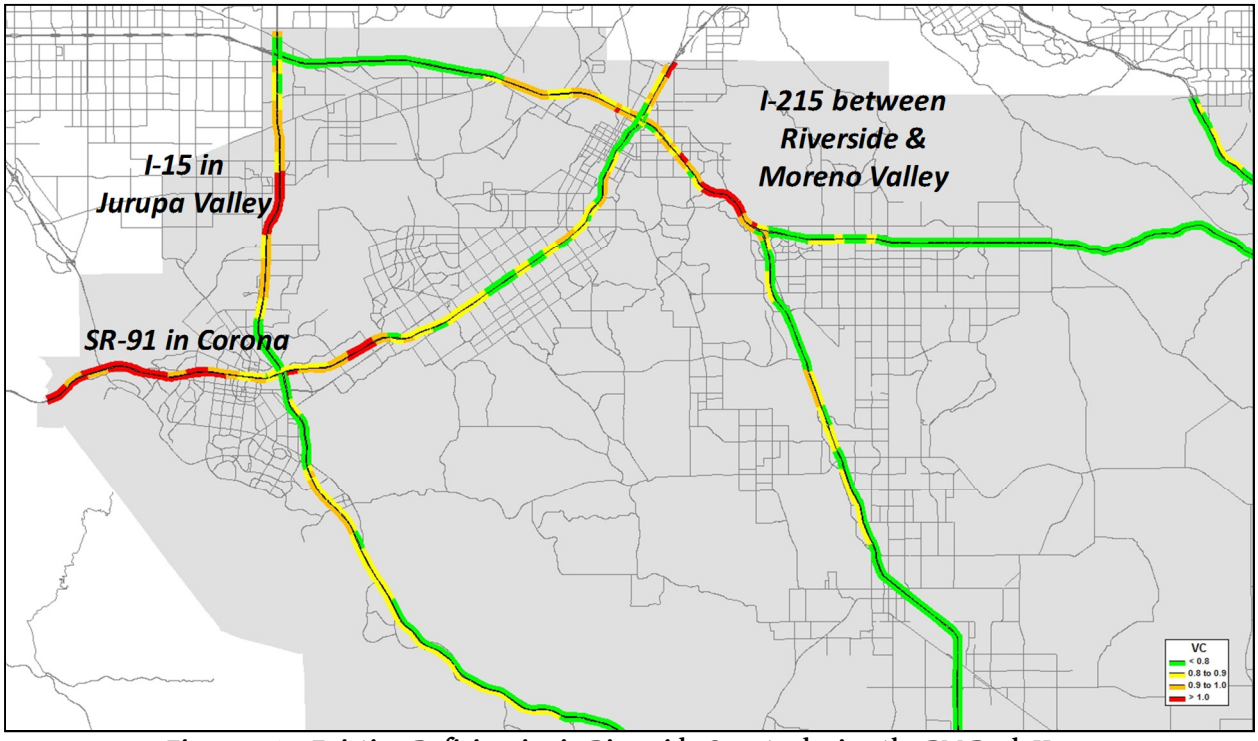


Figure 2-13: Existing Deficiencies in Riverside County during the PM Peak Hour

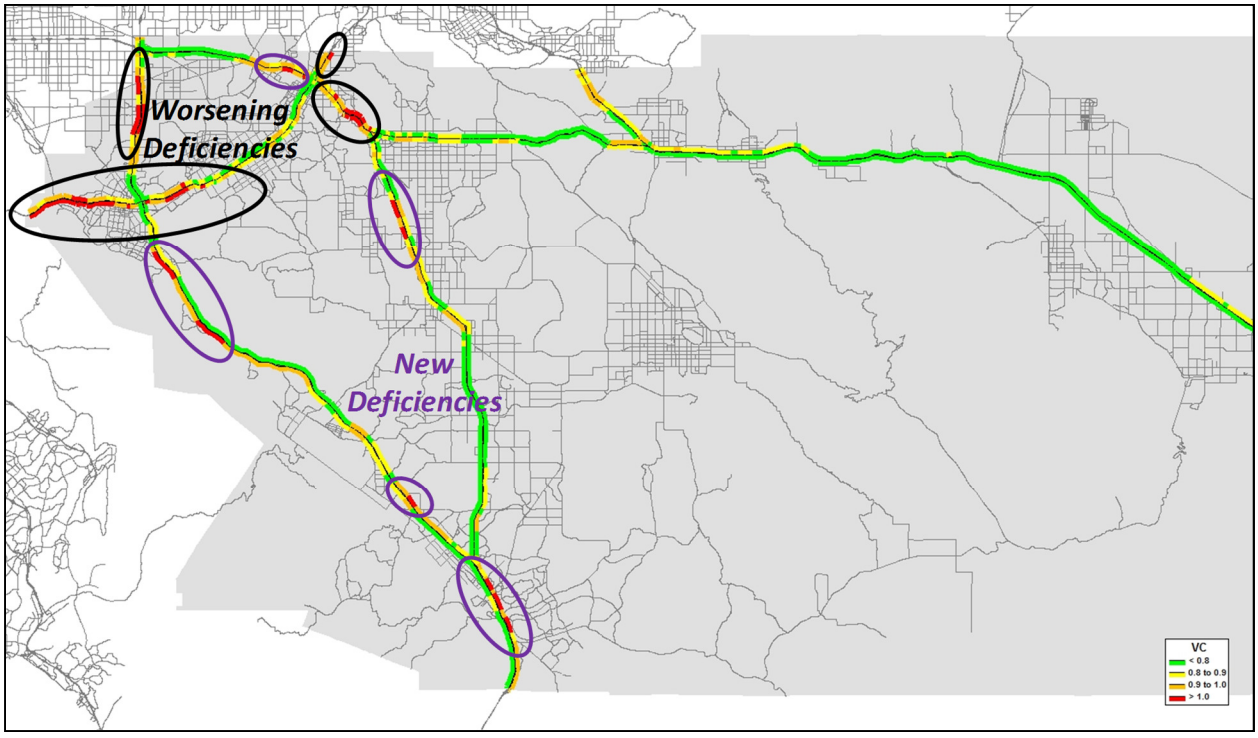


Figure 2-14: Future Deficiencies in Riverside County during the PM Peak Hour

3. ATTRIBUTING CAPACITY DEFICIENCIES TO NEW LOGISTICS DEVELOPMENT

3.1. Percent Attributable to Future Development

The Mitigation Fee Act limits impact fees to new development's "fair share" of the cost of needed improvements. For that reason, once the existing and future freeway deficiencies were identified, the next step was to determine how much of each future deficiency can be attributed to traffic from future development. There are three possible situations for each freeway link:

- Freeway volumes are below the capacity of the freeway, even when the traffic from new development is added in. In such cases there is no deficiency. No fee can be collected because no improvement is needed.
- Existing traffic volumes are below the capacity of the freeway, but the addition of traffic from new growth creates a deficiency where none previously existed. In such cases 100% of the deficiency can be attributed to new development.
- There is an existing deficiency that will worsen with the addition of traffic from new growth. In these cases, the percent of the deficiency attributable to new growth is the portion of the excess traffic (excess being the traffic above the capacity of the road) that arises from new growth rather than from existing traffic.

3.2. Percent Attributable to New Logistics Development

3.2.1. Tracking new logistics truck traffic in the SCAG model

In order compute the percent of each deficiency that is attributable to new logistics development, it was necessary to keep track of trips generated by new logistics uses during the model assignment. The socio-economic data (SED) input files were modified in such a way that only growth in warehousing employment were allocated to traffic analysis zones (TAZ), so all trips to or from these TAZ can be attributed to only new logistics activity. A select-zone query was generated during the assignment step so the new logistics trips were recorded for each link in the model. The SCAG model classifies vehicles by class including trucks, so trucks in the select-zone query represent all the truck traffic attributable to new logistics development.

Figure 3-1 shows the truck traffic due to new logistics, with bandwidth proportional to traffic flow. The largest flows are forecast to come from the proposed World Logistics Center, with the location of the World Logistics Center highlighted for easy reference. The largest increases in truck flows would occur on SR-60 and I-215 west of the World Logistics Center.

3.2.2. Percent Attributable to New Logistics Development

First, for each link, the growth in traffic volumes (measured as passenger car equivalents or PCE) from 2016 to 2040 was calculated. Then new logistics truck traffic was taken as a percent of that overall growth. This percent of growth attributable to new logistics trucks was

multiplied by the percent of deficiencies attributable to growth to find the percent of each deficiency specifically attributable to new logistics truck traffic. All these steps were done for both AM and PM peak hour traffic, then the peak hour with the higher percent attributable was selected to represent the link.

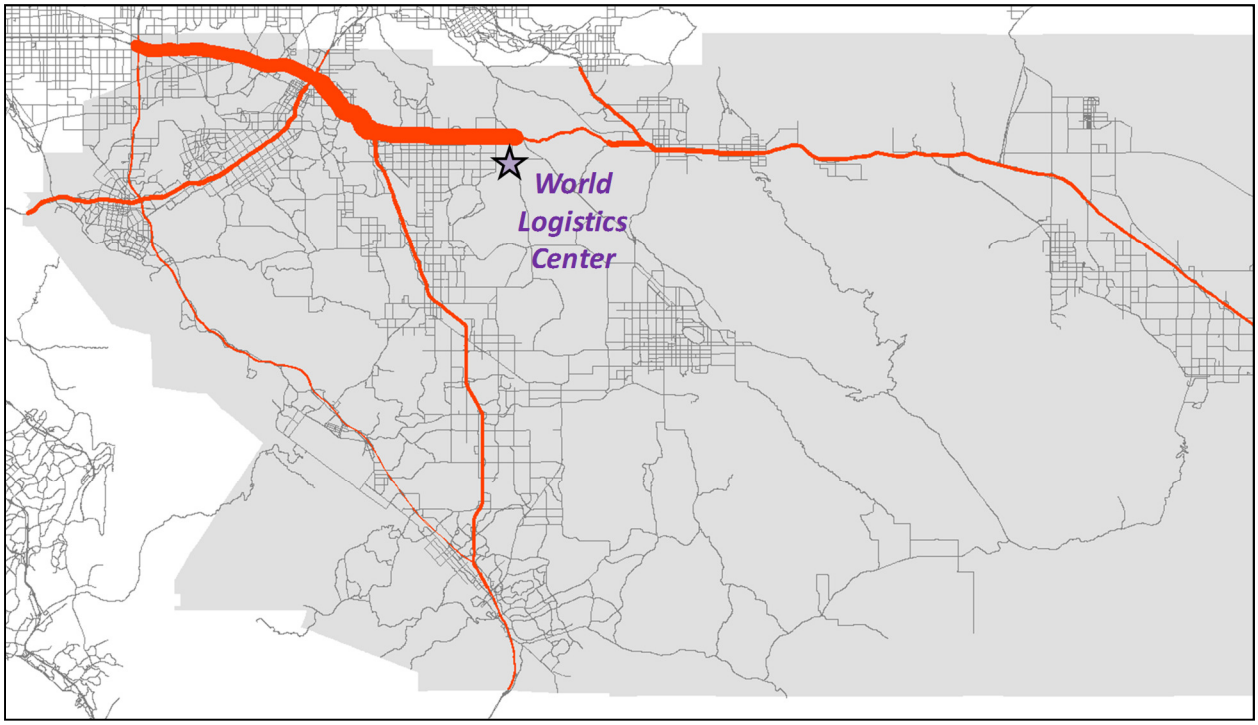


Figure 3-1: New Logistics Trucks in western Riverside County

3.3. IDENTIFYING PROJECTS

Links with new or increased deficiencies in either peak hour relative to existing conditions were identified as potential locations for improvement projects. Continuous sequences of model links were grouped into locations represented by a critical link for determining percent attributable to new logistics.

Table 3-1 shows the critical V/C ratios, deficiencies, and percent attributable for each project location. Figure 3-2 visually represents the components of traffic (existing, non-logistics growth, and logistics growth) relative to the capacity for each project location. For example, existing demand is less than capacity at project 4, so there is no existing deficiency. Therefore, the deficiency that is expected to appear by 2040 is entirely attributable to new development. At project 5, the existing demand exceeds capacity, and growth increases the deficiency. Figure 3-3 shows the project locations on a map.

Table 3-1: Deficient Segment Locations and Percent Attributable

Project ID	Route Name	Dir	Critical Segment		2016 GP Lanes on Critical Segment	Critical V/C ratio				Percent Deficiency Attributable to New Development		New Logistics Trucks as Percent of 2016 to 2040 Growth		Percent Deficiency Attributable to New Logistics Trucks by Peak Hour		Percent Deficiency Attributable to New Logistics Trucks
			Start	End		2016 AM V/C	2016 PM V/C	2040 AM V/C	2040 PM V/C	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
						(A)		(B)		(C) = 100%, for (A) < 1.0 and (B) > 1.0 (C) = [(B)-(A)]/[(B)-1], for (A) > 1.0		(D)		(E) = (C) * (D)		(F) = Max (E)
1	I-15	NB	SR-79 S	Rancho California Rd	4	0.35	0.66	0.52	1.01	No Deficiency	100%	1.2%	0.7%	No Deficiency	0.7%	0.7%
			Rancho California Rd	Winchester Rd	4	0.45	0.74	0.60	1.01	No Deficiency	100%	1.4%	0.7%	No Deficiency	0.7%	0.7%
2	I-15	NB	Winchester Rd	Lane Add south of I-15/I-215 Split	4	0.46	0.79	0.58	1.02	No Deficiency	100%	2.3%	0.9%	No Deficiency	0.9%	0.9%
3	I-15	NB	Clinton Keith Rd	Baxter Rd	3	0.52	0.80	0.65	1.03	No Deficiency	100%	1.1%	0.3%	No Deficiency	0.3%	0.3%
4	I-15	NB	El Cerrito Rd	Ontario Ave	3	0.86	0.90	1.03	0.88	100%	No Deficiency	1.1%	100.0%	1.1%	No Deficiency	1.1%
5	I-15	NB	Norco Dr/6th Street	Limonite Ave	3	0.82	1.10	0.87	1.14	No Deficiency	29%	4.1%	2.5%	No Deficiency	0.7%	0.7%
6	I-15	SB	Cantu Galeano Ranch Rd	Limonite Ave	3	0.77	0.96	0.77	1.02	No Deficiency	100%	100.0%	4.3%	No Deficiency	4.3%	4.3%
			Limonite Ave	Norco Dr/6th Street	3	0.87	1.01	0.90	1.04	No Deficiency	88%	4.7%	5.9%	No Deficiency	5.2%	5.2%
7	I-15	SB	El Cerrito Rd	Dos Lagos Dr	3	0.65	0.92	0.61	1.03	No Deficiency	100%	100.0%	2.2%	No Deficiency	2.2%	2.2%
8	I-15	SB	Temescal Canyon Rd	Indian Truck Trail	3	0.61	0.83	0.56	1.01	No Deficiency	100%	100.0%	1.4%	No Deficiency	1.4%	1.4%
9	SR-60	EB	Rubidoux Blvd	Market St	3	0.84	0.95	0.81	1.03	No Deficiency	100%	100.0%	30.9%	No Deficiency	30.9%	30.9%
			Market St	Main St	3	0.87	1.00	0.82	1.06	No Deficiency	100%	100.0%	39.0%	No Deficiency	39.0%	39.0%
10	I-215	NB	Box Springs Rd	Central Ave	4	0.94	1.08	1.09	1.07	100%	0%	14.3%	100.0%	14.3%	0.0%	14.3%
			Watkins Dr	Martin Luther King Jr	4	0.94	1.05	1.12	1.16	100%	66%	24.8%	57.9%	24.8%	38.4%	38.4%
10c	I-215	NB	University Ave Off-Ramp	Upstream of Univ Ave On-ramp	3	0.90	1.04	0.98	1.04	No Deficiency	13%	26.9%	100.0%	No Deficiency	13.3%	13.3%
11	I-215	NB	Center St Off-Ramp	Riverside County Line/Iowa Ave	3	0.79	1.00	0.79	1.03	No Deficiency	97%	91.5%	12.2%	No Deficiency	11.8%	11.8%
12	I-215	SB	Martin Luther King Jr	Sycamore Canyon Rd	4	0.96	1.13	1.07	1.25	100%	50%	57.1%	55.2%	57.1%	27.7%	57.1%
13	I-215	SB	Van Buren Blvd	Harley Knox Blvd	3	0.67	0.95	0.64	1.06	No Deficiency	100%	100.0%	4.4%	No Deficiency	4.4%	4.4%
14	SR-91	NB	Riverside County Line	Green River Rd Off-Ramp	5	0.89	1.18	0.76	1.23	No Deficiency	23%	100.0%	6.1%	No Deficiency	1.4%	1.4%
			Green River Rd Off-Ramp	SR-71	5	0.79	1.01	0.72	1.02	No Deficiency	69%	100.0%	14.1%	No Deficiency	9.8%	9.8%
			SR-71	Serfas Club Dr Off-Ramp	4	0.92	1.17	0.85	1.27	No Deficiency	36%	100.0%	4.1%	No Deficiency	1.5%	1.5%
15	SR-91	NB	Serfas Club Dr Off-Ramp	Grand Blvd Off-Ramp	4	0.85	1.00	0.80	1.03	No Deficiency	100%	100.0%	8.9%	No Deficiency	8.9%	8.9%
16	SR-91	NB	On-Ramp from SB I-15	On-Ramp from NB I-15	3	0.81	1.03	0.76	1.07	No Deficiency	55%	100.0%	13.6%	No Deficiency	7.5%	7.5%
17	SR-91	NB	McKinley St Off-Ramp	Pierce St	3	0.81	0.98	0.76	1.02	No Deficiency	100%	100.0%	10.1%	No Deficiency	10.1%	10.1%
18	SR-91	NB	Magnolia Ave	La Sierra Ave	3	0.76	0.93	0.69	1.00	No Deficiency	100%	100.0%	8.3%	No Deficiency	8.3%	8.3%
19	SR-91	SB	Serfas Club Dr Off-Ramp	Lane Add at SR-71	4	0.97	1.08	1.05	1.01	100%	0%	2.8%	100.0%	2.8%	0.0%	2.8%
			Lane Add at SR-71	Riverside County Line	5	0.92	1.00	1.02	0.91	100%	No Deficiency	1.8%	100.0%	1.8%	No Deficiency	1.8%

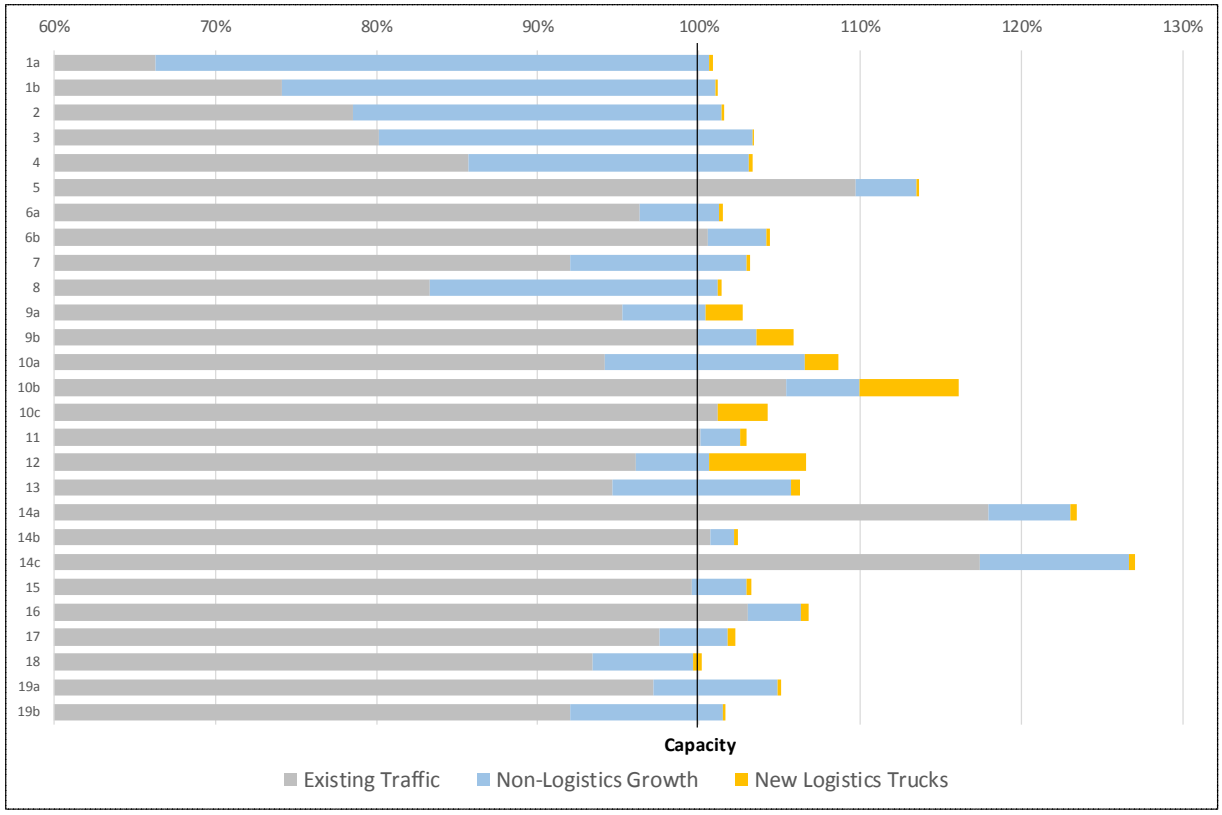


Figure 3-2: Components of 2040 Traffic Demand as a Percentage of Capacity

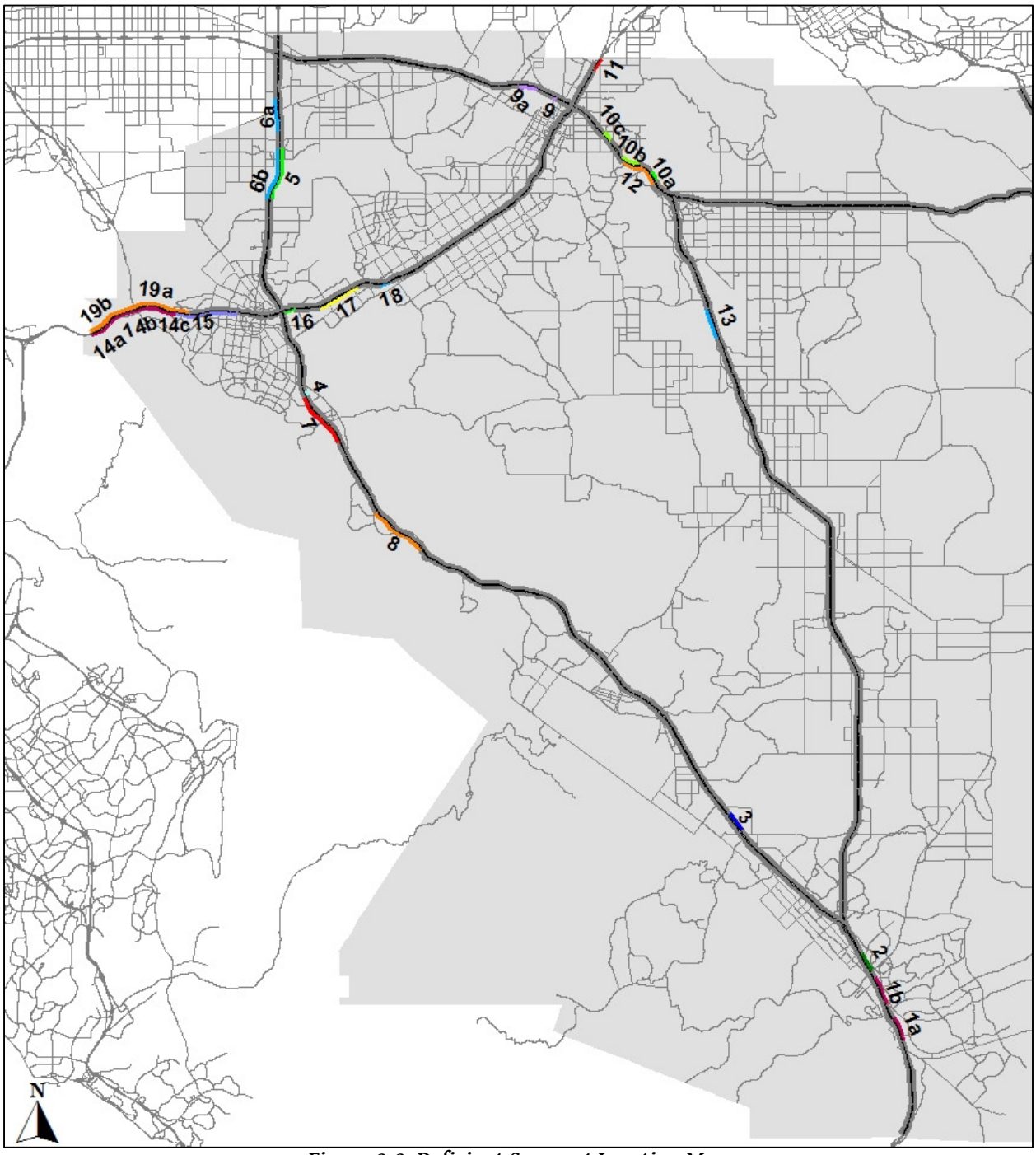


Figure 3-3: Deficient Segment Location Map

4. ESTIMATING FREEWAY PROJECT COSTS

4.1. ASSESSING PROJECT LIMITS

Section 2 of this memorandum described how future capacity deficiencies on the freeway network in Riverside County were identified. The findings of this effort were summarized as a list of directional freeway segments where the future demand exceeded capacity and resulted in a bottleneck in the system. Limiting capacity expansion to the specific identified segment would be expected mitigate the bottleneck in that segment, however it is likely that the bottleneck would be moved to the next adjacent segment without alleviating the capacity deficiency. Therefore, the list of deficient segments was reviewed in relation to the traffic data and the physical characteristics of the existing freeway facility to determine the extent of the improvement projects that would be necessary (i.e. to define the practical limits and logical termini for the associated improvement project) to address the actual operational problem, not just the specific upstream bottleneck location.

At each freeway segment identified as having a capacity deficiency, the traffic data was reviewed to determine the location (typically an off-ramp) where the demand along the corridor was reduced enough to no longer exceed the capacity of the freeway mainline. Other considerations were physical characteristics of the freeway that might also contribute to capacity reduction, such as uphill grades where truck lanes would benefit the operation of the freeway, and system interchanges where demand changed substantially and there were opportunities for lane drops at freeway-to-freeway connectors. The practical limits of each of the 19 projects required to mitigate the deficient segments are listed in Table 4-1.

Table 4-1: Practical Limits of Capacity Deficient Segment Improvement Projects

ID	Route Name	Dir	Beginning	End
1	I-15	NB	SR-79 S	Rancho California Rd
			Rancho California Rd	Winchester Rd
2			Winchester Rd	Lane Add south of I-15/I-215 Split
3			Clinton Keith Rd	Baxter Rd
4			El Cerrito Rd	Ontario Ave
5			Norco Dr/6th St	Limonite Ave
6		SB	Cantu Galeano Ranch Rd	Limonite Ave
			Limonite Ave	Norco Dr/6th
7			Cajalco Rd	Indian Truck Trail
8			El Cerrito Rd	Cajalco Rd
9	SR-60	EB	Rubidoux Blvd	Market St
			Market St	Main St
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr

ID	Route Name	Dir	Beginning	End
			Central Ave/Watkins	Martin Luther King
10c			Martin Luther King Blvd	SR-91
11			Center St Off-Ramp	Riverside County Line/Iowa
12		SB	Martin Luther King Jr	Sycamore Canyon Rd
13			Van Buren Blvd	Case Rd
14	SR-91	EB	Riverside County Line	Green River Rd Off-Ramp
			Green River Rd Off-Ramp	SR-71
			SR-71	Serfas Club Dr Off-Ramp
15			Serfas Club Dr Off-Ramp	Grand Blvd Rd Off-Ramp
16			On-Ramp from SB-I-15	On Ramp from NB- I-15
17			McKinley St Off Ramp	Pierce St
18			Pierce St	Magnolia St
19		WB	Serfas Club Dr Off-Ramp	Lane Add at SR-71
			Lane Add at SR-71	Riverside County Line

The limits of one project, Number 13, were slightly ambiguous based on the review of traffic and physical features, as well in consideration of the proximity of future warehousing and logistics development activity. For these reasons, Project 13 was presented with two options – from Van Buren Boulevard to D Street and from Van Buren Boulevard to Case Road – and cost estimates were prepared for each option so that the Study Advisory Team could assess the value of each option separately and determine which option adequately addressed the capacity constraint. The Study Advisory Team, at the meeting held on February 22, 2018, recommended Option 2 be advanced for the purposes of the study.

4.2. Review of Currently Funded/Programmed Improvements

Once the practical limits of the improvements were defined, each project was compared to known, funded/programmed projects that were recently completed (and are not included in the SCAG 2016 Model existing network), are currently under construction, or are currently in development and are funded for construction. There are three projects that are within the study area that were identified as meeting these criteria:

- The I-15/French Valley Parkway Interchange Project, Phases 1 and 2
- The I-15 Express Lane Project
- The SR-91 Express Lane Extension Project

The French Valley Parkway Project includes the implementation of the I-15/French Valley Parkway Interchange as well as improvements to the Winchester Road Interchange and a

collector-distributor road system along I-15 between Winchester Road and the I-15/I-215 system interchange. This project adds as many as three lanes in each direction north of Winchester Road. Based on the Preferred Alternative Layout Plans included in the IS/EA (January 2010), the FVP Phasing Exhibit (December 2, 2015) and the Ultimate Project Exhibit (July 12, 2017), it was determined that the French Valley Parkway Project successfully eliminates the need to further mitigate deficient segment 2.

The I-15 Express Lane Project will implement one or two tolled managed lanes in each direction northbound and southbound between Cajalco Road and SR-60. This project also adds general purpose lanes and auxiliary lanes at specific locations. Based on a review of the I-15 Express Lane Project Tolling Concept Plans (June 21, 2017), the I-15 Express Lane Project successfully eliminates the need to further mitigate deficient segments 4, 5, and 6.

The SR-91 Express Lane Extension Project extends from west of the Orange County Line to east of I-15 both eastbound and westbound. In addition to the tolled express lanes, additional general purpose lanes were also constructed as part of this project. Based on a field review of the project as it has been constructed, the SR-91 Express Lane Extension Project successfully eliminates the need to further mitigate deficient segments 14, 15, 17, and 19.

Table 4-2 lists the remaining deficient segments and associated mitigation projects that would be included as the basis for the logistics fee program.

