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December 13, 2019

Ms. Susan Bransen
Executive Director
California Transportation Commission
1120 N Street, Mail Station 52
Sacramento, CA 95814

Mr. Bruce De Terra
Chief, Division of Transportation Programming
Attention: Office of STIP
Department of Transportation
Mail Station 82
P.O. Box 942874
Sacramento, CA 94274-001

Subject: Submittal of Riverside County 2020 Regional Transportation Improvement Program

Dear Ms. Bransen and Mr. De Terra:

Enclosed is the Riverside County Transportation Commission's (Commission) Regional Transportation Improvement Program (RTIP) proposal for inclusion in the 2020 State Transportation Improvement Program (STIP). The Commission approved the RTIP projects for submittal to the California Transportation Commission (CTC) at its October 17, 2019 meeting. The RTIP submittal consists of the following four high priority capital projects in addition to Planning, Programming, and Monitoring to support STIP activities:

New Projects:

SR-71/SR-91 Interchange Connector
I-10/Ave 50 New Interchange
Coachella Valley Regional Signal Synchronization

Carryover Project:

I-15/French Valley Parkway Interchange

The proposed 2020 RTIP is consistent with the Southern California Association of Government's approved 2016 Regional Transportation Plan and Sustainable Communities Strategies (RTP/SCS), and Riverside County's transportation half-cent sales tax program, Measure A. To the best of the Commission's knowledge, at this time, the projects identified for funding in the proposed 2020 RTIP are not anticipated to be impacted by implementation of the Safer Affordable Fuel Efficient Vehicles Rule Part One – One National Program, which became effective on November 26, 2019.

We appreciate working with CTC staff on the development of the guidelines for the STIP and SB 1 programs. It is our intention to pursue funding from these programs to enhance our transportation investments for our multimodal system. Riverside County's growth in population, housing, and employment will continue at one of the highest rates in the state. To address these challenges, we will continue to work closely with the CTC and partner agencies to ensure equitable distribution of funds for transportation projects that are consistent with SCAG's adopted RTP/SCS, and contribute to state, regional, and local goals including job creation and economic prosperity.

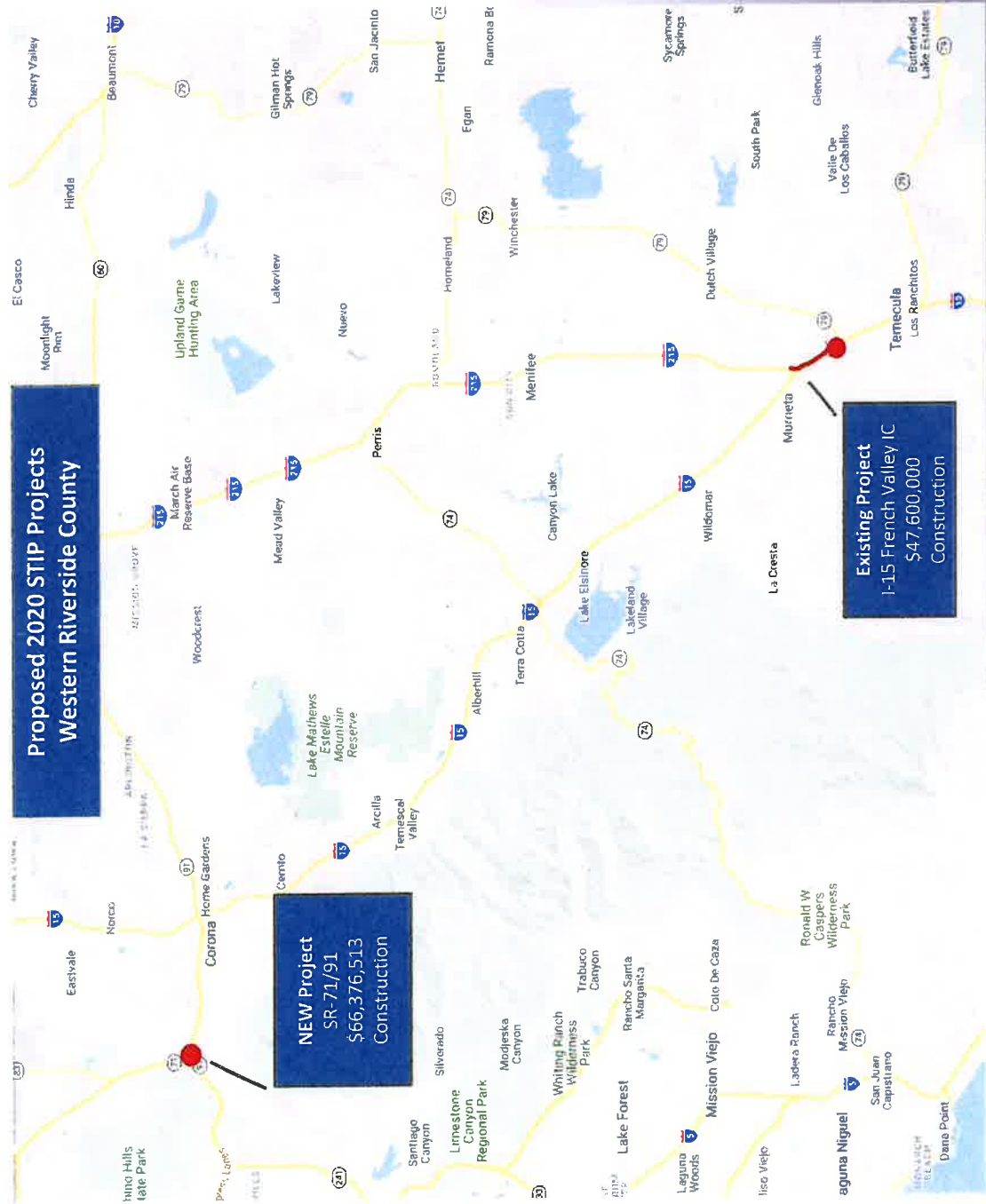
Thank you in advance for your consideration and approval of the Riverside County 2020 RTIP. Please contact me, Lorelle Moe-Luna, or Jillian Guizado at (951) 787-7141 if you have any questions.

Sincerely,



Anne Mayer
Executive Director

C: Michael Beauchamp, District Director, Caltrans District 8
Kome Ajise, Executive Director, SCAG
Mitch Weiss, Deputy Director, CTC



Proposed 2020 STIP Projects
Western Riverside County

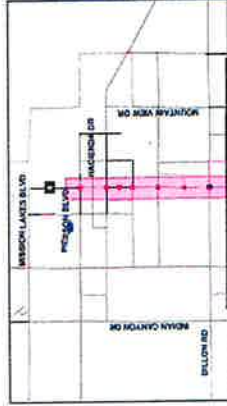
NEW Project
SR-71/91
\$66,376,513
Construction

Existing Project
I-15 French Valley IC
\$47,600,000
Construction

Proposed 2020 STIP Projects Coachella Valley