Table 4-2: Capacity Deficient Segment Improvement Projects to be Included in the Fee Program

ID	Route Name	Dir	Beginning	End
1	I-15	NB	SR-79 S	Rancho California Rd
			Rancho California Rd	Winchester Rd
3			Clinton Keith Rd	Baxter Rd
7		SB	Cajalco Rd	Indian Truck Trail
8			El Cerrito Rd	Cajalco Rd
9	SR-60	EB	Rubidoux Blvd	Market St
			Market St	Main St
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr
			Central Ave/Watkins	Martin Luther King
10c			Martin Luther King Blvd	SR-91
11			Center St Off-Ramp	Riverside County Line/Iowa
12		SB	Martin Luther King Jr	Sycamore Canyon Rd
13			Van Buren Blvd	Case Rd
16	SR-91	EB	On-Ramp from SB-I-15	On Ramp from NB- I-15
18			Pierce St	Magnolia St

4.3. Development of Project Concepts

Using scalable, georeferenced aerial photography, project concept plans were developed that show the primary quantifiable cost items for each project, including:

- Right-of-Way Impact
- Retaining Walls
- Freeway Mainline Widening
- Structure Construction
- Ramp Realignment
- Roadway Excavation
- Street Improvements
- Signalization

The concept plans show colored lines and areas that can be measured and used to estimate quantities for the various categories of construction or property acquisition. These project concept drawings were reviewed by the Study Advisory Team to confirm that they reasonably represent the minimum improvements necessary to mitigate the identified deficiency.

The resultant improvement concept plans are included in Appendix A of this technical memorandum.

4.4. Project Cost Estimating

For the initial assessment and development of project concept plans, Google Earth was used to determine existing conditions for the corridors. The conditions recorded include number of lanes, width of pavement, HOV lanes, inside (left) shoulder width, outside (right) shoulder width, assumed right-of-way boundary, freeway structures, ramp locations, major drainage facilities, retaining walls, sounds walls, signage, and signals. All widths and lengths provided were obtained by doing desktop research on Google Earth and limited field reviews, and were based on sound engineering judgement.

The unit costs for the various construction components were taken from the Caltrans cost database and other recent project cost estimates for project of similar scale and scope within the Inland Empire. Right-of-way cost per residential unit and per square foot are based on current property valuations in Riverside County.

Roadway Item Costs

- Roadway costs include PCC pavement, tie-back walls, pavement markings and markers and replacement of signs. Unit costs were extrapolated from a similar freeway construction project.

- The quantity of each component was then multiplied by the unit cost to produce a cost item for the roadway component.

Drainage Item Costs

- Per our initial assessment, widening affects the existing drainage. Further analysis is needed as impacts to drainage can increase the costs.
- The costs associated with the potential impacts to drainage are 15% of the roadway items cost.

Specialty Item Costs

- Specialty item costs include retaining walls due to proposed widening, removal of existing retaining walls, sounds wall replacement, tie back walls and ramp adjustments.
- The quantity of each component was then multiplied by the unit cost to produce a cost item for the specialty item costs.

Minor Items Costs

- Minor items can include anything from ADA items to other minor items that are not considered high costs items. Typical Caltrans value is 5-10%.

Mobilization Costs

- Mobilization includes costs incurred due to mobilization of personnel and equipment as well as pre-construction expenses. Typical value of 10% can be adjusted when actual costs are available.

Roadway Additions

- Roadway addition items can include price index fluctuations, value analysis, maintaining traffic, removal of rock and debris, etc. These supplemental items cover work for items that cannot be quantified as contract bid item. All roadway supplemental items would be within the FHWA approved items list. At this stage it is appropriate to assume there will be supplemental items. Typical Caltrans value is 5-10%.

Contingency

- Contingency of 25% is within Caltrans recommended values. Pre-PSR 30%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10% and final PS&E is 5%. Caltrans contingencies allow for unforeseen increases. Due to the level of detail and engineering available, the contingency percentage is appropriate. As more information becomes available, costs would be refined and contingency would be decreased. This is typical per Caltrans.

Support Costs

- Support costs are 35% of the capital outlay costs. Support costs include design costs, construction management, Caltrans reimbursed costs and Metro internal costs. These

costs are functional overhead costs not administrative overhead. The support costs can be refined as more information becomes available.

The costs presented are based on a conceptual engineering assessment using Google desktop research. All costs and impacts are based on a visual analysis and it should be noted that no detailed engineering or surveying has been done to verify the assumptions.

The proposed improvement project conceptual cost estimates were compared to the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program, with a focus on identifying arterial-freeway interchange and bridge projects that are also included in TUMF. The TUMF program assesses all development types, including warehouse and logistics uses, impact fees to mitigate the cumulative regional transportation impacts of new development on the arterial highway system, including arterial-freeway interchanges and bridges. As such, new warehouse and logistics uses are already contributing toward the cost of these improvement projects to the extent they are included in the TUMF program. Where the conceptual improvement projects were determined to include project elements that were also identified in the TUMF program, the conceptual cost estimate for the project was reduced by an amount equal to the lesser of the estimated conceptual cost of the relevant project element (i.e. the conceptual cost of the arterial interchange and/or bridge improvements) or the maximum eligible amount prescribed in the 2016 TUMF Nexus Study. This reduction in the conceptual improvement costs as part of this study eliminates overlap with the TUMF program in terms of the cost for implementing arterial interchange and bridge improvements necessary to accommodate the proposed freeway capacity expansion necessary to mitigate the cumulative regional impacts of new development, including warehousing and logistics uses, on the freeway network.

The resultant conceptual project cost estimates are summarized it

Table 4-3. A more detailed breakout of the conceptual project cost estimates to mitigate the deficient segments is included in Appendix B of this technical memorandum.

Table 4-3: Capacity Deficient Segment Improvement Project Conceptual Cost Estimates

ID	Route Name	Dir	Beginning	End	Cost Estimate
1	I-15	NB	SR-79 S	Rancho California Rd	$36,237,000
			Rancho California Rd	Winchester Rd	
3			Clinton Keith Rd	Baxter Rd	$7,406,000
7		SB	Cajalco Rd	Indian Truck Trail	$37,825,000
8			El Cerrito Rd	Cajalco Rd	$10,408,000
9	SR-60	EB	Rubidoux Blvd	Market St	$40,234,000
			Market St	Main St	
10	I-215	NB	Box Springs Rd	Central Ave/Watkins Dr	$26,513,000
			Central Ave/Watkins	Martin Luther King	
10c			Martin Luther King Blvd	SR-91	$55,081,000
11			Center St Off-Ramp	Riverside County Line/Iowa	$42,212,000
12		SB	Martin Luther King Jr	Sycamore Canyon Rd	$13,403,000
13			Van Buren Blvd	Case Rd	$95,365,000
16	SR-91	EB	On-Ramp from SB-I-15	On Ramp from NB- I-15	$7,611,000
18			Pierce St	Magnolia St	$13,040,000
Total Project Cost Estimate				**$385,335,000**	

5. FUNDING SOURCES AND FUNDING GAP

This section of the memorandum reviews transportation funding projections in existing documents and describes recent or anticipated additional sources that might be available to complete freeway[9] capacity expansion projects identified as part of this study. This analysis starts with a recent, comprehensive analysis of potential funding - the Riverside County Strategic Assessment – which is described in the next section. It takes the results of this assessment and uses similar assumptions to add in more recent funding sources, such as those associate with California Senate Bill (SB) 1.

The various funding sources are then assessed for their potential to fulfill identified project needs and costs described in Chapters 2 to 4 of this memorandum. The potential revenues and anticipated needs are then compared to conclude a gap analysis in the following chapter.

5.1. RIVERSIDE COUNTY STRATEGIC ASSESSMENT

In 2015, the RCTC directed its staff to conduct an assessment to assist the Commission in examining the County's need for transportation investments. The objective was to produce findings and recommendation on actions the Commission could take to proactively prepare for the future. In early 2016, the RCTC approved the Riverside County Strategic Assessment[10]. It considered demographics, state local, federal transportation policies and revenues and a survey of public and stakeholder perspectives. The assessment includes recommendations regarding future planning, asset maximization, increasing funding and communication.

The Strategic Assessment includes a detailed review of federal, state and local revenues through 2040.[11] [12] It looked at 37 different funding sources covering all modes and categorized them into three levels (A, B and C), depending on their level of certainty. Category A represents existing revenues that can be reasonably expected to be available in the future, Category B includes existing and programmed revenues that Riverside County might realistically secure on a discretionary or competitive basis and those in Category C are considered strategy revenues. Category C revenues represent the highest risk as they are contingent upon implementation of future legislation or funding mechanisms.

The Strategic Assessment conducted an analysis for the 24-year period from 2016-2039. It assumed that most programs continued with increases at the rate of inflation throughout this period, with noted exceptions[13]. It found that, of the total $23 billion in projected need, categories A and B left a funding gap of $16 billion. New revenues from Category C were only expected to cover $6 million of the need, leaving a $10 billion gap.

In looking more closely at funding by project type, the Strategic Assessment reviewed the following funding sources for freeways and interchanges:

[9] Arterial funding sources are not addressed in this analysis as there are separate fee mechanisms already in place for arterial projects.
[10] HDR, January 2016, Riverside County Strategic Assessment: Executive Summary, RCTC.
[11] Since the document was prepared in 2015, it did not include several recent funding sources, which are discussed later in this memo.
[12] HDR, November 4, 2015, RCTC Strategic Assessment Technical Memorandum: Task 4 Funding Gap Analysis.
[13] Ibid. Details of programs and assumptions are contained the tables 8-12 in the appendix to the technical memo.

Federal

- Congestion Mitigation and Air Quality (CMAQ)
- Regional Surface Transportation Program (RSTP)

State

- Regional Improvement Program (RIP)
- Interregional Improvement Program (IIP)
- Mileage Based User-Fees (MBUF)

Local

- Measure A
- SR 91 toll revenues
- I-15 Express Lane toll revenues
- Mid County Parkway (MCP) toll revenues

CMAQ and RSTP funds can go to various modes. The Strategic Assessment assumed that, while historically much of the CMAQ funds have gone to toll lanes, over time transit projects will receive a greater portion of the funding. It assumed that 30% of the CMAQ and 50% of RSTP funds will go to freeway projects in the future.

The Regional Improvement Program (RIP) is the largest funding source over which RCTC has programming authority. The State Transportation Improvement Program (STIP) is developed and approved by the California Transportation Commission (CTC) by April of every even year. Each county transportation agency in the state is responsible for programming projects on or off the state highway system with Regional Improvement Program (RIP) funds, which represent 75% of the total STIP funds available for project programming. Eligible projects include capital improvement projects (e.g. interchange improvements, freeway and arterial widening, commuter rail stations, etc.) and planning and rideshare activities.

The Strategic Assessment includes federal Highway Safety Improvement Program (HSIP) funds under arterials rather than freeways, although funds can be devoted to any public road. The HSIP requires a data-driven, performance based approach to improving highway safety. It provides a maximum of $10 million in federal funds on projects that reduce traffic fatalities and serious injuries and can be designed and constructed expeditiously.

Another fund that has been used on freeways but was not included in the Strategic Assessment is the State Highway Operation and Protection Program (SHOPP). SHOPP is the State's "fix-it-first" program that funds the repair and preservation of the State Highway System (SHS), safety improvements, and some highway operational improvements. While the Strategic Assessment did not address preservation and maintenance, the SHOPP is worth noting as it

protects the enormous investment that has been made over many decades to create and manage the approximately 50,000 lane-mile SHS. All projects funded by the SHOPP are limited to capital improvements that do not add capacity (no new highway lanes) to the SHS, although auxiliary lanes (including truck climbing lanes) are eligible for SHOPP funding. Revenues for the SHOPP are generated by federal and state gas taxes and are fiscally constrained by the State Transportation Improvement Program Fund Estimate (Fund Estimate) that is produced by Caltrans based on established criteria and adopted by the California Transportation Commission.

According to the Strategic Assessment, the total costs of freeway and interchange projects between 2016 and 2039 were expected to be $8.724 billion and the revenues are $5.326 billion. So, only 61% of the freeway needs are funded, leaving an unfunded gap of $3.326 billion through 2039. Table 5-1 shows the breakdown of funding by program and risk.

Table 5-1: Freeway Funding Program, Amount (in millions) and Risk

Funding Program	Category A	Category B	Category C
Federal			
Congestion Mitigation and Air Quality (CMAQ)	$219.7		
Regional Surface Transportation Program (RSTP)	$315.2		
State			
Regional Improvement Program (RIP)	$441.9		
Interregional Improvement Program (IIP)		$58.8	
Mileage Based User-Fees (MBUF)			$2,233.5
Local			
Measure A*	$915.7		
SR 91 Net Toll Revenues*	$618.5		
I-15 Express Lane Toll Revenues*	$319.7		
Mid County Parkway (MCP) toll revenues			$153.5
Total (2016-2039)	$2,880	$59	$2,387

*Debt service and operations and maintenance costs have been deducted from these amounts.

The Strategic Assessment points out that funds for freeway and interchanges rely most heavily on the highest risk (Category C) funding sources. So, of the funding that was anticipated for

freeways and interchanges, fully 67% was from Category C. As shown in Table 5-1, a large portion of the Category C funds are from MBUF and tolled-based financing of the MCP.

The Assessment also noted that Measure A programs are further suballocated to additional geographies and programs. For example, while the majority appears to be allocated to freeways, there are specific suballocations to counties and, within those, to various modal programs. While the majority of the amount apportioned to freeways falls within the western part of the County, some is dedicated to Coachella Valley. We have not completed further disaggregation based on geography for this analysis.

Because the assessment was prepared in 2015 it did not include certain funding sources approved after that. New funding sources and their potential implications are described in the following sections.

5.2. Fixing America's Surface Transportation Act

On December 4, 2015 President Obama signed Fixing America's Surface Transportation Act (FAST) Act[14] into law. It was the first law enacted in over ten years that provides long-term funding certainty for surface transportation. The FAST Act allows states and local governments greater confidence in federal funding for transportation projects.

Overall, the FAST Act largely maintains program structures and funding shares between highways and transit. It was viewed as a down-payment for building a 21st century transportation system.

The law also makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects. The relevant funding programs are described below. The funding implications of all FAST Act funding programs on RCTC are discussed at the end of this section.

5.2.1. Nationally Significant Freight and Highway Projects

The Nationally Significant Freight and Highway Projects (NSFHP) program[15] provides financial assistance—competitive grants, known as INFRA grants, or credit assistance—to nationally and regionally significant freight and highway projects. Funding is $800 million to $1 billion annually over the program life. Both large (over $100 million) and small (more than $5 million) projects are eligible, but 90% of program funds are reserved for large projects.

Projects must support the national program goals to:

- improve the safety, efficiency, and reliability of the movement of freight and people;
- generate national or regional economic benefits and an increase in global economic competitiveness of the U.S.;
- reduce highway congestion and bottlenecks;
- improve connectivity between modes of freight transportation;

[14] Pub. L. No. 114-94
[15] FAST Act § 1105; 23 U.S.C. 117

- enhance the resiliency of critical highway infrastructure and help protect the environment;
- improve roadways vital to national energy security; and
- address the impact of population growth on the movement of people and freight.

Both highway and freight projects - including rail intermodal projects, grade crossings and rail and port projects – are eligible. Highway projects must be either on the NHS or the National Highway Freight network. Funding for non-highway freight projects is limited to $500 million over the life of the program.

Funding may go to any project phase including planning, construction, and operational improvements. However, the project must have completed preliminary engineering and be reasonably expected to begin construction within 18 months of obligation of funds.

States, MPOs, local governments, public authorities, political subdivision, tribal governments and groups of these entities may apply. The program encourages the use of nontraditional financing, innovative design and construction techniques, innovative technologies, and non-Federal contributions as well as geographic diversity among grant recipients. Non-federal funding commitments, however, must be backed by contingency and have additional stable and dependable sources of funding to construct operate and maintain and operate the project.

Projects must:

- generate national or regional economic, mobility, or safety benefits;
- be cost effective;
- contribute to the accomplishment of one or more of the national goals

5.2.2. Advanced Transportation and Congestion Management Technologies Deployment Program

The Advanced Transportation and Congestion Management Technologies Deployment Program[16] makes competitive grants for the development of model deployment sites for large scale installation and operation of advanced transportation technologies that improve safety, efficiency, system performance, and infrastructure return on investment.

Program funding totals $60 million annually. The federal share cannot exceed 50% of the cost of the project.

Eligible projects include deployment of advanced transportation and congestion management technologies, such as:

- advanced traveler information systems;
- advanced transportation management technologies;
- infrastructure maintenance, monitoring, and condition assessment;
- advanced public transportation systems;

[16] FAST Act § 6004; 23 U.S.C. 503(c)(4)

- transportation system performance data collection, analysis, and dissemination systems;
- advanced safety systems, including vehicle-to-vehicle and vehicle-to-infrastructure communications;
- technologies associated with autonomous vehicles, and other collision avoidance technologies, including systems using cellular technology;
- integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems;
- electronic pricing and payment systems; or
- advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals.[17]

5.2.3. Surface Transportation System Funding Alternatives Program

The Surface Transportation System Funding Alternatives Program[18] provides grants to States or groups of States to demonstrate user-based alternative revenue mechanisms that utilize a user fee structure to maintain the long-term solvency of the Highway Trust Fund.

The objectives of the program are:

- to test the design, acceptance, and implementation of two or more future user-based alternative mechanisms;
- to improve the functionality of the user-based alternative revenue mechanisms;
- to conduct outreach to increase public awareness regarding the need for alternative funding sources for surface transportation programs and to provide information on possible approaches;
- to provide recommendations regarding adoption and implementation of user-based alternative revenue mechanisms; and
- to minimize the administrative cost of any potential user-based alternative revenue mechanisms.

A total of $20 million is available annually. The Federal share of the cost of an activity carried out under the program may not exceed 50 percent. Geographic diversity will be considered in award of grants.

Program funds will test the design, acceptance, and implementation of a user-based alternative revenue mechanism, consistent with the program's objectives. Revenue collected through a user-based alternative revenue mechanism established with program funds may not be considered a toll under 23 U.S.C. 301. Because of the program's limitations and focus on testing, no estimates have been included among the funds available for freeway projects in this analysis.

[17] 23.U.S.C. 503(c)(4)(E)
[18] FAST Act § 6020

5.2.4. FAST Act Funding Implications for RCTC

As described in the previous section, the FAST Act provided two new grant programs – NSFHP and the Advanced Technology and Congestion program – that could reasonably be relied upon to provide funding for freeway and interchange projects in Riverside County. As stated previously, this analysis took similar assumptions as the Strategic Assessment. In the Assessment, RCTC assumed that it could win competitive grants commensurate with the proportion its population represents. For federal grants, Riverside County represented .74 percent of the national population[19]. Table 5-2 shows the new FAST funding amounts by program and risk category that could reasonably be expected to be available to RCTC each year based on this proportion of total program funding:

Table 5-2: Projected Annual RCTC Funding from FAST (in millions)

Funding Program	Category A	Category B	Category C
NSFHP (INFRA)		$6.66	
Advanced Technology and Congestion Management Deployment Program		$.444	
Total		$7.104	

5.3. Road Repair and Accountability Act of 2017 (Senate Bill 1)

In 2017 the California legislature passed and the governor signed into law a major transportation funding bill.[20] The Road Repair and Accountability Act of 2017 (referred to as SB1) provided additional funding to several existing programs, including the STIP, and established several new funding programs that are relevant to this project. The relevant SB1 programs and their implications for RCTC are described below.

5.3.1. Trade Corridor Enhancement Program

The objective of the Trade Corridor Enhancement Program is to fund infrastructure improvements on federally designated Trade Corridors of National and Regional Significance, on the Primary Freight Network, as identified in the California Freight Mobility Plan, and along other corridors that have a high volume of freight movement as determined by the Commission.[21] The Trade Corridor Enhancement Program is also intended to support the goals of the National Highway Freight Program, the California Freight Mobility Plan, and the guiding principles in the California Sustainable Freight Action Plan.

[19] https://www.census.gov/quickfacts/fact/table/riversidecountycalifornia,US/PST045216

[20] http://catc.ca.gov/
[21] http://catc.ca.gov/programs/sb1/tcep/

The Commission intends to allocate $1.3 Billion, in roughly equal annual installments, in the initial three-year program. Allocations are anticipated to continue after 2020, but the amounts aren't known. The initial program is funded by three years of Trade Corridor Enhancement Account funding ($794 million), five years of federal National Highway Freight Program funding ($535 million) and a one-time appropriation of $11 million the Budget Act of 2015. Caltrans is targeted to receive 40% for projects it applies for administers.

Funding is available for projects that significantly contribute to the freight system's economic activity or vitality; relieve congestion on the freight system; improve the safety, security, or resilience of the freight system; improve or preserve the freight system infrastructure; implement technology or innovation to improve the freight system or reduce or avoid its negative impacts; or reduce or avoid adverse community and/or environmental impacts of the freight system. Qualifying project costs include permits and environmental studies; plans, specifications and estimates; right-of-way; and construction.

The Commission has already identified the following corridors as eligible under this program: Bay Area, Central Valley, Central Coast, Lost Angeles/Inland Empire and San Diego/Border. Other regions are eligible to apply if they have a high volume of freight movement and otherwise meet the criteria for funding. The initial target for the Los Angeles/Inland Empire (which includes Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties) is $467 million.

Eligible applicants include local, regional, and public agencies such as cities, counties, Metropolitan Planning Organizations, Regional Transportation Planning Agencies, port authorities, public construction authorities, and Caltrans. Project proposals from private entities must be submitted by a public agency.

Projects will first be screened to ensure they: meet the project eligibility requirements and program objectives, are in an adopted RTP that is consistent with regional greenhouse gas emissions reductions targets, demonstrate that negative environmental/community impacts will be mitigated and will stimulate economic activity and jobs. High scoring projects will be evaluated on freight system factors (throughput, velocity and reliability), transportation system factors (safety, congestion reduction, bottleneck relief, multi-modal strategy, interregional benefits, advanced technology) and community impact factors (air quality impact, community impact mitigation, economic/jobs growth).

5.3.2. Solutions for Congested Corridors Program

Solutions for Congested Corridors Program[22] (Congested Corridors Program) appropriates two hundred and fifty million dollars ($250,000,000) annually to projects designed to achieve a balanced set of transportation, environmental, and community access improvements within highly congested travel corridors throughout the state. The primary objective of the Congested Corridors Program is to fund projects that make specific improvements and are part of a comprehensive corridor plan designed to reduce congestion in highly traveled corridors by providing more transportation choices while preserving the character of the local community and creating opportunities for neighborhood enhancement projects.

[22] http://catc.ca.gov/programs/sb1/sccp/

Funds are allocated by the California Transportation Commission (Commission). Improvements may be on the state highway system, local streets and roads, public transit facilities, bicycle and pedestrian facilities or required mitigation or restoration or some combination thereof.

A regional transportation planning agency or county transportation commission or authority responsible for preparing a regional transportation improvement plan under Section 14527 of the Government Code or Caltrans may nominate projects for funding.

5.3.3. Local Partnership Program

The Local Partnership Program (LPP) appropriates two hundred million dollars ($200,000,000) annually to local or regional transportation agencies that have sought and received voter approval of taxes or that have imposed fees that are dedicated solely for transportation improvements. [23]

Funds are allocated by the California Transportation Commission (Commission) - half competitively and the balance by formula. Projects will require at least a one-to-one match of private, local, federal, or state funds except jurisdictions with a voter approved tax or fee which generates less than $100,000 annually need only provide a match equal to 50% of the requested funds.

Eligible projects include: (a) improvements to the state highway system; (b) improvements to transit facilities; (c) acquisition, retrofit, or rehabilitation of rolling stock, buses, or other transit equipment; (d) improvements to the local road system; (e) improvements to bicycle or pedestrian safety or mobility; (f) improvements to mitigate the environmental impact of new transportation infrastructure on a locality's or region's air quality or water quality; (g) a separate phase or stage of construction for an eligible project may include mitigation of the project's environmental impacts; (h) sound walls for certain freeways; (i) road maintenance and rehabilitation; and (j) other transportation improvement projects.

Eligible applicants are the taxing authorities that have sought and received voter approval of taxes, tolls, or fees, or that have imposed fees, including uniform developer fees as defined by subdivision (b) of Section 8879.67 of the Government Code, which are dedicated solely to transportation improvements.

The Commission will give higher priority to projects that (a) are more cost-effective; (b) can commence construction or implementation earlier; (c) can leverage more committed funds per program dollar; (d) can demonstrate quantifiable air quality improvements, including a significant reduction in vehicle-miles traveled; (e) can demonstrate regional and community project support; and (f) within a Metropolitan Planning Organization, projects that further the implementation of the sustainable communities strategy.

5.3.4. SB1 Funding Implications for RCTC

Most of the SB1 funds that could go to freeways and interchanges are via competitive grant programs. In 2016, Riverside County represented about six percent of the population in the

[23] http://catc.ca.gov/programs/sb1/lpp/

state.[24] Assuming, on average, transportation projects are awarded approximately proportionate to county population, Table 5-3 shows the projected annual allocation projects in Riverside County could reasonably be expected to obtain.

Table 5-3: Projected Annual SB1 Funding for RCTC (in millions)

Funding Program	Category A	Category B	Category C
LPP (county allocation)	$6.786		
TCEP		$25.997	
SCCP		$15	
LPP (competitive grant)		$6.786	
	$6.786	$47.783	

5.4. Summary of Available Funding from All Sources

To quantify the total funds that might be available to freeway and interchange projects in Riverside County through 2040, sources identified in the Strategic Assessment were combined those from FAST and SB1 programs. Taking the approach used in the Strategic Assessment, unless otherwise specific, program funding levels were assumed to continue at the rate of inflation throughout the study period. Table 5-4 summarizes newly identified funding sources, while Table 5-5 combines new funding sources with those identified previously as part of the Strategic Assessment to establish a total of anticipated freeway project funding through 2040 from all sources by risk category.

[24] https://www.census.gov/quickfacts/fact/table/riversidecountycalifornia,US/PST045216

Table 5-4: Freeway Project Funding from New Sources 2017-2040 (in millions)

Funding Program	Category A	Category B	Category C
Federal			
NSFHP (INFRA)		$159.8	
Advanced Technology and Congestion Management Deployment Program		$10.7	
State			
LPP (County Allocation)	$162.9		
TCEP		$623.9	
SCCP		$360	
LPP (competitive grants)		$162.9	
Grand Total New Sources	$162.9	$1,317.3	

Table 5-5: RCTC Projected Freeway Project Funding 2017-2040 - All Sources (in millions)

Funding Source	Category A	Category B	Category C
Total Strategic Assessment Sources	$2,948.6	$61	$2,465.8
Total New Sources	$162.9	$1,317.3	
Grand Total Old and New Sources	$3111.5	$1,378.3	$2,465.8

As can be seen in Table 5-4 and Table 5-5, the infusion of SB1 funds, which are considered risk category B, creates better balance across the risk categories than that found in the Strategic Assessment, which was heavily reliance on high-risk, category C funds. However, although the SB1 program has been legislated there is also an on-going repeal effort, hence they have been identified as risk category B rather than category A.

A sensitivity analysis was completed to assess the impact of a potential repeal on future transportation funding in the County. Table 5-6 shows the projected funds for freeway and interchange projects from all sources without SB1 funds.

Table 5-6: Projected RCTC Projected Freeway Project Funds without SB1, 2017-2040 (millions)

Funding Source	**Category A**	**Category B**	**Category C**
Total Strategic Assessment Sources	$2,948.6	$61	$2,465.8
Total New Sources	$162.9	$170.5	
Grand Total Old and New Sources	$3111.5	$231.5	$2,465.8

Table 5-7 shows the total funding that is expected to be available for freeway and related interchange projects in Riverside County over the next 24 years. As can be seen, the total projected funding that might reasonably be expected to be available for freeway and interchange projects in Riverside County through 2040 is expected to be nearly $6 billion, with approximately half of this funding expected to be made available through low risk category A funding sources, even without SB1 funding. This amount substantially exceeds the estimated cost to complete the various mitigation projects previously identified in Chapter 4 and summarized in

Table 4-3 of this report making the various improvement projects viable to be completed, even following the adjustment of funds to be generated through a potential logistics fee program to account for the portion of impact attributable to logistics uses.

Table 5-7: Projected RCTC Funding with and without SB1, 2017-2040 (in millions)

Scenario	Total Funding
With SB1	$6,955.6
Without SB1	$5,808.8

6. FUNDING GAP ANALYSIS

As described in Chapters 3, the fair share of costs to mitigate future freeway deficiencies that are attributable to new warehousing and logistics uses varies by segment, but is a relatively small proportion of the total cost to complete the necessary improvements. Furthermore, although the project concepts associated cost estimates have identified a minimum level of improvement necessary to reasonably mitigate the identified impact, it is likely the scale and scope of any proposed improvement project would be greater to account for the accomplishment of other transportation goals and/or freeway operational needs, including rehabilitation and roadway maintenance, resolution of existing needs, or anticipation of addition future demands beyond the horizon year of the fee program. Since the resolution of these items cannot be fairly attributed to the mitigation of new development impacts, it is necessary to ensure that sufficient alternative funding sources are expected to be available to complete the necessary improvements.

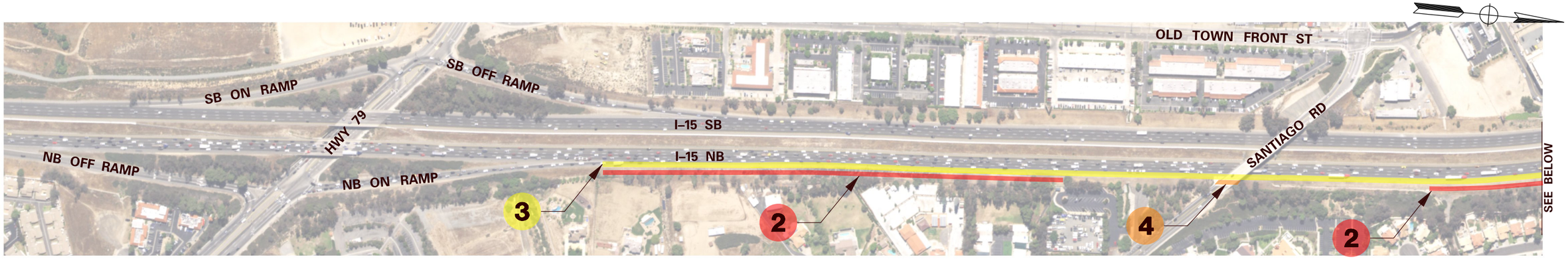
The total estimated conceptual cost to complete the reasonable mitigation of deficient segments identified as part of this study is $385,335,000. Although a relatively small proportion of this cost can be attributed to new warehousing and logistics developments, and therefore this fair share of the mitigation cost could be derived from a logistics impact fee, the estimates of alternative funding sources described in Chapter 5 clearly indicate that the remaining costs to complete these improvement projects could reasonably be expected to be obtained from existing and proposed funding sources. Furthermore, the projected availability of future funding for freeway and interchange improvement projects is over ten times the amount of the conceptual cost estimates to mitigate the impacts of new development on the freeway system indicating that sufficient funding might reasonably be expected to account for the expansion of scale and scope of associated freeway projects to address other project needs not directly attributable to the impacts of new development.

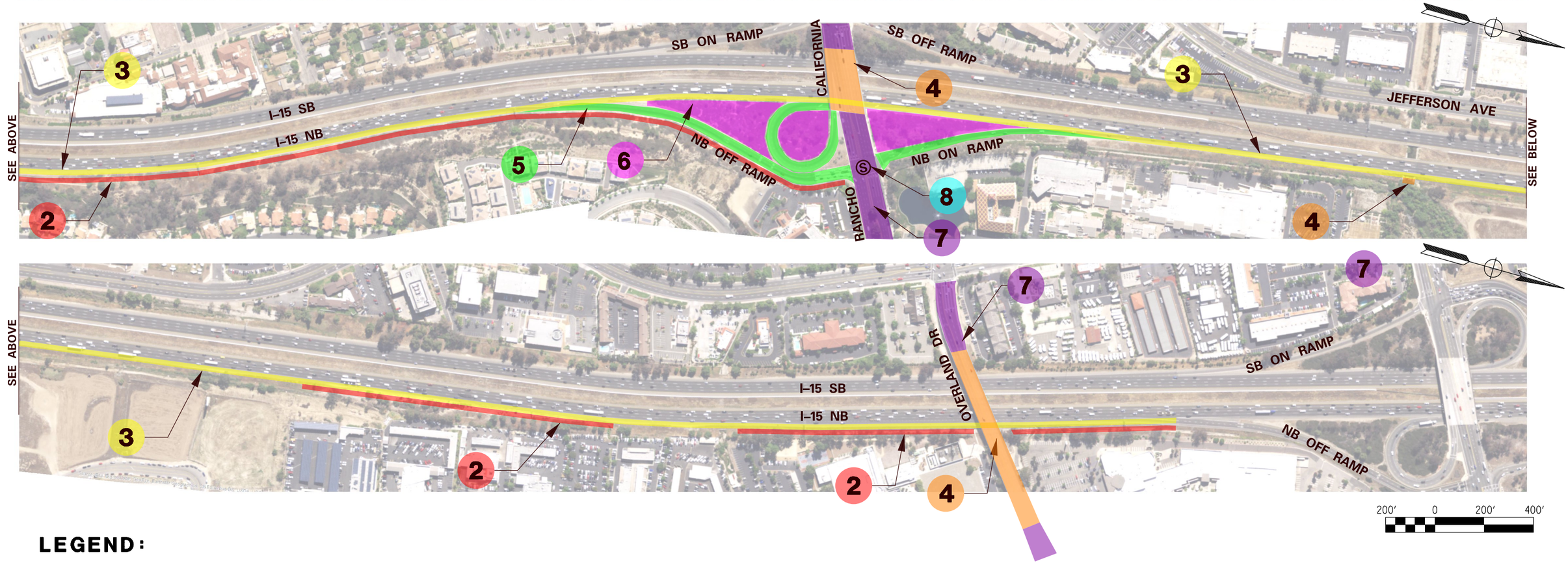
7. APPENDICES

Appendix A – Capacity Improvement Concept Plans

Appendix B – Conceptual Project Cost Estimate Tables

APPENDIX A – CAPACITY IMPROVEMENT CONCEPT PLANS





LEGEND:

1 ROW IMPACTS	4 STRUCTURE	7 STREET IMPROVEMENTS
2 RETAINING WALL	5 RAMP REALIGNMENT	8 SIGNALIZATION
3 WIDENING	6 ROADWAY EXCAVATION	

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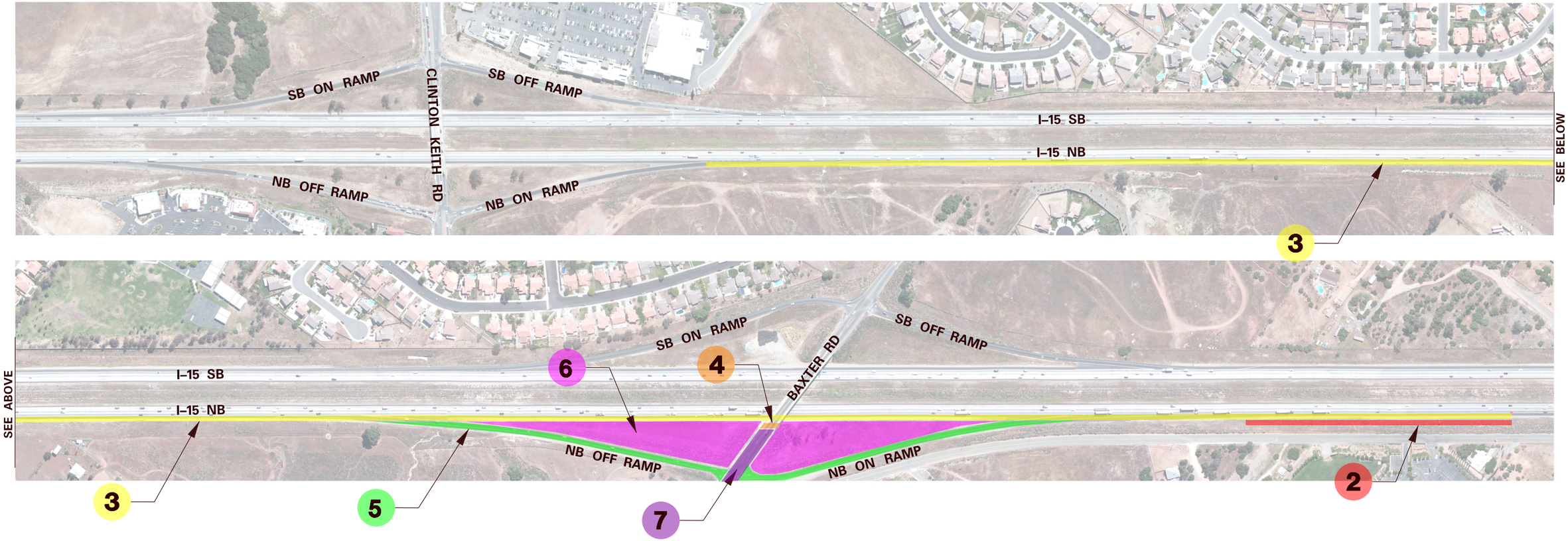

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3 WIDENING	6 ROADWAY EXCAVATION	

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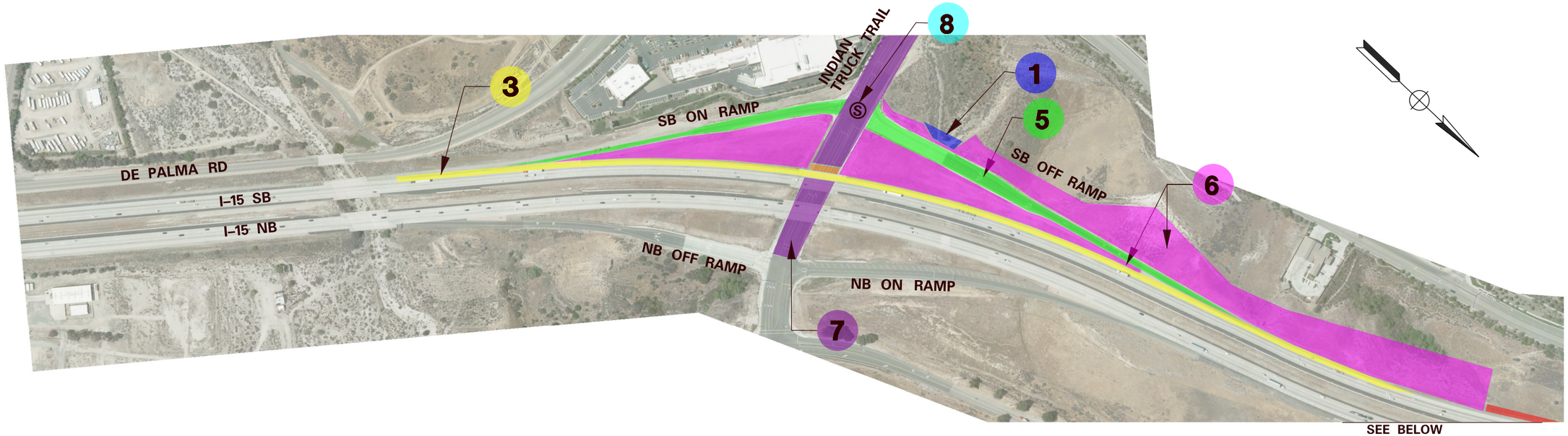

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2. RETAINING WALL
3. WIDENING
4. STRUCTURE
5. RAMP REALIGNMENT
6. ROADWAY EXCAVATION
7. STREET IMPROVEMENTS
8. SIGNALIZATION

PROJECT ID 07
EXHIBIT 1 OF 3

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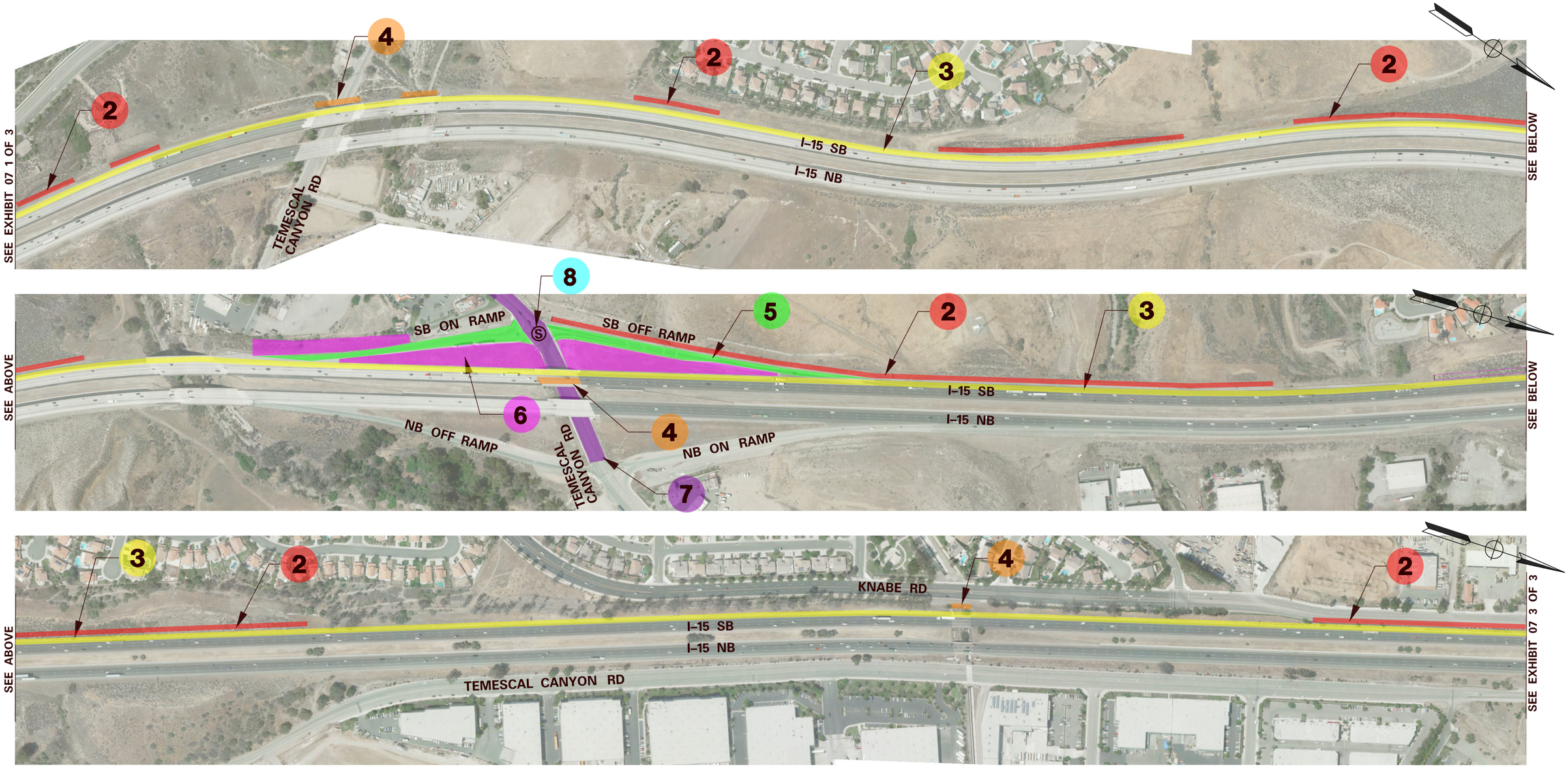

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1 ROW IMPACTS	4 STRUCTURE	7 STREET IMPROVEMENTS
2 RETAINING WALL	5 RAMP REALIGNMENT	8 SIGNALIZATION
3 WIDENING	6 ROADWAY EXCAVATION	

PROJECT ID 07
EXHIBIT 2 OF 3

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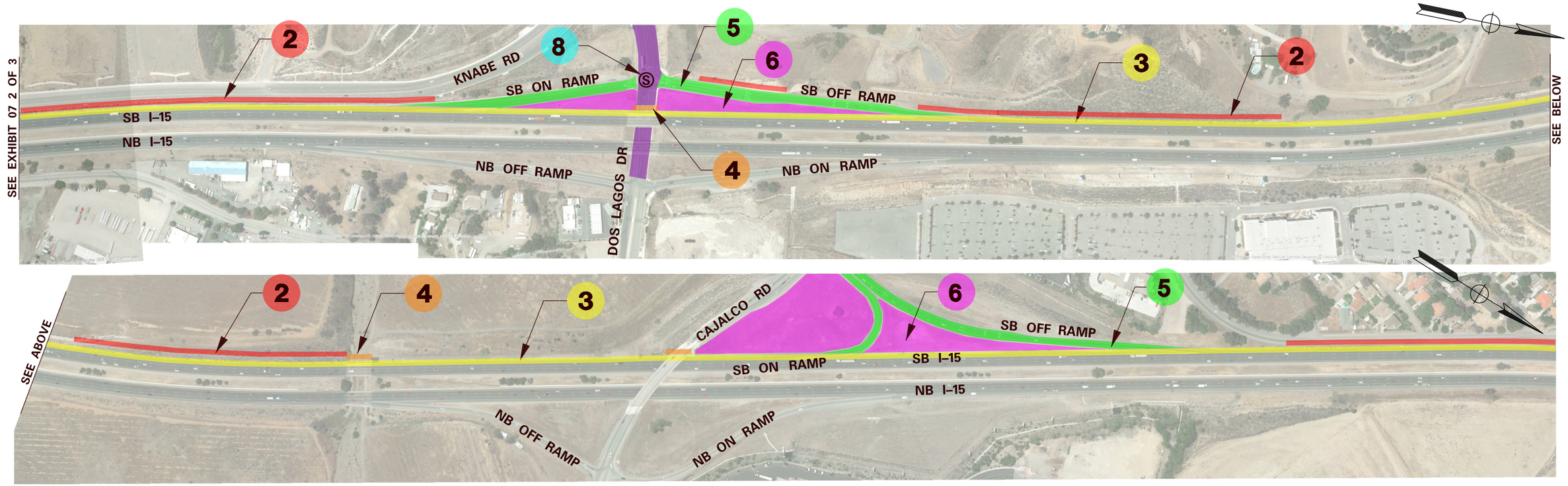

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1 ROW IMPACTS
2 RETAINING WALL
3 WIDENING
4 STRUCTURE
5 RAMP REALIGNMENT
6 ROADWAY EXCAVATION
7 STREET IMPROVEMENTS
8 SIGNALIZATION

PROJECT ID 07
EXHIBIT 3 OF 3

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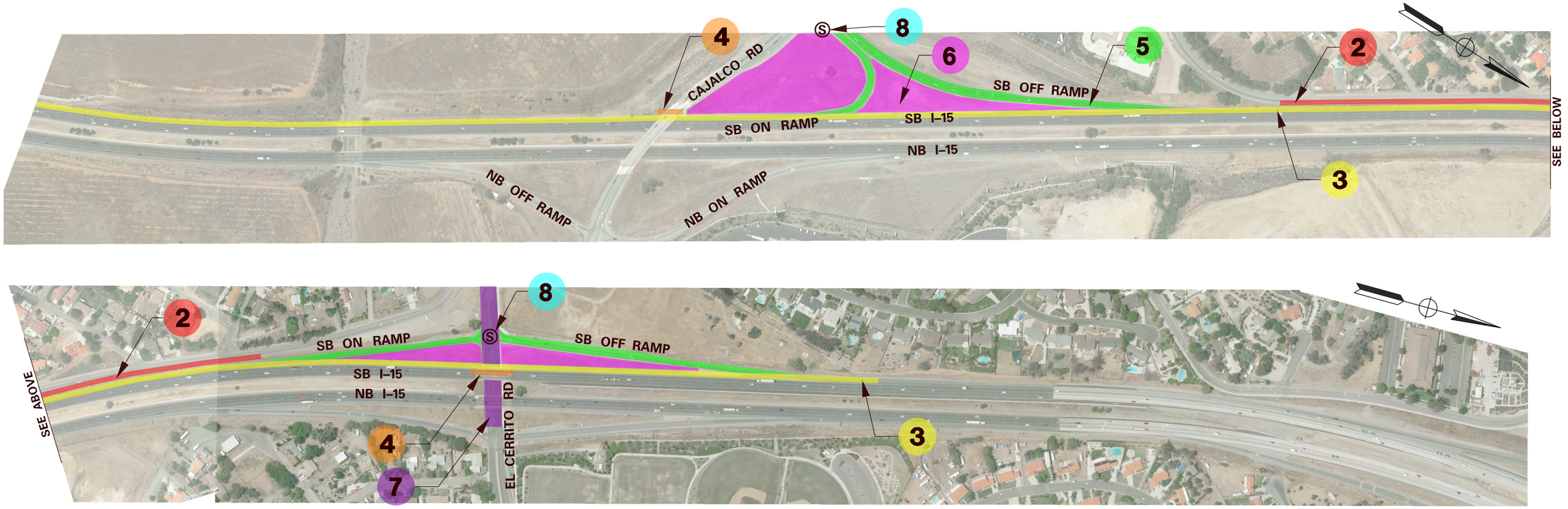

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2 RETAINING WALL

3 WIDENING

4 STRUCTURE

5 RAMP REALIGNMENT

6 ROADWAY EXCAVATION

7 STREET IMPROVEMENTS

8 SIGNALIZATION

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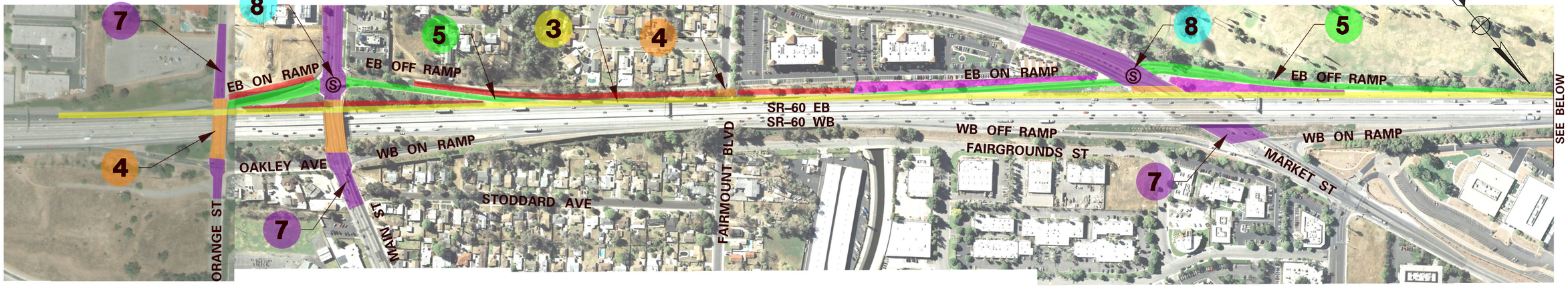

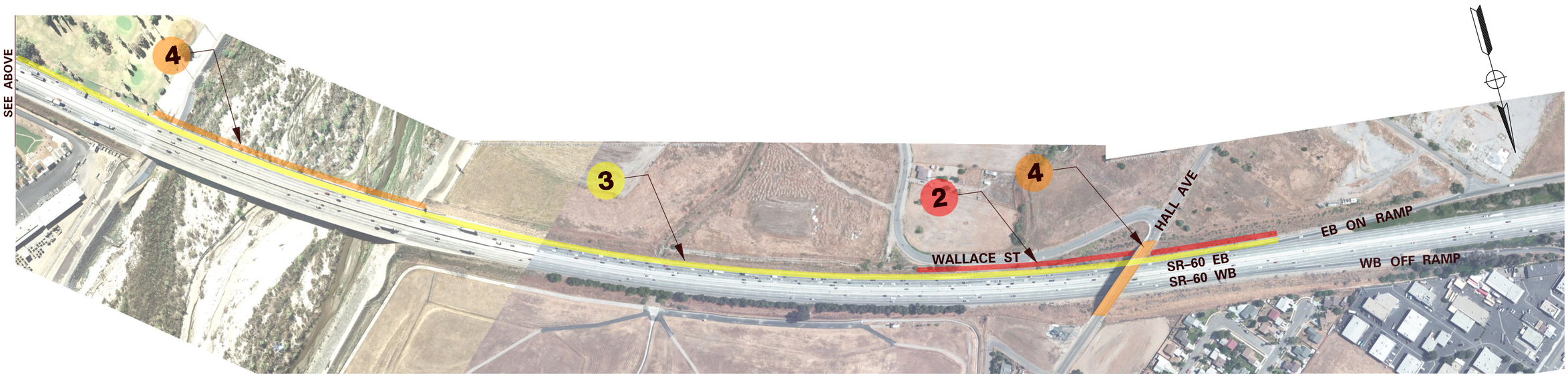

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3 WIDENING	6 ROADWAY EXCAVATION	

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3 WIDENING	6 ROADWAY EXCAVATION	

PROJECT ID 10

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2. RETAINING WALL
3. WIDENING
4. STRUCTURE
5. RAMP REALIGNMENT
6. ROADWAY EXCAVATION
7. STREET IMPROVEMENTS
8. SIGNALIZATION

PROJECT ID 10C

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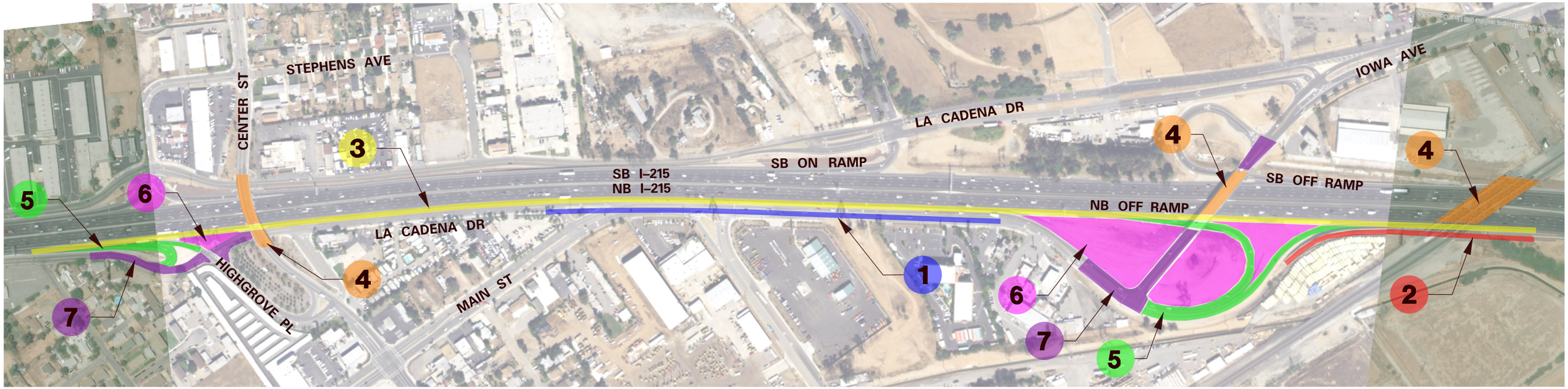

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3 WIDENING	6 ROADWAY EXCAVATION	

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3. WIDENING
4. STRUCTURE
5. RAMP REALIGNMENT
6. ROADWAY EXCAVATION
7. STREET IMPROVEMENTS
8. SIGNALIZATION

PROJECT ID 12

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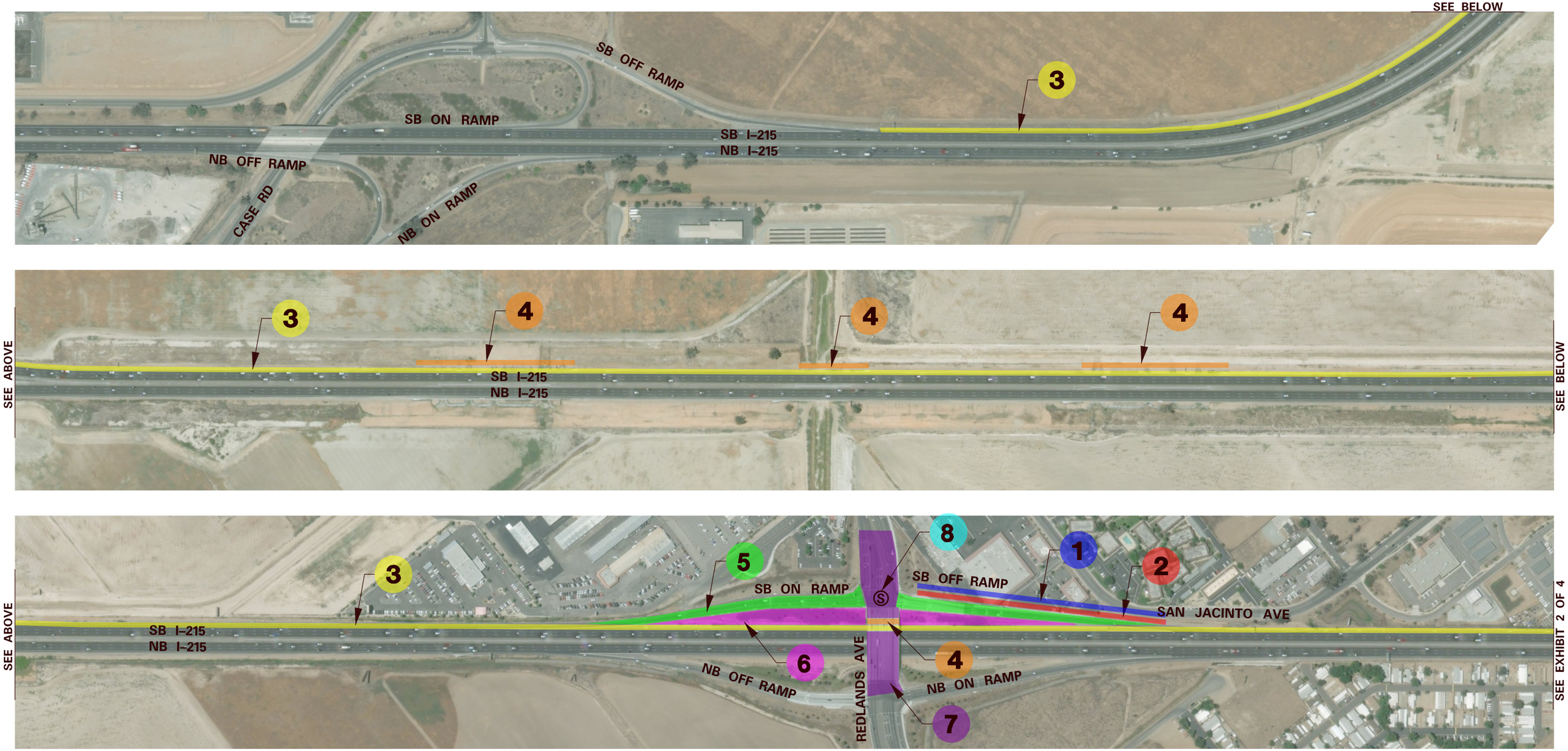

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2. RETAINING WALL
3. WIDENING
4. STRUCTURE
5. RAMP REALIGNMENT
6. ROADWAY EXCAVATION
7. STREET IMPROVEMENTS
8. SIGNALIZATION

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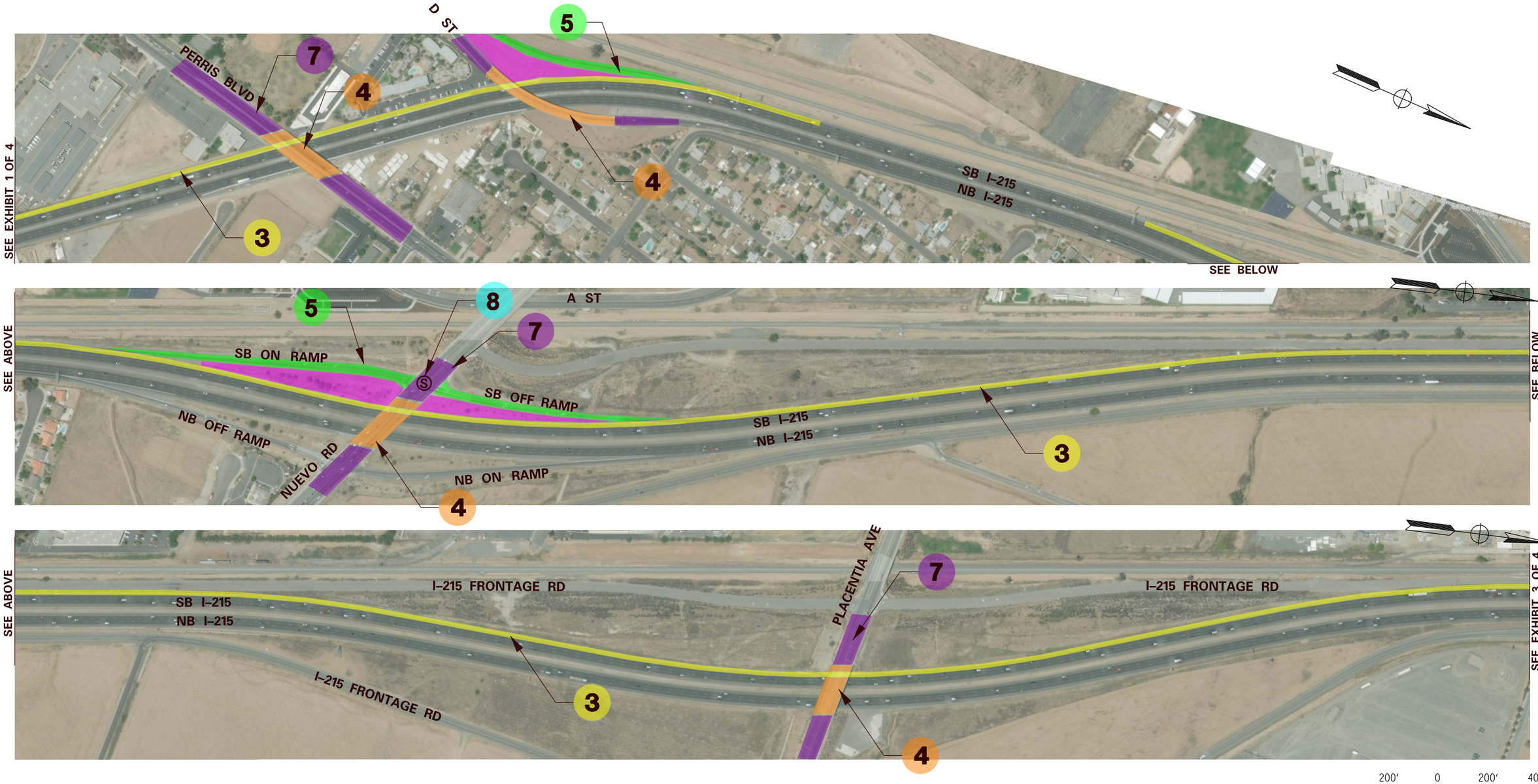

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1 ROW IMPACTS	4 STRUCTURE	7 STREET IMPROVEMENTS
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3 WIDENING	6 ROADWAY EXCAVATION	

PROJECT ID 13
EXHIBIT 2 OF 4

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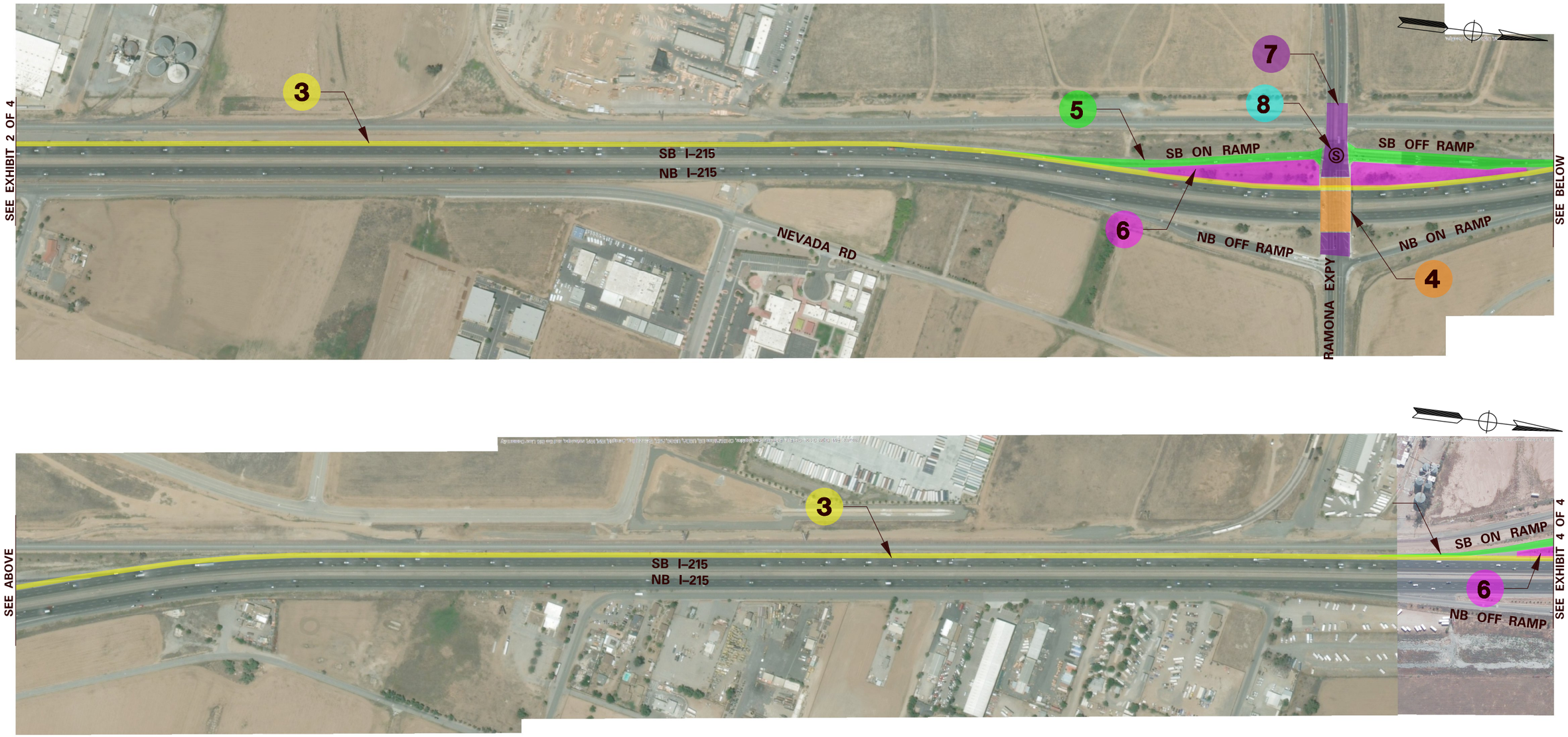

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- 2 RETAINING WALL
- 3 WIDENING
- 4 STRUCTURE
- 5 RAMP REALIGNMENT
- 6 ROADWAY EXCAVATION
- 7 STREET IMPROVEMENTS
- 8 SIGNALIZATION

PROJECT ID 13
EXHIBIT 3 OF 4

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3 WIDENING	6 ROADWAY EXCAVATION	

PROJECT ID 13
EXHIBIT 4 OF 4

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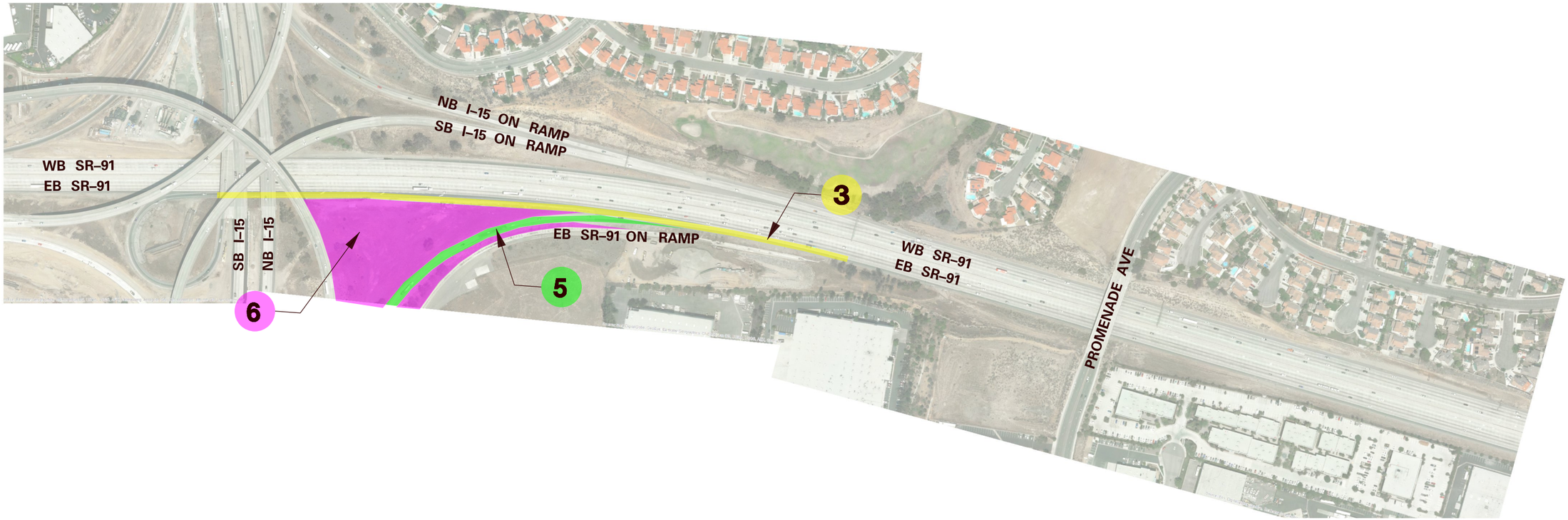

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3 WIDENING
4 STRUCTURE
5 RAMP REALIGNMENT
6 ROADWAY EXCAVATION
7 STREET IMPROVEMENTS
8 SIGNALIZATION

PROJECT ID 16

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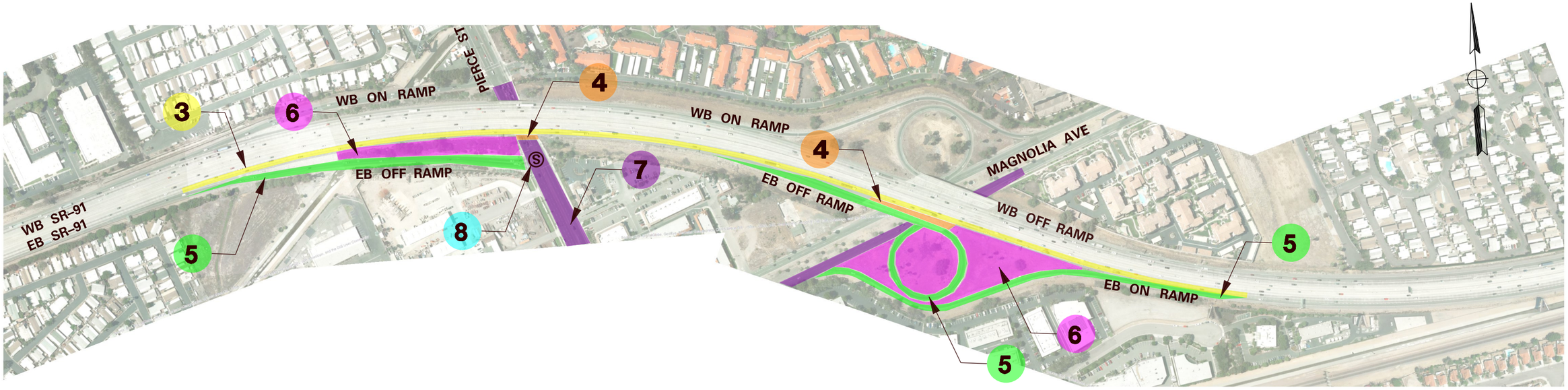

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2 RETAINING WALL

3 WIDENING

4 STRUCTURE

5 RAMP REALIGNMENT

6 ROADWAY EXCAVATION

7 STREET IMPROVEMENTS

8 SIGNALIZATION

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PROJECT ID 18

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APPENDIX B – CONCEPTUAL PROJECT COST ESTIMATE TABLES

Project #1: I-15 NB, from SR-79 S On-Ramp to Winchester Rd Off-Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$665,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$6,173,000***	
SECTION 3: DRAINAGE	***$1,205,850***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Speciallty Items	***$96,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$1,105,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$462,243***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$924,485***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$462,243***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$4,437,528***	
II. STRUCTURE ITEMS		
BRIDGES	***$20,207,000***	
TOTAL CAPITAL OUTLAY COSTS	***$35,738,348***	
SUPPORT COSTS	***$12,508,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$48,246,000***	

Summary of Quantities

Project #1: I-15 NB, from SR-79 S On-Ramp to Winchester Rd Off-Ramp

	Item Description	Distance (ft)	Width (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
	Earthwork							
	Roadway Excavation (NB Off Ramp Rancho California)	0.-560	20-235	7831.70	CY	$15.00	$117,475.56	
	Roadway Excavation (NB Loop On Ramp Rancho California)	0-202	0-200	13690.93	CY	$15.00	$205,363.89	
	Roadway Excavation (NB On Ramp Rancho California)	655	0-185	22810.22	CY	$15.00	$342,153.33	
	Pavment Structural Section							
	Remove Concrete Pavement (Mainline)	14605.00	10.00	16227.78	SQYD	$36.38	$590,366.56	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)	14605.00	22.00	8330.26	CY	$72.10	$600,611.69	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)	14605.00	22.00	5823.74	TON	$85.00	$495,018.22	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continously Reinforced Concrete Pavement (Mainline)	14605.00	22.00	10710.33	CY	$270.00	$2,891,790.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB Off Ramp Rancho California Rd)	1415.00	8.00	1257.78	SQYD	$36.38	$45,757.96	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB Off Ramp Rancho California Rd)	1415.00	38.00	1394.04	CY	$72.10	$100,510.07	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB Off Ramp Rancho California Rd)	1415.00	38.00	974.58	TON	$85.00	$82,839.41	Lane plus shoulder at 38' with a HMA depth of 0.25'
	Continously Reinforced Concrete Pavement (NB Off Ramp Rancho California Rd)	1415.00	38.00	1792.33	CY	$270.00	$483,930.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB Loop On Ramp Rancho California Rd)	800.00	8.00	711.11	SQYD	$36.38	$25,870.22	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB Loop On Ramp Rancho California Rd)	800.00	46.00	954.07	CY	$72.10	$68,788.74	Lane plus shoulder at 46' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB Loop On Ramp Rancho California Rd)	800.00	46.00	667.00	TON	$85.00	$56,695.00	Lane plus shoulder at 46' with a HMA depth of 0.25'
	Continously Reinforced Concrete Pavement (NB Loop On Ramp Rancho California Rd)	800.00	46.00	1226.67	CY	$270.00	$331,200.00	Lane plus shoulder at 46' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB On Ramp Rancho Califnornia)	835.00	8.00	742.22	SQYD	$36.38	$27,002.04	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB On Ramp Rancho Califnornia)	835.00	36.00	779.33	CY	$72.10	$56,189.93	Lane plus shoulder at 36' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB On Ramp Rancho Califnornia)	835.00	36.00	544.84	TON	$85.00	$46,311.19	Lane plus shoulder at 36' with a HMA depth of 0.25'
	Continously Reinforced Concrete Pavement (NB On Ramp Rancho Califnornia)	835.00	36.00	1002.00	CY	$270.00	$270,540.00	Lane plus shoulder at 36' with a CRCP depth of 0.90'
	Speciallty Items							
	Structural Concrete (Retaining Wall)	8625.00		1597.41	SQFT	$60.00	$95,844.44	Retaing wall height 5'
	Traffic Items							
	Traffic Electrical							
	Intersection Signalization			4.00	PER CORNER	$50,000.00	$200,000.00	
	Traffic Signing and Stripping							
	Removal of Existing Striping (Mainline)	14605.00		14605.00	LF	$0.65	$9,493.25	
	Thermoplastic Striping (Mainline)	29210.00		29210.00	LF	$2.41	$70,396.10	
	Removal of Existing Striping (NB Off Ramp Rancho California Rd)	4252.00		4252.00	LF	$0.65	$2,763.80	
	Thermoplastic Striping (NB Off Ramp Rancho California Rd)	4252.00		4252.00	LF	$2.41	$10,247.32	
	Removal of Existing Striping (NB Loop On Ramp Rancho California Rd)	2027.00		2027.00	LF	$0.65	$1,317.55	
	Thermoplastic Striping (NB Loop On Ramp Rancho California Rd)	2027.00		2027.00	LF	$2.41	$4,885.07	
	Removal of Existing Striping (NB On Ramp Rancho Califnornia)	1870.00		1870.00	LF	$0.65	$1,215.50	
	Thermoplastic Striping (NB On Ramp Rancho Califnornia)	1870.00		1870.00	LF	$2.41	$4,506.70	
	Reconstruct Sign Structure			4.00	EA	$200,000.00	$800,000.00	
II. Structure Items								
	Santiago Rd Bridge-Tie-back	70.00	22.00	1540.00	SQ FT	$375.00	$577,500.00	
	Rancho Califnoria Rd Bridge Replacement	122.00	262.00	31964.00	SQ FT	$250.00	$7,991,000.00	
	Drainge Underpass Widening	58.00	22.00	1276.00	SQ FT	$375.00	$478,500.00	
	Overland Rd Bridge Replacement	62.00	720.00	44640.00	SQ FT	$250.00	$11,160,000.00	
III. Right of Way								

I.	***Roadway Items***	$8,039,000.00
	Earthwork	$665,000.00
	Pavment Structural Section	$6,173,000.00
	Speciallty Items	$96,000.00
	Traffic Items	$1,105,000.00
II.	***Structural Items***	$20,207,000.00
III.	***Right of Way***	$0.00

Project #1: I-15 NB at Rancho California Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$665,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$1,596,000***	
SECTION 3: DRAINAGE	***$375,300***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Speciallty Items	***$16,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$225,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$143,865***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$287,730***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$143,865***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$1,381,104***	
II. STRUCTURE ITEMS		
BRIDGES	***$7,991,000***	
TOTAL CAPITAL OUTLAY COSTS	***$12,824,864***	
SUPPORT COSTS	***$4,489,000***	Support costs are 35% of capital outlay costs
SUBTOTAL PROJECT COSTS	***$17,314,000***	

Amount included in 2016 TUMF Nexus Study	***$12,009,000.00***
Amount to be reduced from Total Project Costs	***$12,009,000.00***

Summary of Quantities

Project #1: I-15 NB at Rancho California Subtotal

Item Description	Distance (ft)	Width (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary							
Earthwork							
Roadway Excavation (NB Off Ramp Rancho California)	0.-560	20-235	7831.70	CY	$15.00	$117,475.56	
Roadway Excavation (NB Loop On Ramp Rancho California)	0-202	0-200	13690.93	CY	$15.00	$205,363.89	
Roadway Excavation (NB On Ramp Rancho California)	655	0-185	22810.22	CY	$15.00	$342,153.33	
Pavment Structural Section							
Remove Concrete Pavement (Mainline)						$0.00	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)						$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)						$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (Mainline)						$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB Off Ramp Rancho California Rd)	1415.00	8.00	1257.78	SQYD	$36.38	$45,757.96	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB Off Ramp Rancho California Rd)	1415.00	38.00	1394.04	CY	$72.10	$100,510.07	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB Off Ramp Rancho California Rd)	1415.00	38.00	974.58	TON	$85.00	$82,839.41	Lane plus shoulder at 38' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (NB Off Ramp Rancho California Rd)	1415.00	38.00	1792.33	CY	$270.00	$483,930.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB Loop On Ramp Rancho California Rd)	800.00	8.00	711.11	SQYD	$36.38	$25,870.22	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB Loop On Ramp Rancho California Rd)	800.00	46.00	954.07	CY	$72.10	$68,788.74	Lane plus shoulder at 46' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB Loop On Ramp Rancho California Rd)	800.00	46.00	667.00	TON	$85.00	$56,695.00	Lane plus shoulder at 46' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (NB Loop On Ramp Rancho California Rd)	800.00	46.00	1226.67	CY	$270.00	$331,200.00	Lane plus shoulder at 46' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB On Ramp Rancho Califnornia)	835.00	8.00	742.22	SQYD	$36.38	$27,002.04	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB On Ramp Rancho Califnornia)	835.00	36.00	779.33	CY	$72.10	$56,189.93	Lane plus shoulder at 36' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB On Ramp Rancho Califnornia)	835.00	36.00	544.84	TON	$85.00	$46,311.19	Lane plus shoulder at 36' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (NB On Ramp Rancho Califnornia)	835.00	36.00	1002.00	CY	$270.00	$270,540.00	Lane plus shoulder at 36' with a CRCP depth of 0.90'
Speciallty Items							
Structural Concrete (Retaining Wall)	*1400.00*		259.26	SQFT	$60.00	$15,555.56	Retaing wall height 5'
Traffic Items							
Traffic Electrical							
Intersection Signalization			4.00	PER CORNER	$50,000.00	$200,000.00	
Traffic Signing and Stripping							
Removal of Existing Striping (Mainline)						$0.00	
Thermoplastic Striping (Mainline)						$0.00	
Removal of Existing Striping (NB Off Ramp Rancho California Rd)	4252.00		4252.00	LF	$0.65	$2,763.80	
Thermoplastic Striping (NB Off Ramp Rancho California Rd)	4252.00		4252.00	LF	$2.41	$10,247.32	
Removal of Existing Striping (NB Loop On Ramp Rancho California Rd)	2027.00		2027.00	LF	$0.65	$1,317.55	
Thermoplastic Striping (NB Loop On Ramp Rancho California Rd)	2027.00		2027.00	LF	$2.41	$4,885.07	
Removal of Existing Striping (NB On Ramp Rancho Califnornia)	1870.00		1870.00	LF	$0.65	$1,215.50	
Thermoplastic Striping (NB On Ramp Rancho Califnornia)	1870.00		1870.00	LF	$2.41	$4,506.70	
Reconstruct Sign Structure						$0.00	
II. Structure Items							
Santiago Rd Bridge-Tie-back						$0.00	
Rancho Califnoria Rd Bridge Replacement	122.00	262.00	31964.00	SQ FT	$250.00	$7,991,000.00	
Drainge Underpass Widening						$0.00	
Overland Rd Bridge Replacement						$0.00	
III. Right of Way							

I.	***Roadway Items***	$2,502,000.00
	Earthwork	$665,000.00
	Pavment Structural Section	$1,596,000.00
	Speciallty Items	$16,000.00
	Traffic Items	$225,000.00
II.	***Structural Items***	$7,991,000.00
III.	***Right of Way***	$0.00

Project #3: I-15 NB, from Clinton Keith Rd. On-ramp to Baxter Rd. Off-Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$2,239,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$2,328,000***	
SECTION 3: DRAINAGE	***$809,700***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$35,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$796,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$310,385***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$620,770***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$310,385***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$2,979,696***	
II. STRUCTURE ITEMS		
BRIDGES	***$360,000***	
TOTAL CAPITAL OUTLAY COSTS	***$10,788,936***	
SUPPORT COSTS	***$3,776,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$14,565,000***	

Summary of Quantities

Project #3: I-15 NB, from Clinton Keith Rd. On-ramp to Baxter Rd. Off-Ramp

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (NB Off Ramp Baxter Rd)	1175.00	0-185	14.00	50359.04	CY	$15.00	$755,385.56	
	Roadway Excavation (NB On Ramp Baxter Rd)	860.00	0-200	28.00	98907.41	CY	$15.00	$1,483,611.11	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)	4840.00	10.00		5377.78	SQYD	$36.38	$195,643.56	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)	4840.00	22.00		2760.59	CY	$72.10	$199,038.73	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)	4840.00	22.00		1929.95	TON	$85.00	$164,045.75	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)	4840.00	22.00		3549.33	CY	$270.00	$958,320.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB Off Ramp Baxter)	1220.00	8.00		1084.44	SQYD	$36.38	$39,452.09	Existing shoulders at 8'
	Class 2 Aggregate Subbase(NB Off Ramp Baxter)	1220.00	24.00		759.11	CY	$72.10	$54,731.91	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB Off Ramp Baxter)	1220.00	24.00		530.70	TON	$85.00	$45,109.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB Off Ramp Baxter)	1220.00	24.00		976.00	CY	$270.00	$263,520.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB On Ramp Baxter)	1235.00	8.00		1097.78	SQYD	$36.38	$39,937.16	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB On Ramp Baxter)	1235.00	24.00		768.44	CY	$72.10	$55,404.84	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB On Ramp Baxter)	1235.00	24.00		537.23	TON	$85.00	$45,664.13	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB On Ramp Baxter)	1235.00	24.00		988.00	CY	$270.00	$266,760.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Specialty Items						$0.00		
	Structural Concrete (Retaining Wall)	1055.00			586.11	SQFT	$60.00	$35,166.67	Retaining wall height 5'
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization				7.00	PER CORNER	$50,000.00	$350,000.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)	4840.00			4840.00	LF	$0.65	$3,146.00	
	Thermoplastic Striping (Mainline)	9680.00			9680.00	LF	$2.41	$23,328.80	
	Removal of Existing Striping (NB Off Ramp Baxter)	1475.00			1475.00	LF	$0.65	$958.75	
	Thermoplastic Striping (NB Off Ramp Baxter)	1475.00			1475.00	LF	$2.41	$3,554.75	
	Removal of Existing Striping (NB On Ramp Baxter)	1235.00			1235.00	LF	$0.65	$802.75	
	Thermoplastic Striping (NB On Ramp Baxter)	1235.00			1235.00	LF	$2.41	$2,976.35	
	Reconstruct Sign Structure				2.00	EA	$200,000.00	$400,000.00	
II. Structure Items									
	Baxter Rd Bridge-Tie-back	60.00	16.00		960.00	SQFT	$375.00	$360,000.00	
III. Right of Way									

I.	**Roadway Items**	$5,398,000.00
	Earthwork	$2,239,000.00
	Pavement Structural Section	$2,328,000.00
	Specialty Items	$35,000.00
	Traffic Items	$796,000.00
II.	**Structural Items**	$360,000.00
III.	**Right of Way**	$0.00

Project #3: I-15 NB at Baxter Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$2,239,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$811,000***	
SECTION 3: DRAINAGE	***$573,000***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$770,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$219,650***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$439,300***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$219,650***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$2,108,640***	
II. STRUCTURE ITEMS		
BRIDGES	***$360,000***	
TOTAL CAPITAL OUTLAY COSTS	***$7,740,240***	
SUPPORT COSTS	***$2,709,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$10,449,000***	
Amount included in 2016 TUMF Nexus Study	***$7,159,000.00***	
Amount to be reduced from Total Project Costs	***$7,159,000.00***	

Summary of Quantities

Project #3: I-15 NB at Baxter Subtotal

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (NB Off Ramp Baxter Rd)	1175.00	0-185	14.00	50359.04	CY	$15.00	$755,385.56	
	Roadway Excavation (NB On Ramp Baxter Rd)	860.00	0-200	28.00	98907.41	CY	$15.00	$1,483,611.11	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB Off Ramp Baxter)	1220.00	8.00		1084.44	SQYD	$36.38	$39,452.09	Existing shoulders at 8'
	Class 2 Aggregate Subbase(NB Off Ramp Baxter)	1220.00	24.00		759.11	CY	$72.10	$54,731.91	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB Off Ramp Baxter)	1220.00	24.00		530.70	TON	$85.00	$45,109.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB Off Ramp Baxter)	1220.00	24.00		976.00	CY	$270.00	$263,520.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB On Ramp Baxter)	1235.00	8.00		1097.78	SQYD	$36.38	$39,937.16	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB On Ramp Baxter)	1235.00	24.00		768.44	CY	$72.10	$55,404.84	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB On Ramp Baxter)	1235.00	24.00		537.23	TON	$85.00	$45,664.13	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB On Ramp Baxter)	1235.00	24.00		988.00	CY	$270.00	$266,760.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Specialty Items						$0.00		
	Structural Concrete (Retaining Wall)							$0.00	Retaining wall height 5'
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization				7.00	PER CORNER	$50,000.00	$350,000.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)							$0.00	
	Thermoplastic Striping (Mainline)							$0.00	
	Removal of Existing Striping (NB Off Ramp Baxter)	1475.00			1475.00	LF	$0.65	$958.75	
	Thermoplastic Striping (NB Off Ramp Baxter)	1475.00			1475.00	LF	$2.41	$3,554.75	
	Removal of Existing Striping (NB On Ramp Baxter)	1235.00			1235.00	LF	$0.65	$802.75	
	Thermoplastic Striping (NB On Ramp Baxter)	1235.00			1235.00	LF	$2.41	$2,976.35	
	Reconstruct Sign Structure				2.00	EA	$200,000.00	$400,000.00	
II. Structure Items									
	Baxter Rd Bridge-Tie-back	60.00	16.00		960.00	SQFT	$375.00	$360,000.00	
III. Right of Way									

I.	**Roadway Items**	$3,820,000.00
	Earthwork	$2,239,000.00
	Pavement Structural Section	$811,000.00
	Specialty Items	$0.00
	Traffic Items	$770,000.00
II.	**Structural Items**	$360,000.00
III.	**Right of Way**	$0.00

Project #7, I-15 SB, from Cajalco Rd On-Ramp to Indian Truck Trail On-Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	**$1,510,000**	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	**$11,919,000**	
SECTION 3: DRAINAGE	**$2,251,950**	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	**$304,000**	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	**$1,280,000**	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	**$863,248**	
SECTION 9: MOBILIZATION 10% of Sections 1-6	**$1,726,495**	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	**$863,248**	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	**$8,287,176**	
II. STRUCTURE ITEMS		
BRIDGES	**$4,310,000**	
II. STRUCTURE ITEMS		
Right of Way Acquisition	**$375,000**	
TOTAL CAPITAL OUTLAY COSTS	**$33,690,116**	
SUPPORT COSTS	**$11,792,000**	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	**$45,482,000**	

Summary of Quantities

Project #7, I-15 SB, from Cajalco Rd On-Ramp to Indian Truck Trail On-Ramp

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (SB On Ramp Indian Truck Trail)	840.00	0-186	0-12	36720.00	CY	$15.00	$550,800.00	
Roadway Excavation (SB Off Ramp Indian Truck Trail)	1100.00	11-167	0-11	36410.00	CY	$15.00	$546,150.00	
Roadway Excavation (West of SB Off Ramp Indian Truck Trail)	1735	0-162	0-7	10460.52	CY	$15.00	$156,907.78	
Roadway Excavation (West of SB on Ramp Temescal Canyon)	640.00	36-70	0-2	2587.11	CY	$15.00	$38,806.67	
Roadway Excavation (SB on Ramp Temescal Canyon)	830.00	14-102	0-3	5971.00	CY	$15.00	$89,565.00	
Roadway Excavation (SB off Ramp Temescal Canyon)	860.00	12-125	0-2	4170.44	CY	$15.00	$62,556.67	
Roadway Excavation (SB on Ramp Dos Lagos)	520.00	0-85	0-2	1586.07	CY	$15.00	$23,791.11	
Roadway Excavation (SB off Ramp Dos Lagos)	950.00	0-90	0-2	2776.52	CY	$15.00	$41,647.78	
Pavement Structural Section								
Remove Concrete Pavement (Mainline)	29203.00	10.00		32447.78	SQYD	$36.38	$1,180,450.16	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)	29203.00	22.00		16656.53	CY	$72.10	$1,200,935.52	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)	29203.00	22.00		11644.70	TON	$85.00	$989,799.18	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (Mainline)	29203.00	22.00		21415.53	CY	$270.00	$5,782,194.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Indian Truck Trail)	215.00	8.00		191.11	SQYD	$36.38	$6,952.62	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Indian Truck Trail)	215.00	26.00		144.93	CY	$72.10	$10,449.16	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Indian Truck Trail)	215.00	26.00		101.32	TON	$85.00	$8,612.09	Lane plus shoulder at 26' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Indian Truck Trail)	215.00	26.00		186.33	CY	$270.00	$50,310.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB Off Ramp Indian Truck Trail)	1220.00	8.00		1084.44	SQYD	$36.38	$39,452.09	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB Off Ramp Indian Truck Trail)	1220.00	52.00		1644.74	CY	$72.10	$118,585.81	Lane plus shoulder at 52' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB Off Ramp Indian Truck Trail)	1220.00	52.00		1149.85	TON	$85.00	$97,737.25	Lane plus shoulder at 52' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB Off Ramp Indian Truck Trail)	1220.00	52.00		2114.67	CY	$270.00	$570,960.00	Lane plus shoulder at 52' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Temescal Canyon)	955.00	8.00		848.89	SQYD	$36.38	$30,882.58	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Temescal Canyon)	955.00	36.00		891.33	CY	$72.10	$64,265.13	Lane plus shoulder at 36' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Temescal Canyon)	955.00	36.00		623.14	TON	$85.00	$52,966.69	Lane plus shoulder at 36' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Temescal Canyon)	955.00	36.00		1146.00	CY	$270.00	$309,420.00	Lane plus shoulder at 36' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Temescal Canyon)	1165.00	8.00		1035.56	SQYD	$36.38	$37,673.51	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Temescal Canyon)	1165.00	34.00		1026.93	CY	$72.10	$74,041.36	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Temescal Canyon)	1165.00	34.00		717.93	TON	$85.00	$61,024.16	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Temescal Canyon)	1165.00	34.00		1320.33	CY	$270.00	$356,490.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Dos Lagos)	740.00	8.00		657.78	SQYD	$36.38	$23,929.96	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Dos Lagos)	740.00	38.00		729.04	CY	$72.10	$52,563.57	Lane plus shoulder at 38 with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Dos Lagos)	740.00	38.00		509.68	TON	$85.00	$43,322.38	Lane plus shoulder at 38' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Dos Lagos)	740.00	38.00		937.33	CY	$270.00	$253,080.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Dos Lagos)	1050.00	8.00		933.33	SQYD	$36.38	$33,954.67	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Dos Lagos)	1050.00	36.00		980.00	CY	$72.10	$70,658.00	Lane plus shoulder at 36' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Dos Lagos)	1050.00	36.00		685.13	TON	$85.00	$58,235.63	Lane plus shoulder at 36' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Dos Lagos)	1050.00	36.00		1260.00	CY	$270.00	$340,200.00	Lane plus shoulder at 36' with a CRCP depth of 0.90'
Specialty Items								
Remove Retaining Wall	1095.00			1095.00	LF	$15.00	$16,425.00	
Structural Concrete (Retaining Wall)	14010.00			4792.22	SQFT	$60.00	$287,533.33	Retaining wall height 5'
Traffic Items								
Traffic Electrical								
Intersection Signalization				12.00	PER CORNER	$50,000.00	$600,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)	29203.00			29203.00	LF	$0.65	$18,981.95	
Thermoplastic Striping (Mainline)	58406.00			58406.00	LF	$2.41	$140,758.46	
Removal of Existing Striping (SB on Ramp Indian Truck Trail)	2386.00			2386.00	LF	$0.65	$1,550.90	
Thermoplastic Striping (SB on Ramp Indian Truck Trail)	2386.00			2386.00	LF	$2.41	$5,750.26	
Removal of Existing Striping (SB Off Ramp Indian Truck Trail)	3870.00			3870.00	LF	$0.65	$2,515.50	
Thermoplastic Striping (SB Off Ramp Indian Truck Trail)	3870.00			3870.00	LF	$2.41	$9,326.70	
Removal of Existing Striping (SB on Ramp Temescal Canyon)	2035.00			2035.00	LF	$0.65	$1,322.75	
Thermoplastic Striping (SB on Ramp Temescal Canyon)	2035.00			2035.00	LF	$2.41	$4,904.35	
Removal of Existing Striping (SB off Ramp Temescal Canyon)	26170.00			26170.00	LF	$0.65	$17,010.50	
Thermoplastic Striping (SB off Ramp Temescal Canyon)	26170.00			26170.00	LF	$2.41	$63,069.70	
Removal of Existing Striping (SB on Ramp Dos Lagos)	1491.00			1491.00	LF	$0.65	$969.15	
Thermoplastic Striping (SB on Ramp Dos Lagos)	1491.00			1491.00	LF	$2.41	$3,593.31	
Removal of Existing Striping (SB off Ramp Dos Lagos)	3290.00			3290.00	LF	$0.65	$2,138.50	
Thermoplastic Striping (SB off Ramp Dos Lagos)	3290.00			3290.00	LF	$2.41	$7,928.90	
Reconstruct Sign Structure				2.00	LF	$200,000.00	$400,000.00	
II. Structure Items								
Indian Truck Trail Bridge Widening	136.00	14.00		1904.00	SQFT	$375.00	$714,000.00	
Temescal Canyon OC Widening PM 31.90	160.00	14.00		2240.00	SQFT	$375.00	$840,000.00	
Mayhew Wash Bridge Widening PM 31.97	145.00	14.00		2030.00	SQFT	$375.00	$761,250.00	
Temescal Canyon Road UC Widening PM 33.25	62.00	14.00		868.00	SQFT	$375.00	$325,500.00	
Brown Canyon Wash Bridge Widening PM 34.72	78.00	14.00		1092.00	SQ FT	$375.00	$409,500.00	
Dos Lagos Bridge Widening	140.00	14.00		1960.00	SQ FT	$375.00	$735,000.00	
Bedford Wash Bridge Widening	100.00	14.00		1400.00	SQFT	$375.00	$525,000.00	
III. Right of Way								
Right of Way Acquisition	150.00	50.00		7500.00	SQFT	$50.00	$375,000.00	

I.	***Roadway Items***	$15,013,000.00
	Earthwork	$1,510,000.00
	Pavement Structural Section	$11,919,000.00
	Specialty Items	$304,000.00
	Traffic Items	$1,280,000.00
II.	***Structural Items***	$4,310,000.00
III.	***Right of Way***	$375,000.00

Project #7, I-15 SB at Temescal Canyon Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$191,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$987,000***	
SECTION 3: DRAINAGE	***$375,150***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$43,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$1,280,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$143,808***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$287,615***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$143,808***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$1,380,552***	
II. STRUCTURE ITEMS		
BRIDGES	***$840,000***	
II. STRUCTURE ITEMS		
Right of Way Acquisition	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$5,671,932***	
SUPPORT COSTS	***$1,985,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$7,657,000***	

Amount included in 2016 TUMF Nexus Study	***$17,897,000.00***
Amount to be reduced from Total Project Costs	***$7,657,000.00***

Summary of Quantities

Project #7, I-15 SB at Temescal Canyon Subtotal

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (SB On Ramp Indian Truck Trail)							$0.00	
Roadway Excavation (SB Off Ramp Indian Truck Trail)							$0.00	
Roadway Excavation (West of SB Off Ramp Indian Truck Trail)							$0.00	
Roadway Excavation (West of SB on Ramp Temescal Canyon)	640.00	36-70	0-2	2587.11	CY	$15.00	$38,806.67	
Roadway Excavation (SB on Ramp Temescal Canyon)	830.00	14-102	0-3	5971.00	CY	$15.00	$89,565.00	
Roadway Excavation (SB off Ramp Temescal Canyon)	860.00	12-125	0-2	4170.44	CY	$15.00	$62,556.67	
Roadway Excavation (SB on Ramp Dos Lagos)							$0.00	
Roadway Excavation (SB off Ramp Dos Lagos)							$0.00	
Pavement Structural Section								
Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Indian Truck Trail)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Indian Truck Trail)							$0.00	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Indian Truck Trail)							$0.00	Lane plus shoulder at 26' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Indian Truck Trail)							$0.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB Off Ramp Indian Truck Trail)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB Off Ramp Indian Truck Trail)							$0.00	Lane plus shoulder at 52' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB Off Ramp Indian Truck Trail)							$0.00	Lane plus shoulder at 52' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB Off Ramp Indian Truck Trail)							$0.00	Lane plus shoulder at 52' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Temescal Canyon)	955.00	8.00		848.89	SQYD	$36.38	$30,882.58	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Temescal Canyon)	955.00	36.00		891.33	CY	$72.10	$64,265.13	Lane plus shoulder at 36' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Temescal Canyon)	955.00	36.00		623.14	TON	$85.00	$52,966.69	Lane plus shoulder at 36' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Temescal Canyon)	955.00	36.00		1146.00	CY	$270.00	$309,420.00	Lane plus shoulder at 36' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Temescal Canyon)	1165.00	8.00		1035.56	SQYD	$36.38	$37,673.51	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Temescal Canyon)	1165.00	34.00		1026.93	CY	$72.10	$74,041.36	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Temescal Canyon)	1165.00	34.00		717.93	TON	$85.00	$61,024.16	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Temescal Canyon)	1165.00	34.00		1320.33	CY	$270.00	$356,490.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Dos Lagos)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Dos Lagos)							$0.00	Lane plus shoulder at 38 with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Dos Lagos)							$0.00	Lane plus shoulder at 38' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Dos Lagos)							$0.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Dos Lagos)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Dos Lagos)							$0.00	Lane plus shoulder at 36' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Dos Lagos)							$0.00	Lane plus shoulder at 36' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Dos Lagos)							$0.00	Lane plus shoulder at 36' with a CRCP depth of 0.90'
Specialty Items								
Remove Retaining Wall							$0.00	
Structural Concrete (Retaining Wall)	*1300.00*			722.22	SQFT	$60.00	$43,333.33	Retaining wall height 5'
Traffic Items								
Traffic Electrical								
Intersection Signalization				*4.00*	PER CORNER	$50,000.00	$200,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)							$0.00	
Thermoplastic Striping (Mainline)							$0.00	
Removal of Existing Striping (SB on Ramp Indian Truck Trail)							$0.00	
Thermoplastic Striping (SB on Ramp Indian Truck Trail)							$0.00	
Removal of Existing Striping (SB Off Ramp Indian Truck Trail)							$0.00	
Thermoplastic Striping (SB Off Ramp Indian Truck Trail)							$0.00	
Removal of Existing Striping (SB on Ramp Temescal Canyon)	2035.00			2035.00	LF	$0.65	$1,322.75	
Thermoplastic Striping (SB on Ramp Temescal Canyon)	2035.00			2035.00	LF	$2.41	$4,904.35	
Removal of Existing Striping (SB off Ramp Temescal Canyon)	26170.00			26170.00	LF	$0.65	$17,010.50	
Thermoplastic Striping (SB off Ramp Temescal Canyon)	26170.00			26170.00	LF	$2.41	$63,069.70	
Removal of Existing Striping (SB on Ramp Dos Lagos)							$0.00	
Thermoplastic Striping (SB on Ramp Dos Lagos)							$0.00	
Removal of Existing Striping (SB off Ramp Dos Lagos)							$0.00	
Thermoplastic Striping (SB off Ramp Dos Lagos)							$0.00	
Reconstruct Sign Structure							$0.00	
II. Structure Items								
Indian Truck Trail Bridge Widening							$0.00	
Temescal Canyon OC Widening PM 31.90	160.00	14.00		2240.00	SQFT	$375.00	$840,000.00	
Mayhew Wash Bridge Widening PM 31.97							$0.00	
Temescal Canyon Road UC Widening PM 33.25							$0.00	
Brown Canyon Wash Bridge Widening PM 34.72							$0.00	
Dos Lagos Bridge Widening							$0.00	
Bedford Wash Bridge Widening							$0.00	
III. Right of Way								
Right of Way Acquisition							$0.00	

I.	***Roadway Items***	$1,507,000.00
	Earthwork	$191,000.00
	Pavement Structural Section	$987,000.00
	Specialty Items	$43,000.00
	Traffic Items	$286,000.00
II.	***Structural Items***	$840,000.00
III.	***Right of Way***	$0.00

Project #8, I-15 SB, from El Cerrito Rd Off-Ramp to Cajalco Rd Off-Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$1,153,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$3,814,000***	
SECTION 3: DRAINAGE	***$857,700***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Speciallty Items	***$288,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$463,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$328,785***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$657,570***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$328,785***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$3,156,336***	
II. STRUCTURE ITEMS		
BRIDGES	***$975,000***	
TOTAL CAPITAL OUTLAY COSTS	***$12,022,176***	
SUPPORT COSTS	***$4,208,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$16,230,000***	

Summary of Quantities

Project #8, I-15 SB, from El Cerrito Rd Off-Ramp to Cajalco Rd Off-Ramp

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (SB on Ramp Cajalco)	700.00	0-320	0-12	61799.11	CY	$15.00	$926,986.67	
Roadway Excavation (SB off Ramp Cajalco)	1000.00	0-175	0-5	10822.78	CY	$15.00	$162,341.67	
Roadway Excavation (SB on Ramp El Cerrito)	595.00	0-78	0-2	1750.96	CY	$15.00	$26,264.44	
Roadway Excavation (SB off Ramp El Cerrito)	780.00	8-84	0-2	2461.04	CY	$15.00	$36,915.56	
Pavment Structural Section								
Remove Concrete Pavement (Mainline)	6907.00	14.00		10744.22	SQYD	$36.38	$390,874.80	Existing shoulders at 14'
Class 2 Aggregate Subbase (Mainline)	6907.00	22.00		3939.55	CY	$72.10	$284,041.42	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)	6907.00	22.00		2754.17	TON	$85.00	$234,104.13	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (Mainline)	6907.00	22.00		5065.13	CY	$270.00	$1,367,586.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Cajalco)	468.00	10.00		520.00	SQYD	$36.38	$18,917.60	Existing shoulders at 10'
Class 2 Aggregate Subbase (SB on Ramp Cajalco)	468.00	24.00		291.20	CY	$72.10	$20,995.52	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Cajalco)	468.00	24.00		203.58	TON	$85.00	$17,304.30	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (SB on Ramp Cajalco)	468.00	24.00		374.40	CY	$270.00	$101,088.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Cajalco)	1225.00	8.00		1088.89	SQYD	$36.38	$39,613.78	
Class 2 Aggregate Subbase (SB off Ramp Cajalco)	1225.00	40.00		1270.37	CY	$72.10	$91,593.70	
Hot Mix Asphalt (Type A) (SB off Ramp Cajalco)	1225.00	40.00		888.13	TON	$85.00	$75,490.63	
Continously Reinforced Concrete Pavement (SB off Ramp Cajalco)	1225.00	40.00		1633.33	CY	$270.00	$441,000.00	
Remove Concrete Pavement (SB on Ramp El Cerrito)	820.00	8.00		728.89	SQYD	$36.38	$26,516.98	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp El Cerrito)	820.00	34.00		722.81	CY	$72.10	$52,114.95	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp El Cerrito)	820.00	34.00		505.33	TON	$85.00	$42,952.63	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (SB on Ramp El Cerrito)	820.00	34.00		929.33	CY	$270.00	$250,920.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp El Cerrito)	1060.00	10.00		1177.78	CY	$36.38	$42,847.56	Existing shoulders at 10'
Class 2 Aggregate Subbase (SB off Ramp El Cerrito)	1060.00	24.00		659.56	TON	$72.10	$47,553.96	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp El Cerrito)	1060.00	24.00		461.10	LF	$85.00	$39,193.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (SB off Ramp El Cerrito)	1060.00	24.00		848.00	LF	$270.00	$228,960.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Speciallty Items								
Structural Concrete (Retaining Wall)	16665.00			4792.22	SQFT	$60.00	$287,533.33	Retaing wall height 5'
Traffic Items								
Traffic Electrical								
Intersection Signalization				8.00	PER CORNER	$50,000.00	$400,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)	6907.00			6907.00	LF	$0.65	$4,489.55	
Thermoplastic Striping (Mainline)	13814.00			13814.00	LF	$2.41	$33,291.74	
Removal of Existing Striping (SB on Ramp Cajalco)	936.00			936.00	LF	$0.65	$608.40	
Thermoplastic Striping (SB on Ramp Cajalco)	936.00			936.00	LF	$2.41	$2,255.76	
Removal of Existing Striping (SB off Ramp Cajalco)	3215.00			3215.00	LF	$0.65	$2,089.75	
Thermoplastic Striping (SB off Ramp Cajalco)	3215.00			3215.00	LF	$2.41	$7,748.15	
Removal of Existing Striping (SB on Ramp El Cerrito)	1440.00			1440.00	LF	$0.65	$936.00	
Thermoplastic Striping (SB on Ramp El Cerrito)	1440.00			1440.00	LF	$2.41	$3,470.40	
Removal of Existing Striping (SB off Ramp El Cerrito)	2640.00			2640.00	LF	$0.65	$1,716.00	
Thermoplastic Striping (SB off Ramp El Cerrito)	2640.00			2640.00	LF	$2.41	$6,362.40	
Reconstruct Sign Structure				0.00	LF	$200,000.00	$0.00	
II. Structure Items								
Cajalco Road OC Tie Back	40.00	16.00		640.00	SQFT	$375.00	$240,000.00	
El Cerrito UC Widening	140.00	14.00		1960.00	SQFT	$375.00	$735,000.00	
III. Right of Way								

I.	***Roadway Items***	$5,718,000.00
	Earthwork	$1,153,000.00
	Pavment Structural Section	$3,814,000.00
	Speciallty Items	$288,000.00
	Traffic Items	$463,000.00
II.	***Structural Items***	$975,000.00
III.	***Right of Way***	$0.00

Project #8, I-15 SB at Cajalco Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$1,089,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$806,000***	
SECTION 3: DRAINAGE	***$316,200***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Speciallty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$213,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$121,210***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$242,420***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$121,210***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$1,163,616***	
II. STRUCTURE ITEMS		
BRIDGES	***$240,000***	
TOTAL CAPITAL OUTLAY COSTS	***$4,312,656***	
SUPPORT COSTS	***$1,509,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$5,822,000***	

Amount included in 2016 TUMF Nexus Study	***$44,257,000.00***
Amount to be reduced from Total Project Costs	***$5,822,000.00***

Summary of Quantities

Project #8, I-15 SB at Cajalco Subtotal

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (SB on Ramp Cajalco)	700.00	0-320	0-12	61799.11	CY	$15.00	$926,986.67	
Roadway Excavation (SB off Ramp Cajalco)	1000.00	0-175	0-5	10822.78	CY	$15.00	$162,341.67	
Roadway Excavation (SB on Ramp El Cerrito)							$0.00	
Roadway Excavation (SB off Ramp El Cerrito)							$0.00	
Pavment Structural Section								
Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 14'
Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Cajalco)	468.00	10.00		520.00	SQYD	$36.38	$18,917.60	Existing shoulders at 10'
Class 2 Aggregate Subbase (SB on Ramp Cajalco)	468.00	24.00		291.20	CY	$72.10	$20,995.52	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Cajalco)	468.00	24.00		203.58	TON	$85.00	$17,304.30	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (SB on Ramp Cajalco)	468.00	24.00		374.40	CY	$270.00	$101,088.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Cajalco)	1225.00	8.00		1088.89	SQYD	$36.38	$39,613.78	
Class 2 Aggregate Subbase (SB off Ramp Cajalco)	1225.00	40.00		1270.37	CY	$72.10	$91,593.70	
Hot Mix Asphalt (Type A) (SB off Ramp Cajalco)	1225.00	40.00		888.13	TON	$85.00	$75,490.63	
Continously Reinforced Concrete Pavement (SB off Ramp Cajalco)	1225.00	40.00		1633.33	CY	$270.00	$441,000.00	
Remove Concrete Pavement (SB on Ramp El Cerrito)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp El Cerrito)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp El Cerrito)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (SB on Ramp El Cerrito)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp El Cerrito)							$0.00	Existing shoulders at 10'
Class 2 Aggregate Subbase (SB off Ramp El Cerrito)							$0.00	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp El Cerrito)							$0.00	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (SB off Ramp El Cerrito)							$0.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Speciallty Items								
Structural Concrete (Retaining Wall)							$0.00	Retaing wall height 5'
Traffic Items								
Traffic Electrical								
Intersection Signalization				*4.00*	PER CORNER	$50,000.00	$200,000.00	
Traffic Signing and Striping						$0.00		
Removal of Existing Striping (Mainline)							$0.00	
Thermoplastic Striping (Mainline)							$0.00	
Removal of Existing Striping (SB on Ramp Cajalco)	936.00			936.00	LF	$0.65	$608.40	
Thermoplastic Striping (SB on Ramp Cajalco)	936.00			936.00	LF	$2.41	$2,255.76	
Removal of Existing Striping (SB off Ramp Cajalco)	3215.00			3215.00	LF	$0.65	$2,089.75	
Thermoplastic Striping (SB off Ramp Cajalco)	3215.00			3215.00	LF	$2.41	$7,748.15	
Removal of Existing Striping (SB on Ramp El Cerrito)							$0.00	
Thermoplastic Striping (SB on Ramp El Cerrito)							$0.00	
Removal of Existing Striping (SB off Ramp El Cerrito)							$0.00	
Thermoplastic Striping (SB off Ramp El Cerrito)							$0.00	
Reconstruct Sign Structure				0.00	LF	$200,000.00	$0.00	
II. Structure Items								
Cajalco Road OC Tie Back	40.00	16.00		640.00	SQFT	$375.00	$240,000.00	
El Cerrito UC Widening							$0.00	
III. Right of Way								

I.	***Roadway Items***	$2,108,000.00
	Earthwork	$1,089,000.00
	Pavment Structural Section	$806,000.00
	Speciallty Items	$0.00
	Traffic Items	$213,000.00
II.	***Structural Items***	$240,000.00
III.	***Right of Way***	$0.00

Project #9, SR-60 EB, from Rubidoux Blvd. On-Ramp to Main St Off-Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$311,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$4,621,000***	
SECTION 3: DRAINAGE	***$935,550***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Speciallty Items	***$227,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$1,078,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$358,628***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$717,255***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$358,628***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$3,442,824***	
II. STRUCTURE ITEMS		
BRIDGES	***$17,753,000***	
TOTAL CAPITAL OUTLAY COSTS	***$29,802,884***	
SUPPORT COSTS	***$10,431,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$40,234,000***	

Summary of Quantities

Project #9, SR-60 EB, from Rubidoux Blvd. On-Ramp to Main St Off-Ramp

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (EB on Ramp Market St)	955.00	17-48	0-10	10247.78	CY	$15.00	$153,716.67	
Roadway Excavation (EB off Ramp Market St)	620.00	7-65	0-15	10493.89	CY	$15.00	$157,408.33	
Pavment Structural Section						$0.00		
Remove Concrete Pavement (Mainline)	11025.00	10.00		12250.00	SQYD	$36.38	$445,655.00	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)	11025.00	22.00		6288.33	CY	$72.10	$453,388.83	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)	11025.00	22.00		4396.22	TON	$85.00	$373,678.59	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (Mainline)	11025.00	22.00		8085.00	CY	$270.00	$2,182,950.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (EB On Ramp Main St)	535.00	8.00		475.56	SQYD	$36.38	$17,300.71	Existing shoulders at 8'
Class 2 Aggregate Subbase (EB On Ramp Main St)	535.00	32.00		443.85	CY	$72.10	$32,001.72	Lane plus shoulder at 32' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (EB On Ramp Main St)	535.00	32.00		310.30	TON	$85.00	$26,375.50	Lane plus shoulder at 32' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (EB On Ramp Main St)	535.00	32.00		570.67	CY	$270.00	$154,080.00	Lane plus shoulder at 32' with a CRCP depth of 0.90'
Remove Concrete Pavement (EB Off Ramp Main St)	700.00	8.00		622.22	SQYD	$36.38	$22,636.44	Existing shoulders at 8'
Class 2 Aggregate Subbase (EB Off Ramp Main St)	700.00	20.00		362.96	CY	$72.10	$26,169.63	Lane plus shoulder at 20' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (EB Off Ramp Main St)	700.00	20.00		253.75	TON	$85.00	$21,568.75	Lane plus shoulder at 20' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement t (EB Off Ramp Main St)	700.00	20.00		466.67	CY	$270.00	$126,000.00	Lane plus shoulder at 20' with a CRCP depth of 0.90'
Remove Concrete Pavement (EB on Ramp Market St)	900.00	8.00		800.00	SQYD	$36.38	$29,104.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (EB on Ramp Market St)	900.00	24.00		560.00	CY	$72.10	$40,376.00	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (EB on Ramp Market St)	900.00	24.00		391.50	TON	$85.00	$33,277.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (EB on Ramp Market St)	900.00	24.00		720.00	CY	$270.00	$194,400.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Remove Concrete Pavement (EB off Ramp Market St)	1340.00	8.00		1191.11	SQYD	$36.38	$43,332.62	Existing shoulders at 8'
Class 2 Aggregate Subbase (EB off Ramp Market St)	1340.00	24.00		833.78	CY	$72.10	$60,115.38	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (EB off Ramp Market St)	1340.00	24.00		582.90	TON	$85.00	$49,546.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continously Reinforced Concrete Pavement (EB off Ramp Market St)	1340.00	24.00		1072.00	CY	$270.00	$289,440.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Speciallty Items						$0.00		
Remove Sound Wall	1920.00			1920.00	LF	$27.00	$51,840.00	
Sound Wall	1920.00			1920.00	SQFT	$23.98	$46,041.60	6' High sound wall
Structural Concrete (Retaining Wall)	3885.00			2158.33	SQFT	$60.00	$129,500.00	Retaining wall height 5'
Traffic Items								
Traffic Electrical								
Intersection Signalization				8.00	PER CORNER	$50,000.00	$400,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)	11025.00			11025.00	LF	$0.65	$7,166.25	
Thermoplastic Striping (Mainline)	22050.00			22050.00	LF	$2.41	$53,140.50	
Removal of Existing Striping (EB On Ramp Main St)	865.00			865.00	LF	$0.65	$562.25	
Thermoplastic Striping (EB On Ramp Main St)	865.00			865.00	LF	$2.41	$2,084.65	
Removal of Existing Striping (EB Off Ramp Main St)	1400.00			1400.00	LF	$0.65	$910.00	
Thermoplastic Striping (EB Off Ramp Main St)	1400.00			1400.00	LF	$2.41	$3,374.00	
Removal of Existing Striping (EB on Ramp Market St)	1640.00			1640.00	LF	$0.65	$1,066.00	
Thermoplastic Striping (EB on Ramp Market St)	1640.00			1640.00	LF	$2.41	$3,952.40	
Removal of Existing Striping (EB off Ramp Market St)	1850.00			1850.00	LF	$0.65	$1,202.50	
Thermoplastic Striping (EB off Ramp Market St)	1850.00			1850.00	LF	$2.41	$4,458.50	
Reconstruct Sign Structure				3.00	EA	$200,000.00	$600,000.00	
II. Structure Items								
Orange St Bridge Replacement	56.00	220.00		12320.00	SQFT	$250.00	$3,080,000.00	
Main St Bridfge Replacement	72.00	210.00		15120.00	SQFT	$250.00	$3,780,000.00	
Fairmount Blvd Bridge Widening	115.00	14.00		1610.00	SQFT	$375.00	$603,750.00	
Market St Bridge Widening	278.00	14.00		3892.00	SQFT	$375.00	$1,459,500.00	
Santa Ana River Bridge Widening	1120.00	14.00		15680.00	SQ FT	$375.00	$5,880,000.00	
Hall Ave Bridge Replacement	40.00	295.00		11800.00	SQ FT	$250.00	$2,950,000.00	
III. Right of Way								

I.	***Roadway Items***	$6,237,000.00
	Earthwork	$311,000.00
	Pavment Structural Section	$4,621,000.00
	Speciallty Items	$227,000.00
	Traffic Items	$1,078,000.00
II.	***Structural Items***	$17,753,000.00
III.	***Right of Way***	$0.00

Project #10, I-215 NB, from Box Springs Rd. On-Ramp to Martin Luther King Jr. On-Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$1,077,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$4,546,000***	
SECTION 3: DRAINAGE	***$1,244,400***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$1,369,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$1,304,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$477,020***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$954,040***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$477,020***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$4,579,392***	
II. STRUCTURE ITEMS		
BRIDGES	***$2,546,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$1,065,000***	
TOTAL CAPITAL OUTLAY COSTS	***$19,638,872***	
SUPPORT COSTS	***$6,874,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$26,513,000***	

Summary of Quantities

Project #10, I-215 NB, from Box Springs Rd. On-Ramp to Martin Luther King Jr. On-Ramp

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (New Road)	1891.00	20.00	0-5	7016.11	CY	$15.00	$105,241.67	
	Roadway Excavation (NB off Ramp Central)	790.00	0-85	0-19	30291.63	CY	$15.00	$454,374.44	
	Roadway Excavation (NB on Ramp Central)	647	0-100	0-20	34520.00	CY	$15.00	$517,800.00	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)	7570.00	10.00		8411.11	SQYD	$36.38	$305,996.22	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)	7570.00	22.00		4317.70	CY	$72.10	$311,306.44	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)	7570.00	22.00		3018.54	TON	$85.00	$256,575.69	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)	7570.00	22.00		5551.33	CY	$270.00	$1,498,860.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB off Ramp Central)	1350.00	8.00		1200.00	SQYD	$36.38	$43,656.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB off Ramp Central)	1350.00	38.00		1330.00	CY	$72.10	$95,893.00	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB off Ramp Central)	1350.00	38.00		929.81	TON	$85.00	$79,034.06	Lane plus shoulder at 38' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB off Ramp Central)	1350.00	38.00		1710.00	CY	$270.00	$461,700.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB on Ramp Central)	755.00	8.00		671.11	SQYD	$36.38	$24,415.02	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB on Ramp Central)	755.00	30.00		587.22	CY	$72.10	$42,338.72	Lane plus shoulder at 30' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB on Ramp Central)	755.00	30.00		410.53	TON	$85.00	$34,895.16	Lane plus shoulder at 30' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB on Ramp Central)	755.00	30.00		755.00	CY	$270.00	$203,850.00	Lane plus shoulder at 30' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB off Ramp Martin Luther King)	1335.00	8.00		1186.67	SQYD	$36.38	$43,170.93	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB off Ramp Martin Luther King)	1335.00	38.00		1315.22	CY	$72.10	$94,827.52	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB off Ramp Martin Luther King)	1335.00	38.00		919.48	TON	$85.00	$78,155.91	Lane plus shoulder at 38' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB off Ramp Martin Luther King)	1335.00	38.00		1691.00	CY	$270.00	$456,570.00	Lane plus shoulder at 38"with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB on Ramp Martin Luther King)	930.00	8.00		826.67	SQYD	$36.38	$30,074.13	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB on Ramp Martin Luther King)	930.00	42.00		1012.67	CY	$72.10	$73,013.27	Lane plus shoulder at 42' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB on Ramp Martin Luther King)	930.00	42.00		707.96	TON	$85.00	$60,176.81	Lane plus shoulder at 42' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB on Ramp Martin Luther King)	930.00	42.00		1302.00	CY	$270.00	$351,540.00	Lane plus shoulder at 42' with a CRCP depth of 0.90'
	Specialty Items						$0.00		
	Remove Sound Wall	1000.00			1000.00	LF	$27.00	$27,000.00	
	Sound Wall	1000.00			1000.00	SQFT	$23.98	$23,980.00	6' High sound wall
	Remove Retaining Wall	7430.00			7430.00	LF	$15.00	$111,450.00	
	Structural Concrete (Retaining Wall)	410.00			501.11	SQFT	$80.00	$40,088.89	Retaining wall height 11'
	Structural Concrete (Retaining Wall)	4100.00			6833.33	SQFT	$90.00	$615,000.00	Retaining wall height 15'
	Structural Concrete (Retaining Wall)	2920.00			5515.56	SQFT	$100.00	$551,555.56	Retaining wall height 17'
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization				4.00	PER CORNER	$50,000.00	$200,000.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)	13560.00			13560.00	LF	$0.65	$8,814.00	
	Thermoplastic Striping (Mainline)	27120.00			27120.00	LF	$2.41	$65,359.20	
	Removal of Existing Striping (NB off Ramp Central)	2438.00			2438.00	LF	$0.65	$1,584.70	
	Thermoplastic Striping (NB off Ramp Central)	2438.00			2438.00	LF	$2.41	$5,875.58	
	Removal of Existing Striping (NB on Ramp Central)	1345.00			1345.00	LF	$0.65	$874.25	
	Thermoplastic Striping (NB on Ramp Central)	1345.00			1345.00	LF	$2.41	$3,241.45	
	Removal of Existing Striping (NB off Ramp Martin Luther King)	3425.00			3425.00	LF	$0.65	$2,226.25	
	Thermoplastic Striping (NB off Ramp Martin Luther King)	3425.00			3425.00	LF	$2.41	$8,254.25	
	Removal of Existing Striping (NB on Ramp Martin Luther King)	2461.00			2461.00	LF	$0.65	$1,599.65	
	Thermoplastic Striping (NB on Ramp Martin Luther King)	2461.00			2461.00	LF	$2.41	$5,931.01	
	Reconstruct Sign Structure				5.00	EA	$200,000.00	$1,000,000.00	
II. Structure Items									
	Central Bridge Widening	150.00	14.00		2100.00	SQFT	$375.00	$787,500.00	
	Martin Luther King Widening	175.00	14.00		2450.00	SQFT	$375.00	$918,750.00	
	Canyon Crest Widening	160.00	14.00		2240.00	SQFT	$375.00	$840,000.00	
III. Right of Way									
	Right of Way Acquisition #1	1950.00	10.00		19500.00	SQFT	$50.00	$975,000.00	
	Right of Way Acquisition #2	360.00	5.00		1800.00	SQFT	$50.00	$90,000.00	

I.	***Roadway Items***	$8,296,000.00
	Earthwork	$1,077,000.00
	Pavement Structural Section	$4,546,000.00
	Specialty Items	$1,369,000.00
	Traffic Items	$1,304,000.00
II.	***Structural Items***	$2,546,000.00
III.	***Right of Way***	$1,065,000.00

Project #10C, I-215 NB, Martin Luther King Off Ramp to SR-91		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$1,434,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$3,172,000***	
SECTION 3: DRAINAGE	***$1,193,850***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$1,888,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$1,465,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$457,643***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$915,285***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$457,643***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$4,393,368***	
II. STRUCTURE ITEMS		
BRIDGES	***$21,655,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$3,768,750***	
TOTAL CAPITAL OUTLAY COSTS	***$40,800,538***	
SUPPORT COSTS	***$14,280,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$55,081,000***	

Summary of Quantities

Project #10C, I-215 NB, Martin Luther King Off Ramp to SR-91

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (NB off Ramp University)	276.00	168	0-18	28446.67	CY	$15.00	$426,700.00	
Roadway Excavation (NB on Ramp University)	0-410	6-170	0-5	4946.67	CY	$15.00	$74,200.00	
Roadway Excavation (NB Off Ramp 3rd St)	600	6-34	0-6	5928.89	CY	$15.00	$88,933.33	
Roadway Excavation (NB On Ramp 3rd St)	436.00	6-38	0-15	4478.89	CY	$15.00	$67,183.33	
Pavement Structural Section						$0.00		
Remove Concrete Pavement (Mainline)	5867.00	10.00		6518.89	SQYD	$36.38	$237,157.18	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)	5867.00	22.00		3346.36	CY	$72.10	$241,272.77	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)	5867.00	22.00		2339.47	TON	$85.00	$198,854.63	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (Mainline)	5867.00	22.00		4302.47	CY	$270.00	$1,161,666.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB off Ramp University)	610.00	8.00		542.22	SQYD	$36.38	$19,726.04	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB off Ramp University)	610.00	42.00		664.22	CY	$72.10	$47,890.42	Lane plus shoulder at 42' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB off Ramp University)	610.00	42.00		464.36	TON	$85.00	$39,470.81	Lane plus shoulder at 42' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (NB off Ramp University)	610.00	42.00		854.00	CY	$270.00	$230,580.00	Lane plus shoulder at 42' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB on Ramp University)	936.00	8.00		832.00	SQYD	$36.38	$30,268.16	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB on Ramp University)	936.00	26.00		630.93	CY	$72.10	$45,490.29	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB on Ramp University)	936.00	26.00		441.09	TON	$85.00	$37,492.65	Lane plus shoulder at 26' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (NB on Ramp Central)	936.00	26.00		811.20	CY	$270.00	$219,024.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB Off Ramp 3rd St)	850.00	8.00		755.56	SQYD	$36.38	$27,487.11	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB Off Ramp 3rd St)	850.00	34.00		749.26	CY	$72.10	$54,021.59	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB Off Ramp 3rd St)	850.00	34.00		523.81	TON	$85.00	$44,524.06	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (NB Off Ramp 3rd St)	850.00	34.00		963.33	CY	$270.00	$260,100.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB On Ramp 3rd St)	610.00	8.00		542.22	SQYD	$36.38	$19,726.04	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB On Ramp 3rd St)	610.00	34.00		537.70	CY	$72.10	$38,768.44	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB On Ramp 3rd St)	610.00	34.00		375.91	TON	$85.00	$31,952.56	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (NB On Ramp 3rd St)	610.00	34.00		691.33	CY	$270.00	$186,660.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Specialty Items						$0.00		
Remove Sound Wall	2633.00			2633.00	LF	$27.00	$71,091.00	
Sound Wall	2633.00			2633.00	SQFT	$23.98	$63,139.34	6' High sound wall
Remove Retaining Wall	3444.00			3444.00	LF	$27.00	$92,988.00	
Structural Concrete (Retaining Wall)	34336.00			19075.56	SQFT	$60.00	$1,144,533.33	Retaining wall height 5'
Structural Concrete (Retaining Wall)	3444.00			5740.00	SQFT	$90.00	$516,600.00	Retaining wall height 15'
Traffic Items								
Traffic Electrical								
Intersection Signalization				8.00	PER CORNER	$50,000.00	$400,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)	11735.00			11735.00	LF	$0.65	$7,627.75	
Thermoplastic Striping (Mainline)	11735.00			11735.00	LF	$2.41	$28,281.35	
Removal of Existing Striping (NB off Ramp University)	2110.00			2110.00	LF	$0.65	$1,371.50	
Thermoplastic Striping (NB off Ramp University)	2110.00			2110.00	LF	$2.41	$5,085.10	
Removal of Existing Striping (NB on Ramp University)	2810.00			2810.00	LF	$0.65	$1,826.50	
Thermoplastic Striping (NB on Ramp University)	2810.00			2810.00	LF	$2.41	$6,772.10	
Removal of Existing Striping (NB Off Ramp 3rd St)	2660.00			2660.00	LF	$0.65	$1,729.00	
Thermoplastic Striping (NB Off Ramp 3rd St)	2660.00			2660.00	LF	$2.41	$6,410.60	
Removal of Existing Striping (NB On Ramp 3rd St)	1830.00			1830.00	LF	$0.65	$1,189.50	
Thermoplastic Striping (NB On Ramp 3rd St)	1830.00			1830.00	LF	$2.41	$4,410.30	
Reconstruct Sign Structure				5.00	EA	$200,000.00	$1,000,000.00	
II. Structure Items								
University Ave Bridge Widening	108.00	14.00		1512.00	SQFT	$375.00	$567,000.00	
Iowa Ave Bridge Replacement	400.00	120.00		48000.00	SQFT	$250.00	$12,000,000.00	
3rd St Bridge Replacement	256.00	142.00		36352.00	SQFT	$250.00	$9,088,000.00	
III. Right of Way								
Right of Way Acquisition #1	1075.00	5.00		5375.00	SQFT	$50.00	$268,750.00	
Right of Way Acquisition #2	500.00			10.00	PER HOUSE	$350,000.00	$3,500,000.00	$350,000 per property

I.	***Roadway Items***	$7,959,000.00
	Earthwork	$1,434,000.00
	Pavement Structural Section	$3,172,000.00
	Specialty Items	$1,888,000.00
	Traffic Items	$1,465,000.00
II.	***Structural Items***	$21,655,000.00
III.	***Right of Way***	$3,768,750.00

Project #11, I-215 NB, from Center St. off-Ramp to County Line/Iowa Ave.		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$1,388,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$2,919,000***	
SECTION 3: DRAINAGE	***$836,700***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$422,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$849,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$320,735***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$641,470***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$320,735***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$3,079,056***	
II. STRUCTURE ITEMS		
BRIDGES	***$25,566,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$400,000***	
TOTAL CAPITAL OUTLAY COSTS	***$36,742,696***	
SUPPORT COSTS	***$12,860,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$49,603,000***	

Summary of Quantities

Project #11, I-215 NB, from Center St. off-Ramp to County Line/Iowa Ave.

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (NB off Ramp Highgrove)	0-236	0+56	0-6	1596.67	CY	$15.00	$23,950.00	
	Roadway Excavation (NB off Ramp La Cadena)	646.00	0-260	0-12	37572.44	CY	$15.00	$563,586.67	
	Roadway Excavation (NB loop off Ramp La Cadena)	260	285.00	0-18	48333.33	CY	$15.00	$725,000.00	
	Roadway Excavation (NB on Ramp La Cadena)	0-430'	0-240	0-5	5037.41	CY	$15.00	$75,561.11	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)	5915.00	10.00		6572.22	SQYD	$36.38	$239,097.44	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)	5915.00	22.00		3373.74	CY	$72.10	$243,246.71	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)	5915.00	22.00		2358.61	TON	$85.00	$200,481.53	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)	5915.00	22.00		4337.67	CY	$270.00	$1,171,170.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB off Ramp Highgrove)	477.00	8.00		424.00	SQYD	$36.38	$15,425.12	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB off Ramp Highgrove)	477.00	48.00		593.60	CY	$72.10	$42,798.56	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB off Ramp Highgrove)	477.00	48.00		414.99	TON	$85.00	$35,274.15	Lane plus shoulder at 48' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB off Ramp Highgrove)	477.00	48.00		763.20	CY	$270.00	$206,064.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB off Ramp La Cadena)	1170.00	8.00		1040.00	SQYD	$36.38	$37,835.20	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB off Ramp La Cadena)	1170.00	30.00		910.00	CY	$72.10	$65,611.00	Lane plus shoulder at 30' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB off Ramp La Cadena)	1170.00	30.00		636.19	TON	$85.00	$54,075.94	Lane plus shoulder at 30' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB off Ramp La Cadena)	1170.00	30.00		1170.00	CY	$270.00	$315,900.00	Lane plus shoulder at 30' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB on Ramp La Cadena)	885.00	8.00		786.67	SQYD	$36.38	$28,618.93	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB on Ramp La Cadena)	885.00	24.00		550.67	CY	$72.10	$39,703.07	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB on Ramp La Cadena)	885.00	24.00		384.98	TON	$85.00	$32,722.88	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB on Ramp La Cadena)	885.00	24.00		708.00	CY	$270.00	$191,160.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Specialty Items								
	Remove Retaining Wall	1020.00			1020.00	LF	$15.00	$15,300.00	
	Structural Concrete (Retaining Wall)	1020.00			1133.33	SQFT	$80.00	$90,666.67	Retaining wall height 10'
	Concrete Barrier (Type 60)	3545.00			3545.00	LF	$82.40	$292,108.00	
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization				8.00	PER CORNER	$50,000.00	$400,000.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)	5915.00			5915.00	LF	$0.65	$3,844.75	
	Thermoplastic Striping (Mainline)	11830.00			11830.00	LF	$2.41	$28,510.30	
	Removal of Existing Striping (NB off Ramp Highgrove)	1170.00			1170.00	LF	$0.65	$760.50	
	Thermoplastic Striping (NB off Ramp Highgrove)	1170.00			1170.00	LF	$2.41	$2,819.70	
	Removal of Existing Striping (NB off Ramp La Cadena)	2340.00			2340.00	LF	$0.65	$1,521.00	
	Thermoplastic Striping (NB off Ramp La Cadena)	2340.00			2340.00	LF	$2.41	$5,639.40	
	Removal of Existing Striping (NB on Ramp La Cadena)	1770.00			1770.00	LF	$0.65	$1,150.50	
	Thermoplastic Striping (NB on Ramp La Cadena)	1770.00			1770.00	LF	$2.41	$4,265.70	
	Reconstruct Sign Structure				2.00	EA	$200,000.00	$400,000.00	
II. Structure Items									
	Center St Bridge Replacement	303.00	48.00		14544.00	SQFT	$250.00	$3,636,000.00	
	Iowa St Bridge Replacement	232.00	60.00		13920.00	SQFT	$250.00	$3,480,000.00	
	Railroad Bridge Replacement	410.00	120.00		49200.00	SQFT	$375.00	$18,450,000.00	Steel Truss Bridge- 4 track railroad
III. Right of Way									
	Right of Way Acquisition #1	1600.00	5.00		8000.00	SQFT	$50.00	$400,000.00	

I.	***Roadway Items***	$5,578,000.00
	Earthwork	$1,388,000.00
	Pavement Structural Section	$2,919,000.00
	Specialty Items	$422,000.00
	Traffic Items	$849,000.00
II.	***Structural Items***	$25,566,000.00
III.	***Right of Way***	$400,000.00

Project #11, I-215 NB at Highgrove/Center Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$24,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$300,000***	
SECTION 3: DRAINAGE	***$142,800***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$24,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$604,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$54,740***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$109,480***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$54,740***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$525,504***	
II. STRUCTURE ITEMS		
BRIDGES	***$3,636,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$5,475,264***	
SUPPORT COSTS	***$1,916,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$7,391,000***	

Amount included in 2016 TUMF Nexus Study	***$17,897,000.00***
Amount to be reduced from Total Project Costs	***$7,391,000.00***

Summary of Quantities

Project #11, I-215 NB at Highgrove/Center St Subtotal.

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (NB off Ramp Highgrove)	0-236	0+56	0-6	1596.67	CY	$15.00	$23,950.00	
Roadway Excavation (NB off Ramp La Cadena)							$0.00	
Roadway Excavation (NB loop off Ramp La Cadena)							$0.00	
Roadway Excavation (NB on Ramp La Cadena)							$0.00	
Pavement Structural Section						$0.00		
Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB off Ramp Highgrove)	477.00	8.00		424.00	SQYD	$36.38	$15,425.12	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB off Ramp Highgrove)	477.00	48.00		593.60	CY	$72.10	$42,798.56	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB off Ramp Highgrove)	477.00	48.00		414.99	TON	$85.00	$35,274.15	Lane plus shoulder at 48' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (NB off Ramp Highgrove)	477.00	48.00		763.20	CY	$270.00	$206,064.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB off Ramp La Cadena)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB off Ramp La Cadena)							$0.00	Lane plus shoulder at 30' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB off Ramp La Cadena)							$0.00	Lane plus shoulder at 30' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (NB off Ramp La Cadena)							$0.00	Lane plus shoulder at 30' with a CRCP depth of 0.90'
Remove Concrete Pavement (NB on Ramp La Cadena)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (NB on Ramp La Cadena)							$0.00	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (NB on Ramp La Cadena)							$0.00	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (NB on Ramp La Cadena)							$0.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Specialty Items								
Remove Retaining Wall							$0.00	
Structural Concrete (Retaining Wall)							$0.00	Retaining wall height 10'
Concrete Barrier (Type 60)							$0.00	
Traffic Items								
Traffic Electrical								
Intersection Signalization				*4.00*	PER CORNER	$50,000.00	$200,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)							$0.00	
Thermoplastic Striping (Mainline)							$0.00	
Removal of Existing Striping (NB off Ramp Highgrove)	1170.00			1170.00	LF	$0.65	$760.50	
Thermoplastic Striping (NB off Ramp Highgrove)	1170.00			1170.00	LF	$2.41	$2,819.70	
Removal of Existing Striping (NB off Ramp La Cadena)							$0.00	
Thermoplastic Striping (NB off Ramp La Cadena)							$0.00	
Removal of Existing Striping (NB on Ramp La Cadena)							$0.00	
Thermoplastic Striping (NB on Ramp La Cadena)							$0.00	
Reconstruct Sign Structure				2.00	EA	$200,000.00	$400,000.00	
II. Structure Items								
Center St Bridge Replacement	303.00	48.00		14544.00	SQFT	$250.00	$3,636,000.00	
Iowa St Bridge Replacement							$0.00	
Railroad Bridge Replacement							$0.00	Steel Truss Bridge- 4 track railroad
III. Right of Way								
Right of Way Acquisition #1							$0.00	

I.	***Roadway Items***	$952,000.00
	Earthwork	$24,000.00
	Pavement Structural Section	$300,000.00
	Specialty Items	$24,000.00
	Traffic Items	$604,000.00
II.	***Structural Items***	$3,636,000.00
III.	***Right of Way***	$0.00

Project #12, I-215 SB, from Martin Luther King Blvd On-Ramp to Sycamore Canyon Rd Off-Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$119,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$2,740,000***	
SECTION 3: DRAINAGE	***$674,400***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$193,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$1,444,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$258,520***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$517,040***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$258,520***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$2,481,792***	
II. STRUCTURE ITEMS		
BRIDGES	***$814,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$427,500***	
TOTAL CAPITAL OUTLAY COSTS	***$9,927,772***	
SUPPORT COSTS	***$3,475,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$13,403,000***	

Summary of Quantities

Project #12, I-215 SB, from Martin Luther King Blvd Jr. On-Ramp to Sycamore Canyon Rd Off-Ramp

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (SB on Ramp Watkins)	400.00	22.00	0-13	3955.85	CY	$15.00	$59,337.78	
	Roadway Excavation (SB off Ramp Watkins)	450.00	0-32	0-13	3952.96	CY	$15.00	$59,294.44	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)	6370.00	10.00		7077.78	SQYD	$36.38	$257,489.56	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)	6370.00	22.00		3633.26	CY	$72.10	$261,957.99	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)	6370.00	22.00		2540.04	TON	$85.00	$215,903.19	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)	6370.00	22.00		4671.33	CY	$270.00	$1,261,260.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Watkins)	530.00	8.00		471.11	SQYD	$36.38	$17,139.02	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Watkins)	530.00	40.00		549.63	CY	$72.10	$39,628.30	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Watkins)	530.00	40.00		384.25	TON	$85.00	$32,661.25	Lane plus shoulder at 48' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Watkins)	530.00	40.00		706.67	CY	$270.00	$190,800.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Watkins)	710.00	8.00		631.11	SQYD	$36.38	$22,959.82	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Watkins)	710.00	50.00		920.37	CY	$72.10	$66,358.70	Lane plus shoulder at 30' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Watkins)	710.00	50.00		643.44	TON	$85.00	$54,692.19	Lane plus shoulder at 30' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Watkins)	710.00	50.00		1183.33	CY	$270.00	$319,500.00	Lane plus shoulder at 30' with a CRCP depth of 0.90'
	Sec 3. Drainage								
	Specialty Items						$0.00		
	Remove Retaining Wall	2065.00			2065.00	LF	$15.00	$30,975.00	
	Structural Concrete (Retaining Wall)	2065.00			1835.56	SQFT	$75.00	$137,666.67	Retaining wall height 8'
	Sec 5. Environmental								
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization				4.00	PER CORNER	$50,000.00	$200,000.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)	6370.00			6370.00	LF	$0.65	$4,140.50	
	Thermoplastic Striping (Mainline)	12740.00			12740.00	LF	$2.41	$30,703.40	
	Removal of Existing Striping (SB on Ramp Watkins)	1319.00			1319.00	LF	$0.65	$857.35	
	Thermoplastic Striping (SB on Ramp Watkins)	1319.00			1319.00	LF	$2.41	$3,178.79	
	Removal of Existing Striping (SB off Ramp Watkins)	1705.00			1705.00	LF	$0.65	$1,108.25	
	Thermoplastic Striping (SB off Ramp Watkins)	1705.00			1705.00	LF	$2.41	$4,109.05	
	Reconstruct Sign Structure				6.00	EA	$200,000.00	$1,200,000.00	
II. Structure Items									
	Watkins Dr Bridge Widening	155.00	14.00		2170.00	SQFT	$375.00	$813,750.00	
III. Right of Way									
	Right of Way Acquisition #1	570.00	15.00		8550.00	SQFT	$50.00	$427,500.00	

I.	***Roadway Items***	$4,496,000.00
	Earthwork	$119,000.00
	Pavement Structural Section	$2,740,000.00
	Specialty Items	$193,000.00
	Traffic Items	$1,444,000.00
II.	***Structural Items***	$814,000.00
III.	***Right of Way***	$427,500.00

Project #13 I-215 SB, from Van Buren On Ramp to Case Rd Off Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$2,578,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$20,307,000***	
SECTION 3: DRAINAGE	***$4,037,100***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$446,000***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$3,583,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$1,547,555***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$3,095,110***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$1,547,555***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$14,856,528***	
II. STRUCTURE ITEMS		
BRIDGES	***$42,690,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$360,000***	
TOTAL CAPITAL OUTLAY COSTS	***$95,047,848***	
SUPPORT COSTS	***$33,267,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$128,315,000***	

Summary of Quantities

Project #13, I-215 SB, from Van Buren On Ramp to Case Rd Off Ramp

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (SB off Ramp Harley Knox)	845.00	26-85	0-15	24160.00	CY	$15.00	$362,400.00	
Roadway Excavation (SB on Ramp Harley Knox)	480.00	21-76	0-15	14576.11	CY	$15.00	$218,641.67	
Roadway Excavation (SB off Ramp Ramona)	700.00	18-100	0-11	14719.22	CY	$15.00	$220,788.33	
Roadway Excavation (SB off Ramp Nuevo)	588.00	26-95	0-15	16787.22	CY	$15.00	$251,808.33	
Roadway Excavation (SB on Ramp Nuevo)	790.00	25-102	0-15	32457.22	CY	$15.00	$486,858.33	
Roadway Excavation (SB off Ramp D st)	775.00	0-21	0-18	29114.00	CY	$15.00	$436,710.00	
Roadway Excavation (SB off Ramp Redlands)	695.00	19-80	0-15	22228.33	CY	$15.00	$333,425.00	
Roadway Excavation (SB on Ramp Redlands)	778.00	20-80	0-15	17835.56	CY	$15.00	$267,533.33	
Pavement Structural Section						$0.00		
Remove Concrete Pavement (Mainline)	52230.00	10.00		58033.33	SQYD	$36.38	$2,111,252.67	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)	52230.00	22.00		29790.44	CY	$72.10	$2,147,891.04	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)	52230.00	22.00		20826.71	TON	$85.00	$1,770,270.56	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (Mainline)	52230.00	22.00		38302.00	CY	$270.00	$10,341,540.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Harley Knox)	1450.00	8.00		1288.89	SQYD	$36.38	$46,889.78	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Harley Knox)	1450.00	34.00		1278.15	CY	$72.10	$92,154.48	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Harley Knox)	1450.00	34.00		893.56	TON	$85.00	$75,952.81	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Harley Knox)	1450.00	34.00		1643.33	CY	$270.00	$443,700.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Harley Knox)	860.00	8.00		764.44	SQYD	$36.38	$27,810.49	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Harley Knox)	860.00	32.00		713.48	CY	$72.10	$51,442.01	Lane plus shoulder at 32' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Harley Knox)	860.00	32.00		498.80	TON	$85.00	$42,398.00	Lane plus shoulder at 32' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Harley Knox)	860.00	32.00		917.33	CY	$270.00	$247,680.00	Lane plus shoulder at 32' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Ramona)	720.00	8.00		640.00	SQYD	$36.38	$23,283.20	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Ramona)	720.00	48.00		896.00	CY	$72.10	$64,601.60	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Ramona)	720.00	48.00		626.40	TON	$85.00	$53,244.00	Lane plus shoulder at 48' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Ramona)	720.00	48.00		1152.00	CY	$270.00	$311,040.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Nuevo)	1040.00	8.00		924.44	SQYD	$36.38	$33,631.29	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Nuevo)	1040.00	26.00		701.04	CY	$72.10	$50,544.77	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Nuevo)	1040.00	26.00		490.10	TON	$85.00	$41,658.50	Lane plus shoulder at 26' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Nuevo)	1040.00	26.00		901.33	CY	$270.00	$243,360.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Nuevo)	1420.00	8.00		1262.22	SQYD	$36.38	$45,919.64	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Nuevo)	1420.00	24.00		883.56	CY	$72.10	$63,704.36	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Nuevo)	1420.00	24.00		617.70	TON	$85.00	$52,504.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Nuevo)	1420.00	24.00		1136.00	CY	$270.00	$306,720.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp D st)	1280.00	8.00		1137.78	SQYD	$36.38	$41,392.36	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp D st)	1280.00	38.00		1261.04	CY	$72.10	$90,920.77	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp D st)	1280.00	38.00		881.60	TON	$85.00	$74,936.00	Lane plus shoulder at 38' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp D st)	1280.00	38.00		1621.33	CY	$270.00	$437,760.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Redlands)	1075.00	8.00		955.56	SQYD	$36.38	$34,763.11	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Redlands)	1075.00	34.00		34.00	CY	$72.10	$2,451.40	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Redlands)	1075.00	34.00		662.47	TON	$85.00	$56,309.84	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Redlands)	1075.00	34.00		1218.33	CY	$270.00	$328,950.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Redlands)	1040.00	8.00		924.44	SQYD	$36.38	$33,631.29	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Redlands)	1040.00	40.00		1078.52	CY	$72.10	$77,761.19	Lane plus shoulder at 40' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Redlands)	1040.00	40.00		754.00	TON	$85.00	$64,090.00	Lane plus shoulder at 40' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Redlands)	1040.00	40.00		1386.67	CY	$270.00	$374,400.00	Lane plus shoulder at 40' with a CRCP depth of 0.90'
Sec 3. Drainage								
Specialty Items						$0.00		
Remove Sound Wall	1020.00			1020.00	LF	$27.00	$27,540.00	
Sound Wall	1020.00			1020.00	SQFT	$23.98	$24,459.60	
Remove Retaining Wall	1020.00			1020.00	LF	$15.00	$15,300.00	
Structural Concrete (Retaining Wall)	1020.00			1020.00	SQFT	$75.00	$76,500.00	Retaining wall height 9'
Concrete Barrier (Type 60)	3665.00			3665.00	LF	$82.40	$301,996.00	
Traffic Items								
Traffic Electrical								
Intersection Signalization				16.00	PER CORNER	$50,000.00	$800,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)	60115.00			60115.00	LF	$0.65	$39,074.75	
Thermoplastic Striping (Mainline)	120230.00			120230.00	LF	$2.41	$289,754.30	
Removal of Existing Striping (SB off Ramp Harley Knox)	2900.00			2900.00	LF	$0.65	$1,885.00	
Thermoplastic Striping (SB off Ramp Harley Knox)	2900.00			2900.00	LF	$2.41	$6,989.00	
Removal of Existing Striping (SB on Ramp Harley Knox)	1720.00			1720.00	LF	$0.65	$1,118.00	
Thermoplastic Striping (SB on Ramp Harley Knox)	1720.00			1720.00	LF	$2.41	$4,145.20	
Removal of Existing Striping (SB off Ramp Ramona)	2320.00			2320.00	LF	$0.65	$1,508.00	
Thermoplastic Striping (SB off Ramp Ramona)	2320.00			2320.00	LF	$2.41	$5,591.20	
Removal of Existing Striping (SB off Ramp Nuevo)	2080.00			2080.00	LF	$0.65	$1,352.00	
Thermoplastic Striping (SB off Ramp Nuevo)	2080.00			2080.00	LF	$2.41	$5,012.80	
Removal of Existing Striping (SB on Ramp Nuevo)	2840.00			2840.00	LF	$0.65	$1,846.00	
Thermoplastic Striping (SB on Ramp Nuevo)	2840.00			2840.00	LF	$2.41	$6,844.40	
Removal of Existing Striping (SB off Ramp Redlands)	2150.00			2150.00	LF	$0.65	$1,397.50	
Thermoplastic Striping (SB off Ramp Redlands)	2560.00			2560.00	LF	$2.41	$6,169.60	
Removal of Existing Striping (SB on Ramp Redlands)	3380.00			3380.00	LF	$0.65	$2,197.00	
Thermoplastic Striping (SB on Ramp Redlands)	3380.00			3380.00	LF	$2.41	$8,145.80	
Reconstruct Sign Structure				12.00	EA	$200,000.00	$2,400,000.00	
II. Structure Items								
Ramona Bridge Replacement	220.00	125.00		27500.00	0.00	$250.00	$6,875,000.00	
Harley Knox Bridge Replacement	220.00	82.00		18040.00	SQFT	$250.00	$4,510,000.00	
Placentia Bridge Replacement	215.00	72.00		15480.00	SQFT	$250.00	$3,870,000.00	
Nuevo Rd Bridge Replacement	260.00	106.00		27560.00	SQFT	$250.00	$6,890,000.00	
D St Bridge Tieback	260.00	16.00		4160.00	SQFT	$250.00	$1,040,000.00	
Perris Blvd Bridge Replacement	560.00	90.00		50400.00	SQ FT	$250.00	$12,600,000.00	
Redlands Bridge Tieback	125.00	16.00		2000.00	SQ FT	$250.00	$500,000.00	
Bridge Structure 1	490.00	14.00		6860.00	SQFT	$375.00	$2,572,500.00	
Bridge Structure 2	230.00	14.00		3220.00	SQFT	$375.00	$1,207,500.00	
Bridge Structure 3	500.00	14.00		7000.00	SQFT	$375.00	$2,625,000.00	
III. Right of Way								
Right of Way Acquisition #1	480.00	15.00		7200.00	SQFT	$50.00	$360,000.00	

I.	***Roadway Items***	$26,914,000.00
	Earthwork	$2,578,000.00
	Pavement Structural Section	$20,307,000.00
	Specialty Items	$446,000.00
	Traffic Items	$3,583,000.00
II.	***Structural Items***	$42,690,000.00
III.	***Right of Way***	$360,000.00

Project #13 I-215 SB at Perris Overcrossing Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$0***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$0***	
SECTION 3: DRAINAGE	***$0***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$0***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$0***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$0***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$0***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$0***	
II. STRUCTURE ITEMS		
BRIDGES	***$500,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$500,000***	
SUPPORT COSTS	***$175,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$675,000***	
Amount included in 2016 TUMF Nexus Study	***$1,356,000.00***	
Amount to be reduced from Total Project Costs	***$675,000.00***	

Summary of Quantities

Project #13, I-215 SB at Perris Overcrossing Subtotal

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (SB off Ramp Harley Knox)							$0.00	
	Roadway Excavation (SB on Ramp Harley Knox)							$0.00	
	Roadway Excavation (SB off Ramp Ramona)							$0.00	
	Roadway Excavation (SB off Ramp Nuevo)							$0.00	
	Roadway Excavation (SB on Ramp Nuevo)							$0.00	
	Roadway Excavation (SB off Ramp D st)							$0.00	
	Roadway Excavation (SB off Ramp Redlands)							$0.00	
	Roadway Excavation (SB on Ramp Redlands)							$0.00	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Ramona)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Nuevo)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Nuevo)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp D st)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Redlands)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Redlands)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a CRCP depth of 0.90'
	Sec 3. Drainage								
	Specialty Items						$0.00		
	Remove Sound Wall							$0.00	
	Sound Wall							$0.00	
	Remove Retaining Wall							$0.00	
	Structural Concrete (Retaining Wall)							$0.00	Retaining wall height 9'
	Concrete Barrier (Type 60)							$0.00	
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization							$0.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)							$0.00	
	Thermoplastic Striping (Mainline)							$0.00	
	Removal of Existing Striping (SB off Ramp Harley Knox)							$0.00	
	Thermoplastic Striping (SB off Ramp Harley Knox)							$0.00	
	Removal of Existing Striping (SB on Ramp Harley Knox)							$0.00	
	Thermoplastic Striping (SB on Ramp Harley Knox)							$0.00	
	Removal of Existing Striping (SB off Ramp Ramona)							$0.00	
	Thermoplastic Striping (SB off Ramp Ramona)							$0.00	
	Removal of Existing Striping (SB off Ramp Nuevo)							$0.00	
	Thermoplastic Striping (SB off Ramp Nuevo)							$0.00	
	Removal of Existing Striping (SB on Ramp Nuevo)							$0.00	
	Thermoplastic Striping (SB on Ramp Nuevo)							$0.00	
	Removal of Existing Striping (SB off Ramp Redlands)							$0.00	
	Thermoplastic Striping (SB off Ramp Redlands)							$0.00	
	Removal of Existing Striping (SB on Ramp Redlands)							$0.00	
	Thermoplastic Striping (SB on Ramp Redlands)							$0.00	
	Reconstruct Sign Structure							$0.00	
II. Structure Items									
	Ramona Bridge Replacement							$0.00	
	Harley Knox Bridge Replacement							$0.00	
	Placentia Bridge Replacement							$0.00	
	Nuevo Rd Bridge Replacement							$0.00	
	D St Bridge Tieback							$0.00	
	Perris Blvd Bridge Replacement							$0.00	
	Redlands Bridge Tieback	125.00	16.00		2000.00	SQ FT	$250.00	$500,000.00	
	Bridge Structure 1							$0.00	
	Bridge Structure 2							$0.00	
	Bridge Structure 3							$0.00	
III. Right of Way									
	Right of Way Acquisition #1							$0.00	

I.	***Roadway Items***	$0.00
	Earthwork	$0.00
	Pavement Structural Section	$0.00
	Specialty Items	$0.00
	Traffic Items	$0.00
II.	***Structural Items***	$500,000.00
III.	***Right of Way***	$0.00

Project #13 I-215 SB at Nuevo Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$739,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$838,000***	
SECTION 3: DRAINAGE	***$268,800***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$215,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$103,040***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$206,080***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$103,040***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$989,184***	
II. STRUCTURE ITEMS		
BRIDGES	***$6,890,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$10,352,144***	
SUPPORT COSTS	***$3,623,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$13,975,000***	

Amount included in 2016 TUMF Nexus Study	***$17,897,000.00***
Amount to be reduced from Total Project Costs	***$13,975,000.00***

Summary of Quantities

Project #13, I-215 SB at Nuevo Subtotal

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (SB off Ramp Harley Knox)							$0.00	
Roadway Excavation (SB on Ramp Harley Knox)							$0.00	
Roadway Excavation (SB off Ramp Ramona)							$0.00	
Roadway Excavation (SB off Ramp Nuevo)	588.00	26-95	0-15	16787.22	CY	$15.00	$251,808.33	
Roadway Excavation (SB on Ramp Nuevo)	790.00	25-102	0-15	32457.22	CY	$15.00	$486,858.33	
Roadway Excavation (SB off Ramp D st)							$0.00	
Roadway Excavation (SB off Ramp Redlands)							$0.00	
Roadway Excavation (SB on Ramp Redlands)							$0.00	
Pavement Structural Section						$0.00		
Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Ramona)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Nuevo)	1040.00	8.00		924.44	SQYD	$36.38	$33,631.29	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Nuevo)	1040.00	26.00		701.04	CY	$72.10	$50,544.77	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Nuevo)	1040.00	26.00		490.10	TON	$85.00	$41,658.50	Lane plus shoulder at 26' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Nuevo)	1040.00	26.00		901.33	CY	$270.00	$243,360.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Nuevo)	1420.00	8.00		1262.22	SQYD	$36.38	$45,919.64	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Nuevo)	1420.00	24.00		883.56	CY	$72.10	$63,704.36	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Nuevo)	1420.00	24.00		617.70	TON	$85.00	$52,504.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Nuevo)	1420.00	24.00		1136.00	CY	$270.00	$306,720.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp D st)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Redlands)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Redlands)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a CRCP depth of 0.90'
Sec 3. Drainage								
Specialty Items						$0.00		
Remove Sound Wall							$0.00	
Sound Wall							$0.00	
Remove Retaining Wall							$0.00	
Structural Concrete (Retaining Wall)							$0.00	Retaining wall height 9'
Concrete Barrier (Type 60)							$0.00	
Traffic Items								
Traffic Electrical								
Intersection Signalization				*4.00*	PER CORNER	$50,000.00	$200,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)							$0.00	
Thermoplastic Striping (Mainline)							$0.00	
Removal of Existing Striping (SB off Ramp Harley Knox)							$0.00	
Thermoplastic Striping (SB off Ramp Harley Knox)							$0.00	
Removal of Existing Striping (SB on Ramp Harley Knox)							$0.00	
Thermoplastic Striping (SB on Ramp Harley Knox)							$0.00	
Removal of Existing Striping (SB off Ramp Ramona)							$0.00	
Thermoplastic Striping (SB off Ramp Ramona)							$0.00	
Removal of Existing Striping (SB off Ramp Nuevo)	2080.00			2080.00	LF	$0.65	$1,352.00	
Thermoplastic Striping (SB off Ramp Nuevo)	2080.00			2080.00	LF	$2.41	$5,012.80	
Removal of Existing Striping (SB on Ramp Nuevo)	2840.00			2840.00	LF	$0.65	$1,846.00	
Thermoplastic Striping (SB on Ramp Nuevo)	2840.00			2840.00	LF	$2.41	$6,844.40	
Removal of Existing Striping (SB off Ramp Redlands)							$0.00	
Thermoplastic Striping (SB off Ramp Redlands)							$0.00	
Removal of Existing Striping (SB on Ramp Redlands)							$0.00	
Thermoplastic Striping (SB on Ramp Redlands)							$0.00	
Reconstruct Sign Structure							$0.00	
II. Structure Items								
Ramona Bridge Replacement							$0.00	
Harley Knox Bridge Replacement							$0.00	
Placentia Bridge Replacement							$0.00	
Nuevo Rd Bridge Replacement	260.00	106.00		27560.00	SQFT	$250.00	$6,890,000.00	
D St Bridge Tieback							$0.00	
Perris Blvd Bridge Replacement							$0.00	
Redlands Bridge Tieback							$0.00	
Bridge Structure 1							$0.00	
Bridge Structure 2							$0.00	
Bridge Structure 3							$0.00	
III. Right of Way								
Right of Way Acquisition #1							$0.00	

I.	***Roadway Items***	$1,792,000.00
	Earthwork	$739,000.00
	Pavement Structural Section	$838,000.00
	Specialty Items	$0.00
	Traffic Items	$215,000.00
II.	***Structural Items***	$6,890,000.00
III.	***Right of Way***	$0.00

Project #13 I-215 SB at Placentia Overcrossing Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$0***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$0***	
SECTION 3: DRAINAGE	***$0***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$0***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$0***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$0***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$0***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$0***	
II. STRUCTURE ITEMS		
BRIDGES	***$3,870,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$3,870,000***	
SUPPORT COSTS	***$1,355,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$5,225,000***	
Amount included in 2016 TUMF Nexus Study	***$12,354,000.00***	as Mid-County Parkway Interchange
Amount to be reduced from Total Project Costs	***$5,225,000.00***	

Summary of Quantities

Project #13, I-215 SB at Placentia Overcrossing Subtotal

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (SB off Ramp Harley Knox)							$0.00	
	Roadway Excavation (SB on Ramp Harley Knox)							$0.00	
	Roadway Excavation (SB off Ramp Ramona)							$0.00	
	Roadway Excavation (SB off Ramp Nuevo)							$0.00	
	Roadway Excavation (SB on Ramp Nuevo)							$0.00	
	Roadway Excavation (SB off Ramp D st)							$0.00	
	Roadway Excavation (SB off Ramp Redlands)							$0.00	
	Roadway Excavation (SB on Ramp Redlands)							$0.00	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Ramona)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Nuevo)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Nuevo)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp D st)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Redlands)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Redlands)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a CRCP depth of 0.90'
	Sec 3. Drainage								
	Specialty Items						$0.00		
	Remove Sound Wall							$0.00	
	Sound Wall							$0.00	
	Remove Retaining Wall							$0.00	
	Structural Concrete (Retaining Wall)							$0.00	Retaining wall height 9'
	Concrete Barrier (Type 60)							$0.00	
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization							$0.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)							$0.00	
	Thermoplastic Striping (Mainline)							$0.00	
	Removal of Existing Striping (SB off Ramp Harley Knox)							$0.00	
	Thermoplastic Striping (SB off Ramp Harley Knox)							$0.00	
	Removal of Existing Striping (SB on Ramp Harley Knox)							$0.00	
	Thermoplastic Striping (SB on Ramp Harley Knox)							$0.00	
	Removal of Existing Striping (SB off Ramp Ramona)							$0.00	
	Thermoplastic Striping (SB off Ramp Ramona)							$0.00	
	Removal of Existing Striping (SB off Ramp Nuevo)							$0.00	
	Thermoplastic Striping (SB off Ramp Nuevo)							$0.00	
	Removal of Existing Striping (SB on Ramp Nuevo)							$0.00	
	Thermoplastic Striping (SB on Ramp Nuevo)							$0.00	
	Removal of Existing Striping (SB off Ramp Redlands)							$0.00	
	Thermoplastic Striping (SB off Ramp Redlands)							$0.00	
	Removal of Existing Striping (SB on Ramp Redlands)							$0.00	
	Thermoplastic Striping (SB on Ramp Redlands)							$0.00	
	Reconstruct Sign Structure							$0.00	
II. Structure Items									
	Ramona Bridge Replacement							$0.00	
	Harley Knox Bridge Replacement							$0.00	
	Placentia Bridge Replacement	215.00	72.00		15480.00	SQFT	$250.00	$3,870,000.00	
	Nuevo Rd Bridge Replacement							$0.00	
	D St Bridge Tieback							$0.00	
	Perris Blvd Bridge Replacement							$0.00	
	Redlands Bridge Tieback							$0.00	
	Bridge Structure 1							$0.00	
	Bridge Structure 2							$0.00	
	Bridge Structure 3							$0.00	
III. Right of Way									
	Right of Way Acquisition #1							$0.00	

I.	***Roadway Items***	$0.00
	Earthwork	$0.00
	Pavement Structural Section	$0.00
	Specialty Items	$0.00
	Traffic Items	$0.00
II.	***Structural Items***	$3,870,000.00
III.	***Right of Way***	$0.00

Project #13 I-215 SB at Ramona Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$221,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$452,000***	
SECTION 3: DRAINAGE	***$132,000***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 4: Specialty Items	***$0***	
SECTION 6: TRAFFIC ITEMS	***$207,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$50,600***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$101,200***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$50,600***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$485,760***	
II. STRUCTURE ITEMS		
BRIDGES	***$6,875,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$8,575,160***	
SUPPORT COSTS	***$3,001,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$11,576,000***	
Amount included in 2016 TUMF Nexus Study	***$5,965,000.00***	
Amount to be reduced from Total Project Costs	***$5,965,000.00***	

Summary of Quantities

Project #13, I-215 SB at Ramona Subtotal

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (SB off Ramp Harley Knox)							$0.00	
	Roadway Excavation (SB on Ramp Harley Knox)							$0.00	
	Roadway Excavation (SB off Ramp Ramona)	700.00	18-100	0-11	14719.22	CY	$15.00	$220,788.33	
	Roadway Excavation (SB off Ramp Nuevo)							$0.00	
	Roadway Excavation (SB on Ramp Nuevo)							$0.00	
	Roadway Excavation (SB off Ramp D st)							$0.00	
	Roadway Excavation (SB off Ramp Redlands)							$0.00	
	Roadway Excavation (SB on Ramp Redlands)							$0.00	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Harley Knox)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Harley Knox)							$0.00	Lane plus shoulder at 32' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Ramona)	720.00	8.00		640.00	SQYD	$36.38	$23,283.20	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Ramona)	720.00	48.00		896.00	CY	$72.10	$64,601.60	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Ramona)	720.00	48.00		626.40	TON	$85.00	$53,244.00	Lane plus shoulder at 48' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Ramona)	720.00	48.00		1152.00	CY	$270.00	$311,040.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Nuevo)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Nuevo)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp D st)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB off Ramp Redlands)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
	Remove Concrete Pavement (SB on Ramp Redlands)							$0.00	Existing shoulders at 8'
	Class 2 Aggregate Subbase (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a CRCP depth of 0.90'
	Sec 3. Drainage								
	Specialty Items						$0.00		
	Remove Sound Wall							$0.00	
	Sound Wall							$0.00	
	Remove Retaining Wall							$0.00	
	Structural Concrete (Retaining Wall)							$0.00	Retaining wall height 9'
	Concrete Barrier (Type 60)							$0.00	
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization				*4.00*	PER CORNER	$50,000.00	$200,000.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)							$0.00	
	Thermoplastic Striping (Mainline)							$0.00	
	Removal of Existing Striping (SB off Ramp Harley Knox)							$0.00	
	Thermoplastic Striping (SB off Ramp Harley Knox)							$0.00	
	Removal of Existing Striping (SB on Ramp Harley Knox)							$0.00	
	Thermoplastic Striping (SB on Ramp Harley Knox)							$0.00	
	Removal of Existing Striping (SB off Ramp Ramona)	2320.00			2320.00	LF	$0.65	$1,508.00	
	Thermoplastic Striping (SB off Ramp Ramona)	2320.00			2320.00	LF	$2.41	$5,591.20	
	Removal of Existing Striping (SB off Ramp Nuevo)							$0.00	
	Thermoplastic Striping (SB off Ramp Nuevo)							$0.00	
	Removal of Existing Striping (SB on Ramp Nuevo)							$0.00	
	Thermoplastic Striping (SB on Ramp Nuevo)							$0.00	
	Removal of Existing Striping (SB off Ramp Redlands)							$0.00	
	Thermoplastic Striping (SB off Ramp Redlands)							$0.00	
	Removal of Existing Striping (SB on Ramp Redlands)							$0.00	
	Thermoplastic Striping (SB on Ramp Redlands)							$0.00	
	Reconstruct Sign Structure							$0.00	
II. Structure Items									
	Ramona Bridge Replacement	220.00	125.00		27500.00	SQFT	$250.00	$6,875,000.00	
	Harley Knox Bridge Replacement							$0.00	
	Placentia Bridge Replacement							$0.00	
	Nuevo Rd Bridge Replacement							$0.00	
	D St Bridge Tieback							$0.00	
	Perris Blvd Bridge Replacement							$0.00	
	Redlands Bridge Tieback							$0.00	
	Bridge Structure 1							$0.00	
	Bridge Structure 2							$0.00	
	Bridge Structure 3							$0.00	
III. Right of Way									
	Right of Way Acquisition #1							$0.00	

I.	***Roadway Items***	$880,000.00
	Earthwork	$221,000.00
	Pavement Structural Section	$452,000.00
	Specialty Items	$0.00
	Traffic Items	$207,000.00
II.	***Structural Items***	$6,875,000.00
III.	***Right of Way***	$0.00

Project #13 I-215 SB at Harley Knox Subtotal		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$581,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$1,028,000***	
SECTION 3: DRAINAGE	***$273,450***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$214,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$104,823***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$209,645***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$104,823***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$1,006,296***	
II. STRUCTURE ITEMS		
BRIDGES	***$4,510,000***	
III. RIGHT OF WAY		
Right of Way Acquisition	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$8,032,036***	
SUPPORT COSTS	***$2,811,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$10,843,000***	
Amount included in 2016 TUMF Nexus Study	***$7,110,000.00***	
Amount to be reduced from Total Project Costs	***$7,110,000.00***	

Summary of Quantities

Project #13, I-215 SB at Harley Knox Subtotal

Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary								
Earthwork								
Roadway Excavation (SB off Ramp Harley Knox)	845.00	26-85	0-15	24160.00	CY	$15.00	$362,400.00	
Roadway Excavation (SB on Ramp Harley Knox)	480.00	21-76	0-15	14576.11	CY	$15.00	$218,641.67	
Roadway Excavation (SB off Ramp Ramona)							$0.00	
Roadway Excavation (SB off Ramp Nuevo)							$0.00	
Roadway Excavation (SB on Ramp Nuevo)							$0.00	
Roadway Excavation (SB off Ramp D st)							$0.00	
Roadway Excavation (SB off Ramp Redlands)							$0.00	
Roadway Excavation (SB on Ramp Redlands)							$0.00	
Pavement Structural Section						$0.00		
Remove Concrete Pavement (Mainline)							$0.00	Existing shoulders at 10'
Class 2 Aggregate Subbase (Mainline)							$0.00	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (Mainline)							$0.00	Lane plus shoulder at 22' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (Mainline)							$0.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Harley Knox)	1450.00	8.00		1288.89	SQYD	$36.38	$46,889.78	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Harley Knox)	1450.00	34.00		1278.15	CY	$72.10	$92,154.48	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Harley Knox)	1450.00	34.00		893.56	TON	$85.00	$75,952.81	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Harley Knox)	1450.00	34.00		1643.33	CY	$270.00	$443,700.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Harley Knox)	860.00	8.00		764.44	SQYD	$36.38	$27,810.49	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Harley Knox)	860.00	32.00		713.48	CY	$72.10	$51,442.01	Lane plus shoulder at 32' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Harley Knox)	860.00	32.00		498.80	TON	$85.00	$42,398.00	Lane plus shoulder at 32' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Harley Knox)	860.00	32.00		917.33	CY	$270.00	$247,680.00	Lane plus shoulder at 32' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Ramona)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Ramona)							$0.00	Lane plus shoulder at 48' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Nuevo)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Nuevo)							$0.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Nuevo)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Nuevo)							$0.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp D st)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp D st)							$0.00	Lane plus shoulder at 38' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB off Ramp Redlands)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB off Ramp Redlands)							$0.00	Lane plus shoulder at 34' with a CRCP depth of 0.90'
Remove Concrete Pavement (SB on Ramp Redlands)							$0.00	Existing shoulders at 8'
Class 2 Aggregate Subbase (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with Class 2 Aggregate depth of 0.70'
Hot Mix Asphalt (Type A) (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a HMA depth of 0.25'
Continuously Reinforced Concrete Pavement (SB on Ramp Redlands)							$0.00	Lane plus shoulder at 40' with a CRCP depth of 0.90'
Sec 3. Drainage								
Specialty Items						$0.00		
Remove Sound Wall							$0.00	
Sound Wall							$0.00	
Remove Retaining Wall							$0.00	
Structural Concrete (Retaining Wall)							$0.00	Retaining wall height 9'
Concrete Barrier (Type 60)							$0.00	
Traffic Items								
Traffic Electrical								
Intersection Signalization				*4.00*	PER CORNER	$50,000.00	$200,000.00	
Traffic Signing and Stripping						$0.00		
Removal of Existing Striping (Mainline)							$0.00	
Thermoplastic Striping (Mainline)							$0.00	
Removal of Existing Striping (SB off Ramp Harley Knox)	2900.00			2900.00	LF	$0.65	$1,885.00	
Thermoplastic Striping (SB off Ramp Harley Knox)	2900.00			2900.00	LF	$2.41	$6,989.00	
Removal of Existing Striping (SB on Ramp Harley Knox)	1720.00			1720.00	LF	$0.65	$1,118.00	
Thermoplastic Striping (SB on Ramp Harley Knox)	1720.00			1720.00	LF	$2.41	$4,145.20	
Removal of Existing Striping (SB off Ramp Ramona)							$0.00	
Thermoplastic Striping (SB off Ramp Ramona)							$0.00	
Removal of Existing Striping (SB off Ramp Nuevo)							$0.00	
Thermoplastic Striping (SB off Ramp Nuevo)							$0.00	
Removal of Existing Striping (SB on Ramp Nuevo)							$0.00	
Thermoplastic Striping (SB on Ramp Nuevo)							$0.00	
Removal of Existing Striping (SB off Ramp Redlands)							$0.00	
Thermoplastic Striping (SB off Ramp Redlands)							$0.00	
Removal of Existing Striping (SB on Ramp Redlands)							$0.00	
Thermoplastic Striping (SB on Ramp Redlands)							$0.00	
Reconstruct Sign Structure							$0.00	
II. Structure Items								
Ramona Bridge Replacement						$250.00	$0.00	
Harley Knox Bridge Replacement	220.00	82.00		18040.00	SQFT	$250.00	$4,510,000.00	
Placentia Bridge Replacement							$0.00	
Nuevo Rd Bridge Replacement							$0.00	
D St Bridge Tieback							$0.00	
Perris Blvd Bridge Replacement							$0.00	
Redlands Bridge Tieback							$0.00	
Bridge Structure 1							$0.00	
Bridge Structure 2							$0.00	
Bridge Structure 3							$0.00	
III. Right of Way								
Right of Way Acquisition #1							$0.00	

I.	***Roadway Items***	$1,823,000.00
	Earthwork	$581,000.00
	Pavement Structural Section	$1,028,000.00
	Specialty Items	$0.00
	Traffic Items	$214,000.00
II.	***Structural Items***	$4,510,000.00
III.	***Right of Way***	$0.00

Project #16, EB SR-91, I-15 SB On Ramp to I-15 NB On Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$1,454,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$1,439,000***	
SECTION 3: DRAINAGE	***$437,700***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$25,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$167,785***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$335,570***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$167,785***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$1,610,736***	
II. STRUCTURE ITEMS		
BRIDGES	***$0***	
TOTAL CAPITAL OUTLAY COSTS	***$5,637,576***	
SUPPORT COSTS	***$1,973,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$7,611,000***	

Summary of Quantities

Project #16, EB SR-91, I-15 SB On Ramp to I-15 NB On Ramp

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (North of 15 ramp to EB 91)	1250.00	0-60	0-5	12215.36	CY	$15.00	$183,230.42	
	Roadway Excavation (South of 15 ramp to EB 91)	870.00	0-105	0-7	31370.93	CY	$15.00	$470,563.89	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)	2366.00	10.00		2628.89	SQYD	$36.38	$95,638.98	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)	2366.00	22.00		1349.50	CY	$72.10	$97,298.68	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)	2366.00	22.00		943.44	TON	$85.00	$80,192.61	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)	2366.00	22.00		1735.07	CY	$270.00	$468,468.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (NB 15 ramp to EB 91)	1965.00	8.00		1746.67	SQYD	$36.38	$63,543.73	Existing shoulders at 8'
	Class 2 Aggregate Subbase (NB 15 ramp to EB 91)	1965.00	26.00		1324.56	CY	$72.10	$95,500.46	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (NB 15 ramp to EB 91)	1965.00	26.00		926.01	TON	$85.00	$78,710.53	Lane plus shoulder at 26' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (NB 15 ramp to EB 91)	1965.00	26.00		1703.00	CY	$270.00	$459,810.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)	2366.00			2366.00	LF	$0.65	$1,537.90	
	Thermoplastic Striping (Mainline)	4732.00			4732.00	LF	$2.41	$11,404.12	
	Removal of Existing Striping (NB 15 ramp to EB 91)	3930.00			3930.00	LF	$0.65	$2,554.50	
	Thermoplastic Striping (NB 15 ramp to EB 91)	3930.00			3930.00	LF	$2.41	$9,471.30	
II. Structure Items									
III. Right of Way									

I.	**Roadway Items**	$2,918,000.00
	Earthwork	$1,454,000.00
	Pavement Structural Section	$1,439,000.00
	Specialty Items	$0.00
	Traffic Items	$25,000.00
II.	**Structural Items**	$0.00
III.	**Right of Way**	$0.00

Project #18, SR-91 EB, Pierce St Off Ramp to Magnolia On Ramp		
ITEMS	**TOTAL COST**	**ENGINEERING ASSUMPTIONS**
I. Roadway Items Summary		
SECTION 1: EARTHWORK COST	***$939,000***	Roadway Cost are all based on a preliminary Google Earth review.
SECTION 2: PAVEMENT STRUCTRUAL SECTION	***$2,094,000***	
SECTION 3: DRAINAGE	***$573,000***	Drainage is taken at 15% of Roadway Items due to the lack of detail at this stage. During this review, we do not show that any pumps will be affected. Further analysis should look at all
SECTION 4: Specialty Items	***$0***	Retaining walls, sound walls, tie back walls and ramp reconfigurations are based on the widening needed. These are all based on a preliminary Google Earth review.
SECTION 6: TRAFFIC ITEMS	***$787,000***	
SECTION 8: MINOR ITEMS 5% of Sections 1-6	***$219,650***	
SECTION 9: MOBILIZATION 10% of Sections 1-6	***$439,300***	
SECTION 10: ROADWAY ADDITIONS 5% of Sections 1-6	***$219,650***	
SECTION 13: CONTINGENCIES 40% of Sections 1-10	***$2,108,640***	
II. STRUCTURE ITEMS		
BRIDGES	***$2,279,000***	
TOTAL CAPITAL OUTLAY COSTS	***$9,659,240***	
SUPPORT COSTS	***$3,381,000***	Support costs are 35% of capital outlay costs
TOTAL PROJECT COSTS	***$13,040,000***	

Summary of Quantities

Project #18, SR-91 EB, Pierce St Off Ramp to Magnolia On Ramp

	Item Description	Distance (ft)	Width (ft)	Depth (ft)	Quantity	Unit	Cost Assumptions	Total Cost	Engineering Assumptions
I. Roadway Items Summary									
	Earthwork								
	Roadway Excavation (EB Magnolia off Ramp)	260.00	260.00	0-15	26576.11	CY	$15.00	$398,641.67	
	Roadway Excavation (EB Magnolia on Ramp)	330.00	220	0-8	13303.70	CY	$15.00	$199,555.56	
	Roadway Excavation (EB Pierce off Ramp)	715	32-78	0-15	22695.00	CY	$15.00	$340,425.00	
	Pavement Structural Section						$0.00		
	Remove Concrete Pavement (Mainline)	4115.00	10.00		4572.22	SQYD	$36.38	$166,337.44	Existing shoulders at 10'
	Class 2 Aggregate Subbase (Mainline)	4115.00	22.00		2347.07	CY	$72.10	$169,224.04	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (Mainline)	4115.00	22.00		1640.86	TON	$85.00	$139,472.78	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (Mainline)	4115.00	22.00		3017.67	CY	$270.00	$814,770.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (EB Magnolia off Ramp)	1345.00	8.00		1195.56	SQYD	$36.38	$43,494.31	Existing shoulders at 8'
	Class 2 Aggregate Subbase (EB Magnolia off Ramp)	1345.00	26.00		906.63	CY	$72.10	$65,368.00	Lane plus shoulder at 26' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (EB Magnolia off Ramp)	1345.00	26.00		633.83	TON	$85.00	$53,875.66	Lane plus shoulder at 26' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (EB Magnolia off Ramp)	1345.00	26.00		1165.67	CY	$270.00	$314,730.00	Lane plus shoulder at 26' with a CRCP depth of 0.90'
	Remove Concrete Pavement (EB Magnolia on Ramp)	745.00	8.00		662.22	SQYD	$36.38	$24,091.64	Existing shoulders at 8'
	Class 2 Aggregate Subbase (EB Magnolia on Ramp)	745.00	22.00		424.93	CY	$72.10	$30,637.16	Lane plus shoulder at 22' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (EB Magnolia on Ramp)	745.00	22.00		297.07	TON	$85.00	$25,250.84	Lane plus shoulder at 22' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (EB Magnolia on Ramp)	745.00	22.00		546.33	CY	$270.00	$147,510.00	Lane plus shoulder at 22' with a CRCP depth of 0.90'
	Remove Concrete Pavement (EB Pierce off Ramp)	300.00	8.00		266.67	SQYD	$36.38	$9,701.33	Existing shoulders at 8'
	Class 2 Aggregate Subbase (EB Pierce off Ramp)	300.00	24.00		186.67	CY	$72.10	$13,458.67	Lane plus shoulder at 24' with Class 2 Aggregate depth of 0.70'
	Hot Mix Asphalt (Type A) (EB Pierce off Ramp)	300.00	24.00		130.50	TON	$85.00	$11,092.50	Lane plus shoulder at 24' with a HMA depth of 0.25'
	Continuously Reinforced Concrete Pavement (EB Pierce off Ramp)	300.00	24.00		240.00	CY	$270.00	$64,800.00	Lane plus shoulder at 24' with a CRCP depth of 0.90'
	Traffic Items								
	Traffic Electrical								
	Intersection Signalization				3.00	PER CORNER	$50,000.00	$150,000.00	
	Traffic Signing and Stripping						$0.00		
	Removal of Existing Striping (Mainline)	4112.00			4112.00	LF	$0.65	$2,672.80	
	Thermoplastic Striping (Mainline)	8224.00			8224.00	LF	$2.41	$19,819.84	
	Removal of Existing Striping (EB Magnolia off Ramp)	2690.00			2690.00	LF	$0.65	$1,748.50	
	Thermoplastic Striping (EB Magnolia off Ramp)	2690.00			2690.00	LF	$2.41	$6,482.90	
	Removal of Existing Striping (EB Magnolia on Ramp)	1490.00			1490.00	LF	$0.65	$968.50	
	Thermoplastic Striping (EB Magnolia on Ramp)	1490.00			1490.00	LF	$2.41	$3,590.90	
	Removal of Existing Striping (EB Pierce off Ramp)	600.00			600.00	LF	$0.65	$390.00	
	Thermoplastic Striping (EB Pierce off Ramp)	600.00			600.00	LF	$2.41	$1,446.00	
	Reconstruct Sign Structure				3.00	EA	$200,000.00	$600,000.00	
II. Structure Items									
	Magnolia Bridge Widening	340.00	14.00		4760.00	SQFT	$375.00	$1,785,000.00	
	Pierce Bridge Widening	94.00	14.00		1316.00	SQFT	$375.00	$493,500.00	
III. Right of Way									

I.	***Roadway Items***	$3,820,000.00
	Earthwork	$939,000.00
	Pavement Structural Section	$2,094,000.00
	Specialty Items	$0.00
	Traffic Items	$787,000.00
II.	***Structural Items***	$2,279,000.00
III.	***Right of Way***	$0.00

RCTC TRUCK STUDY AND REGIONAL LOGISTICS MITIGATION FEE

Draft Technical Memorandum: Task 4 – Fee Allocation Structure and Implementing Mechanisms

Potential Locational Effects of a Riverside County Logistics Mitigation Fee

Prepared for:

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

Prepared by:

WSP

In partnership with:

FEHR & PEERS

April 23, 2019

Contents

Exhibits

1. Introduction

A potential logistics mitigation fee of $1.28 per square foot of gross floor area of new warehouse construction in Riverside County would provide funding for highway projects that are needed to mitigate the impacts of increased truck traffic resulting from new development. The *RCTC Truck Study and Regional Logistics Mitigation* Fee *Technical Memorandum: Task 3 – Nexus Study* describes the needs for this fee and how the proposed amount of the fee was determined.

The objective of this document is to assess the potential impacts of this fee on warehouse development within Riverside County. Such development affects many other aspects of the county's economy, including direct employment, induced employment in businesses supporting warehousing, transportation volumes, demand for other county services, and local and state tax revenues. Major factors addressed include the following:

- The market for logistics and warehouse development in Southern California. How likely will the proposed fee affect the pace of development given the overall supply and demand for warehouse space in Southern California?
- The extent to which locational decisions within the Southern California market could be affected by the proposed fee:
  - How does the proposed fee compare to total development costs (including land and construction costs)?
  - How does the proposed fee compare to similar fees elsewhere in the market?
  - Will the fee substantially influence developers to locate in areas outside Riverside County?
- The possibility that other changes in regional development fees or development costs might affect the potential impacts of the proposed Riverside mitigation fee. Mitigation fees have been applied across multiple building types and for multiple purposes as shown in Appendix 1, and such fees are likely to evolve over time.

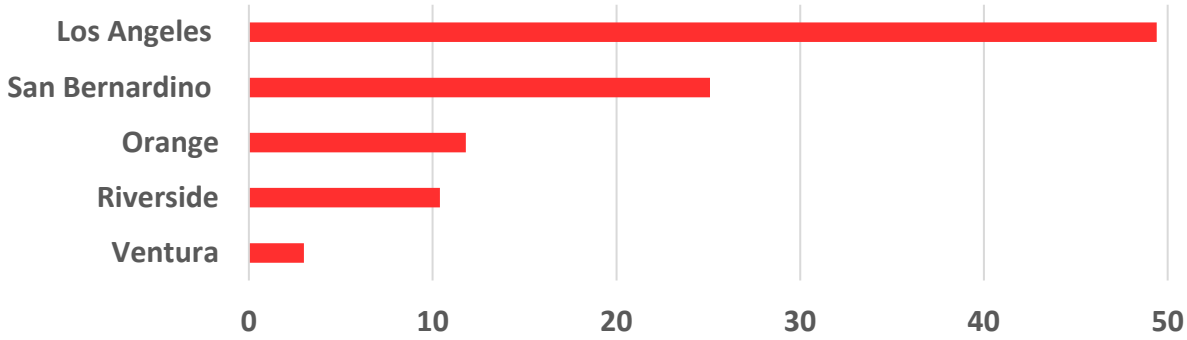
The following sections address these questions.

2. Profile and Outlook for Southern California Warehouse Development

2.1. PROFILE OF SOUTHERN CALIFORNIA WAREHOUSE DEVELOPMENT

The *Industrial Warehousing in the SCAG Region* study (Industrial Warehousing Study) completed by the Southern California Association of Governments (SCAG) in 2018 details the location of industrial warehouse buildings in Southern California and provides projections of new developments for 43 sub-regions. As shown in Exhibit 1, these buildings are heavily concentrated in Los Angeles and San Bernardino, and to a lesser extent Orange, and Riverside Counties.

Exhibit 1. Percentage Share of Total Industrial Warehouse Building Area in Southern California by County in 2014



Source: Southern California Association of Governments, *Industrial Warehousing in the SCAG Region, April 2018*

Exhibit 2 shows the 43 sub-regions used in the Industrial Warehousing Study.

Riverside County includes the following submarket areas:

- Riverside (18)
- Corona (25)
- South Riverside (32)
- Coachella Valley (25)
- Riverside Outlying (36)

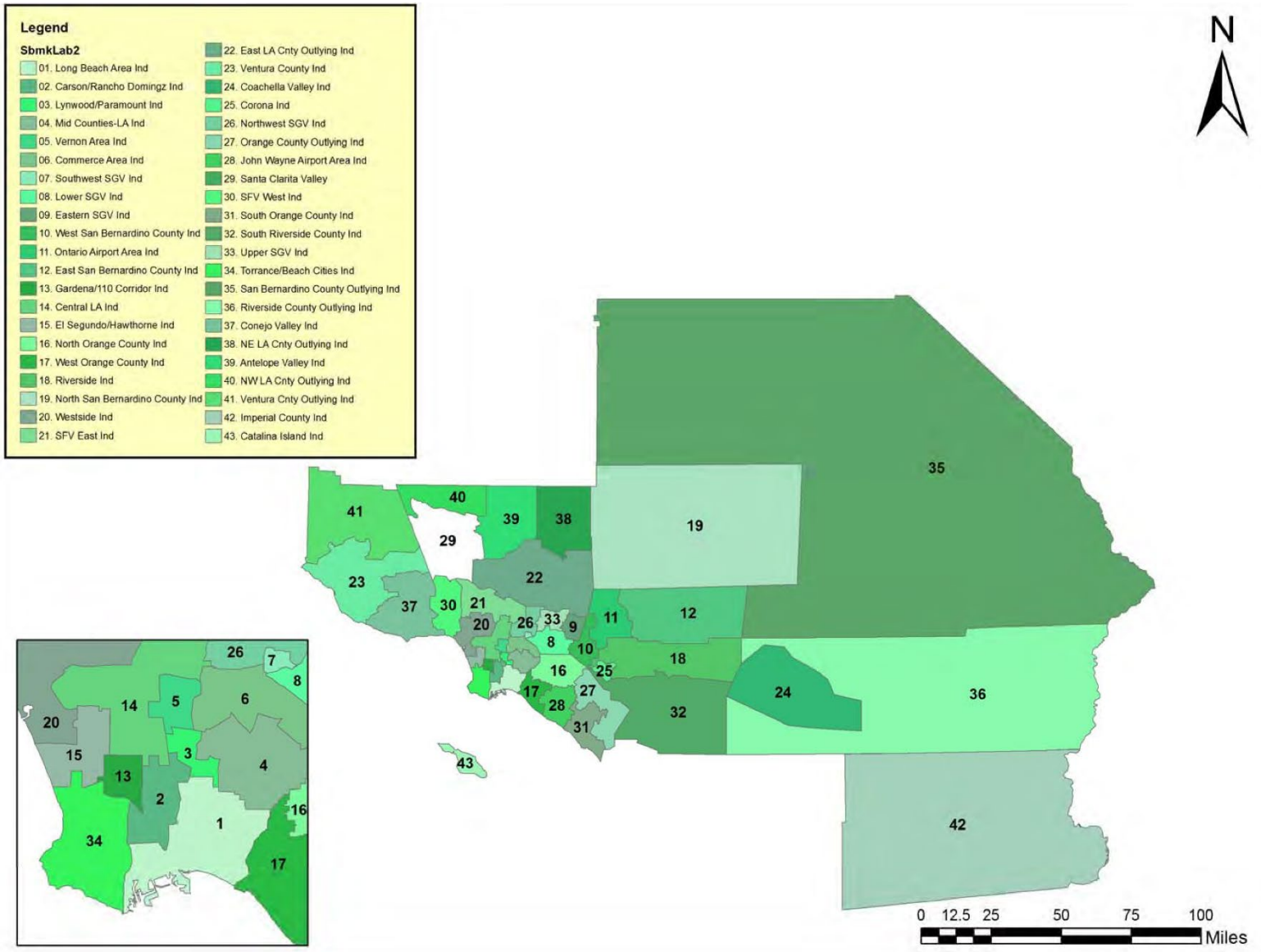
San Bernardino County includes the following submarket areas:

- West San Bernardino (10)
- Ontario Airport Area (11)
- East San Bernardino (12)

- North San Bernardino (19)
- San Bernardino Outlying Areas (35)

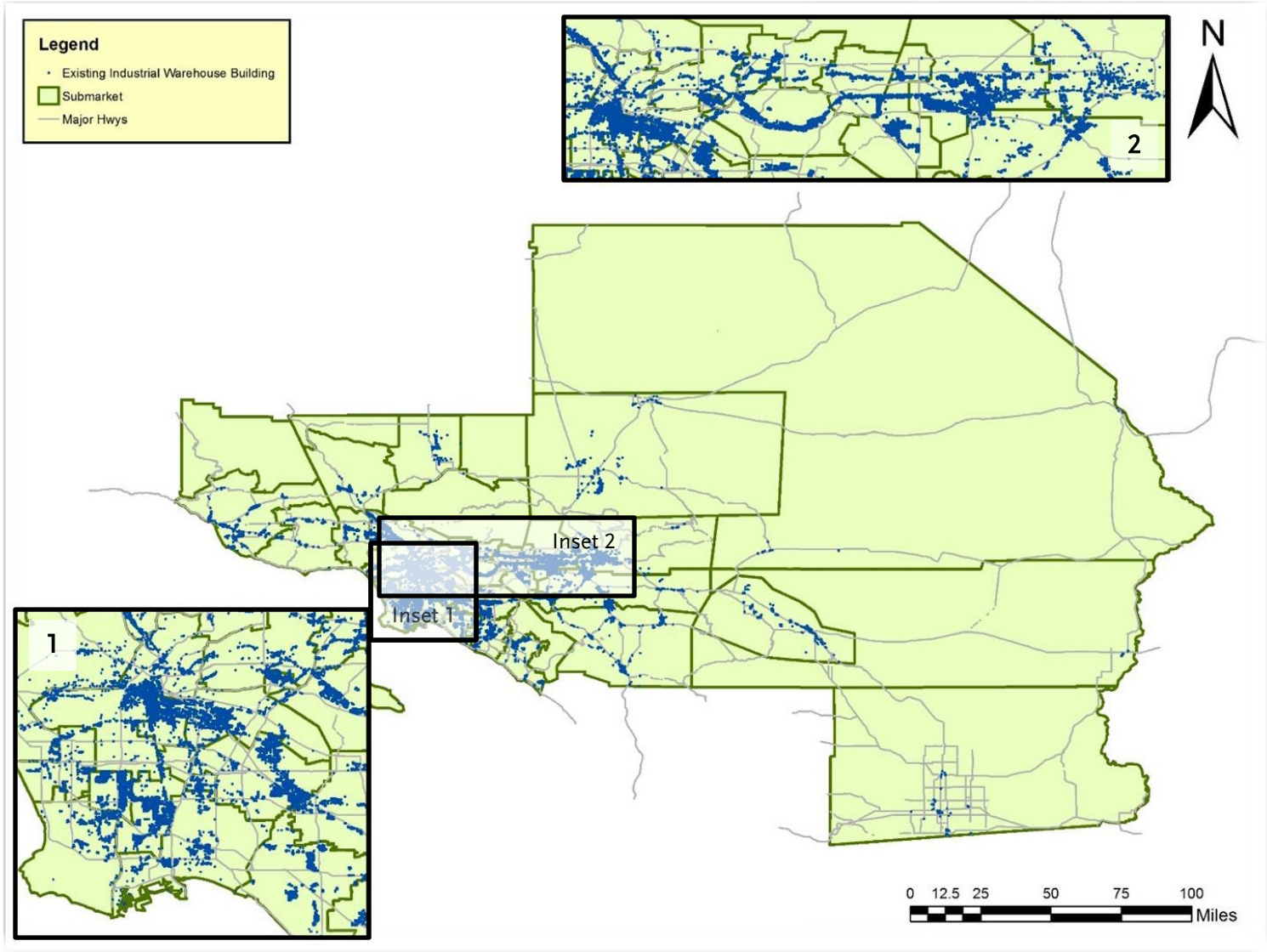
Exhibit 3 shows detail for existing warehouse buildings, with inset 2 extending from the East San Bernardino County submarket to areas to the west. This detail shows that industrial warehouse buildings in San Bernardino are concentrated in the southwest part of the county. To the south of inset 1, it can be seen that in Riverside County industrial warehouse buildings are concentrated in the western portion of the county.

Exhibit 2. Submarket Areas in the SCAG Region



Source: Southern California Association of Governments, *Industrial Warehousing in the SCAG Region*, April 2018

Exhibit 3. Existing Industrial Warehouse Buildings in the SCAG Region (All Building Sizes and All Secondary Types), 2014



Source: Southern California Association of Governments, *Industrial Warehousing in the SCAG Region*, April 2018

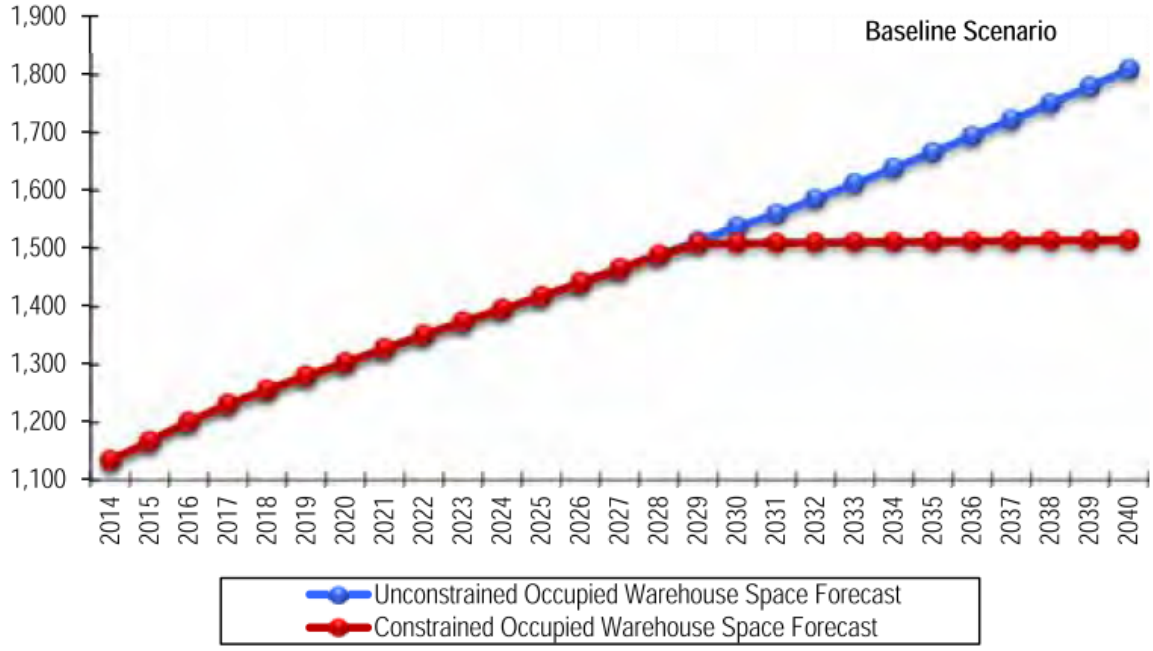
2.2 PROJECTED INDUSTRIAL WAREHOUSE SPACE

The Industrial Warehousing Study included forecasts of supply and demand for warehousing space in 43 geographical submarket areas of the SCAG region shown in Exhibit 2. The forecast was based on an inventory of warehouse space for 2014 and annual forecasts through 2040 for containerized port-related, border-crossing-related, and domestic cargo markets.[1] Each of these cargo sources was further segmented by type of type of warehouse use.

The Industrial Warehousing Study's baseline scenario used recent forecasts of port- and border-crossing-related cargo and assumed no efficiency gains in cargo storage over time and no replacement of obsolete buildings. It also assumed that the warehouse functional-use mix would not change and that current estimates of existing developable space were available for new facilities. The study developed two demand projections – one that assumed no constraint on total warehouse space and the other that would be constrained by limitations on developable areas.

The two projections are shown in Exhibit 4. As shown, total unconstrained 2040 demand for the Industrial Warehousing Study's baseline scenario is 1.81 billion square feet—an increase of 59 percent from 1.13 billion square feet in 2014 (a compound annual growth rate of 1.8 percent).

Exhibit 4. Unconstrained versus Constrained Regional-Level Total Occupied Warehouse Space Forecasts by Year in the SCAG Region, 2040 (millions of square feet)



Source: Southern California Association of Governments, *Industrial Warehousing in the SCAG Region*, April 2018

[1] "Port-related," is containerized cargo handled at San Pedro Bay Ports (i.e., excluding containerized cargo handled at Port Hueneme or Port of San Diego). "Border-crossing related" refers to goods that cross the land ports of entry in Imperial County. "Domestic cargo" is any other type of containerized cargo not classified as "port-related" or "border-crossing-related" cargo.

3. Potential Effects of a Proposed Fee on Locational Decisions

The previous section provided baseline projections of industrial warehouse development in Southern California. However, these projections did not account for changes in costs that could affect locational decisions of developers. In theory, higher development costs represented by a proposed mitigation fee could marginally induce developers to choose locations outside of Riverside County (e.g., in Los Angeles or San Bernardino Counties). The principal question concerning these impacts is how much a proposed fee would increase total development costs including land and construction.

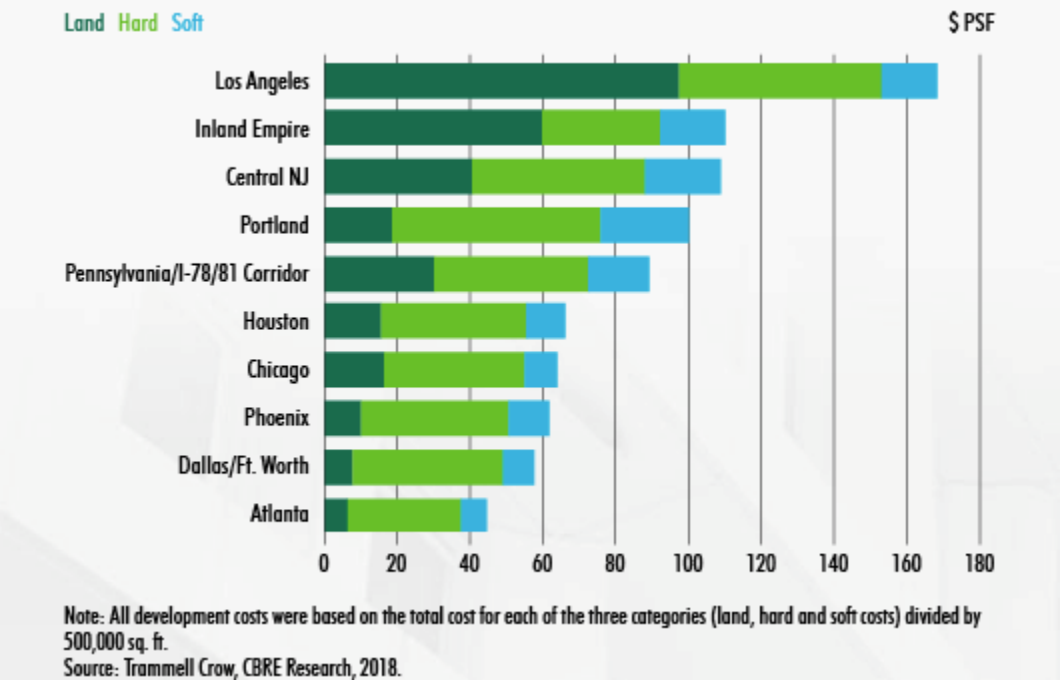
The impacts of larger development costs would also, theoretically, be offset by any perceived benefits developers could see from improved highway transportation that would result from the mitigation fee. This is a smaller point, that is addressed separately, below.

3.1. COST OF A PROPOSED FEE COMPARED TO TOTAL CONSTRUCTION COSTS

Exhibit 5 shows that total construction costs for warehouse space in Los Angeles are the highest in the country at nearly $170 per square foot. Costs in the Inland Empire are the second highest in the country at $110 per square foot. The $110-per-square-foot estimate is slightly less than the $121 per square foot cost estimated in the Western Riverside Council of Governments (WRCOG) Comparative Fee Study that includes $75.35 per square foot in total direct and indirect costs plus $45.35 per square foot in land costs (see Appendix A).[2] Using the $121 per square foot estimate from the WRCOG study, the proposed fee would represent 1.1 percent of total construction costs.

[2] Updated *Analysis of Development Impact Fees in Western Riverside County*, Western Riverside Council of Governments, March 2019

Exhibit 5. Average New Construction Cost Breakdown for a 500,000-square-foot Warehouse



Note: All development costs were based on the total cost for each of the three categories (land, hard and soft costs) divided by 500,000 sq. ft.
Source: Trammell Crow, CBRE Research, 2018.

The attraction, and scarcity, of space in Los Angeles clearly results in a large cost premium, so it is unlikely that small additional marginal costs in Riverside County would significantly tip the balance of location toward Los Angeles. As shown in Exhibit 5, development costs are about 55 percent higher in Los Angeles County than in the Inland Empire. Therefore, a 1.1 percent fee is insignificant in comparison.

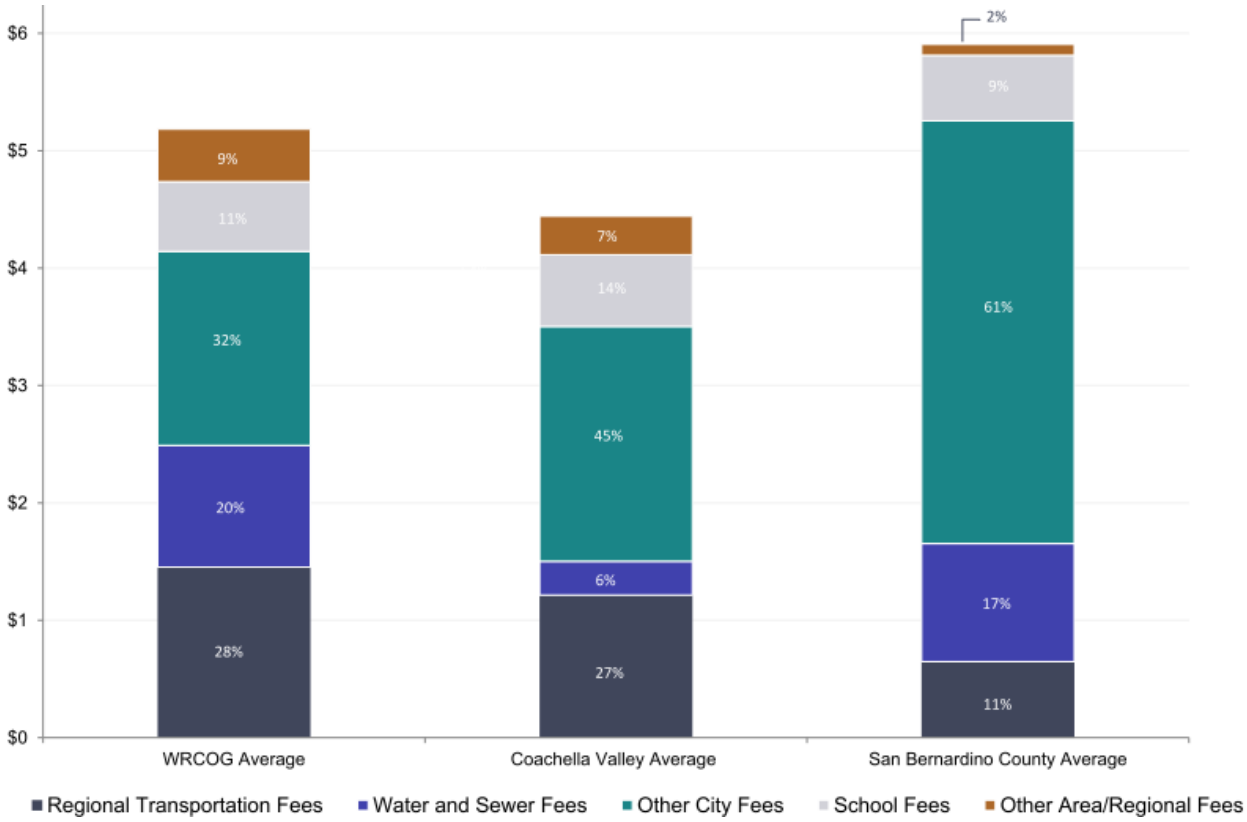
3.2. COMPARATIVE FEES COSTS IN OTHER AREAS OUTSIDE RIVERSIDE COUNTY

The question then becomes whether a 1.1 percent increase in development costs would cause developers to locate in other areas outside of Riverside County, especially in San Bernardino County, part of the Inland Empire immediately to the north of Riverside County and where warehouse development has been concentrated as discussed in the previous section.

In addition to representing a small, 1.1 percent share of total development costs, the proposed fee of $1.28 per square foot would also be much smaller than current fees for industrial development in Riverside and San Bernardino Counties, about 25 percent of the average level of fees in Riverside County, and about 22 percent of the average level of these fees in San Bernardino (see Exhibit 6).

A possible additional consideration is that a proposed fee would be used to fund improvements to highway transportation in Riverside County. This would, over time, reduce transportation costs for industrial warehouse users, and developers could possibly view this as a benefit. Realistically, however, the mitigation fee will represent a real upfront cost while future transportation costs reductions would likely be heavily discounted and therefore have only minimal impacts on locational decisions. In addition, it is difficult to know how much developers would link any future improvements to the fee. This is a possible additional consideration and is not addressed further within this analysis.

Exhibit 6. Current Average Industrial Development Impact Fee Costs Per Square Foot and Proportions in Inland Empire Jurisdictions



Source: Western Riverside Council of Governments, Updated Analysis of Development Impact Fees in Western Riverside County, 2019

4. Comparative Fee Costs

4.1. CURRENT FEE COSTS

The proposed mitigation fee would increase construction costs for warehouse development in Riverside County by about 1.1 percent and, taken alone, this could make San Bernardino County slightly more attractive to developers. However, higher fees in San Bernardino County could dampen this small effect. San Bernardino County's impact fees are higher than those in Riverside County according to the fee comparison study done by the WRCOG. Exhibit 6 shows the jurisdictions that were used to compare fees.

Exhibit 7. Jurisdictions Included in Fee Study

WRCOG Jurisdictions		Coachella Valley	San Bernardino County
Banning	Murrieta	Indio	Fontana
Canyon Lake	Norco	Palm Desert	Yucaipa
Beaumont	Perris	Palm Springs	San Bernardino
Calimesa	Riverside		Ontario
Corona	San Jacinto		Chino
Eastvale	Temecula		Rialto
Hemet	Wildomar		
Jurupa Valley	Temescal Valley		
Lake Elsinore	Winchester		
Menifee	March JPA		
Moreno Valley			

Source Western Riverside Council of Governments, Updated Analysis of Development Impact Fees in Western Riverside County, 2019

Exhibit 6 showed that average industrial development impact fees in WRCOG jurisdictions as well as areas in Coachella Valley are both notably lower than average fees in San Bernardino County. A few WRCOG jurisdictions have relatively high fees. Appendix B includes fee details for individual WRCOG jurisdictions.

4.2. FUTURE FEE DEVELOPMENT COSTS

In addition to current average industrial fees being higher in San Bernardino County than in Riverside County, a factor that could affect warehouse development location decisions is the possibility that fees or other costs could change in San Bernardino County, or other Southern California market areas. The possibility exists, for example, that other counties could implement a fee like the one proposed in Riverside County. While entirely speculative, such a scenario would also be based on needs to fund highway development in San Bernardino County or other regions in Southern California.

5. Summary of Findings

The Southern California region is a well-established, prime location for industrial warehouse development and will continue to be so. Los Angeles County is especially attractive because of its proximity to ports, large regional markets, and transportation connectivity. Because of these advantages and relatively scarce land availability, that market also has the highest construction costs for warehouse development in the United States.

While significantly less than Los Angeles, the Inland Empire has the second-highest costs for warehouse development in the country.

A proposed mitigation fee in Riverside County is likely to have limited impacts on reducing demand on warehouse development in Riverside County because of the following:

- It will represent a small (1.1 percent) share of total development costs, including land and construction costs.
- Total development costs for Los Angeles County will continue to be much higher than for the Inland Empire.
- Impact fees are generally higher in San Bernardino County compared to those in Riverside County.
- Any possible impacts of a proposed fee could be affected by offsetting changes in development costs in San Bernardino County and in other regions in the Southern California market, including increases in mitigation fees.

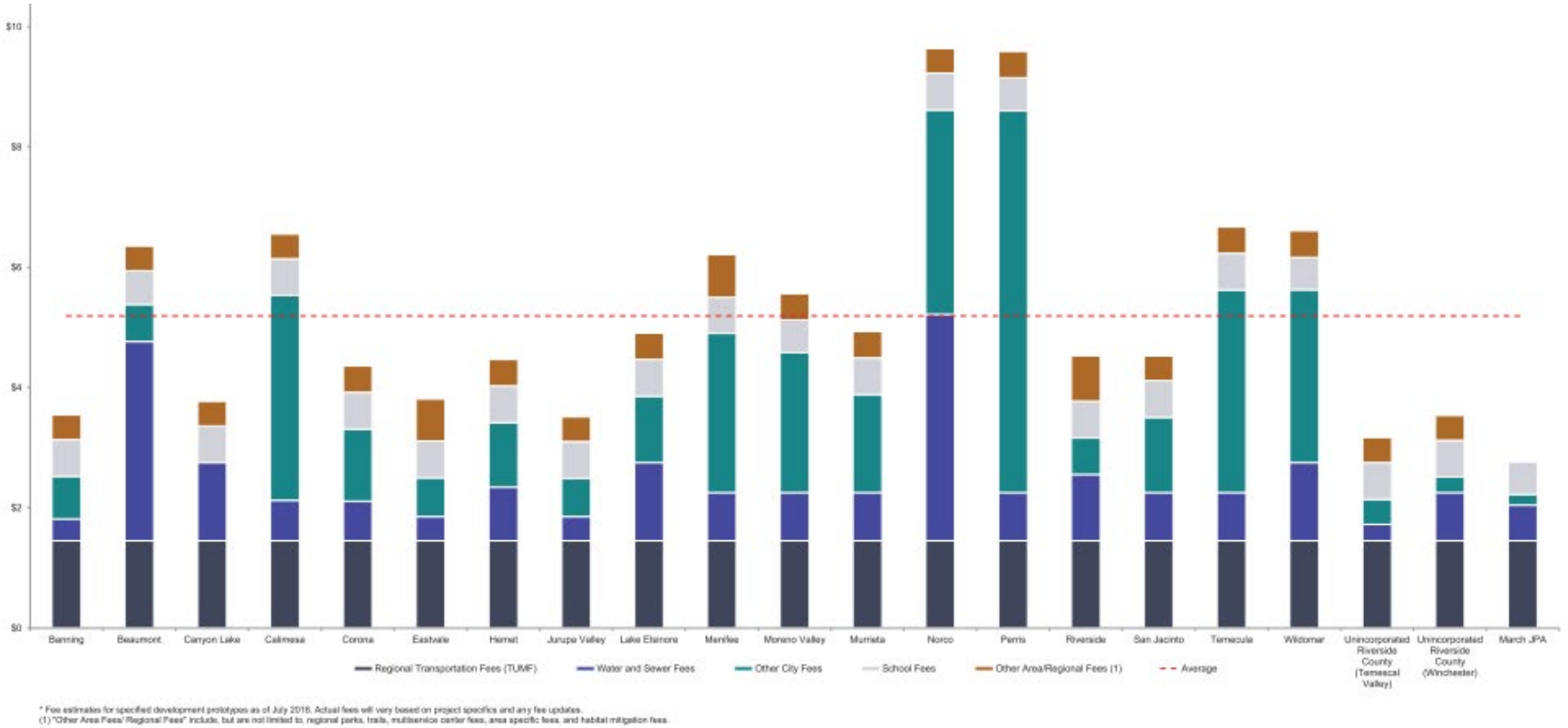
Appendix A
Development Prototypes – Total Development Costs

Total development costs per building square foot of $121.10 for industrial buildings include total direct and indirect costs of $75.35 plus the land value of $45.75.

Development Costs, Land Values, and Return	Single Family Per Unit	Multifamily Per Unit	Industrial Per Bldg Sq.Ft.	Retail Per Bldg Sq.Ft.	Office Per Bldg Sq.Ft.
DIRECT					
Basic Site Work/ Lot Improvements	$31,652	$9,766	$12.13	$26.38	$15.07
Direct Construction Cost	$227,898	$196,540	$37.98	$138.75	$148.31
Hard Cost Total	$259,550	$206,307	$50.12	$165.13	$163.38
INDIRECT					
TUMF	$8,873	$6,134	$1.45	$7.50	$2.19
Other Development Impact Fees	$38,597	$23,572	$3.74	$16.13	$11.87
Other Soft Costs	$56,893	$47,674	$20.05	$31.26	$33.02
Soft Cost Total	$104,363	$77,380	$25.24	$54.89	$47.08
Total Direct and Indirect Costs	**$363,913**	**$283,686**	**$75.35**	**$220.01**	**$210.46**
Developer Return Requirement	$56,160	$33,492	$13.68	$34.02	$32.52
Land Value	$141,527	$17,737	$45.75	$86.21	$82.38
TOTAL COST/RETURN	**$561,600**	**$334,915**	**$136.19**	**$340.25**	**$325.36**

Source: Western Riverside Council of Governments, Updated Analysis of Development Impact Fees in Western Riverside County, 2019

Appendix B
Industrial Prototype Development Fees by Jurisdiction (per building sq. ft.)



* Fee estimates for specified development prototypes as of July 2018. Actual fees will vary based on project specifics and any fee updates.
(1) "Other Area Fees/ Regional Fees" include, but are not limited to, regional parks, trails, multiservice center fees, area specific fees, and habitat mitigation fees.

Source: Western Riverside Council of Governments, Updated Analysis of Development Impact Fees in Western Riverside County, 2019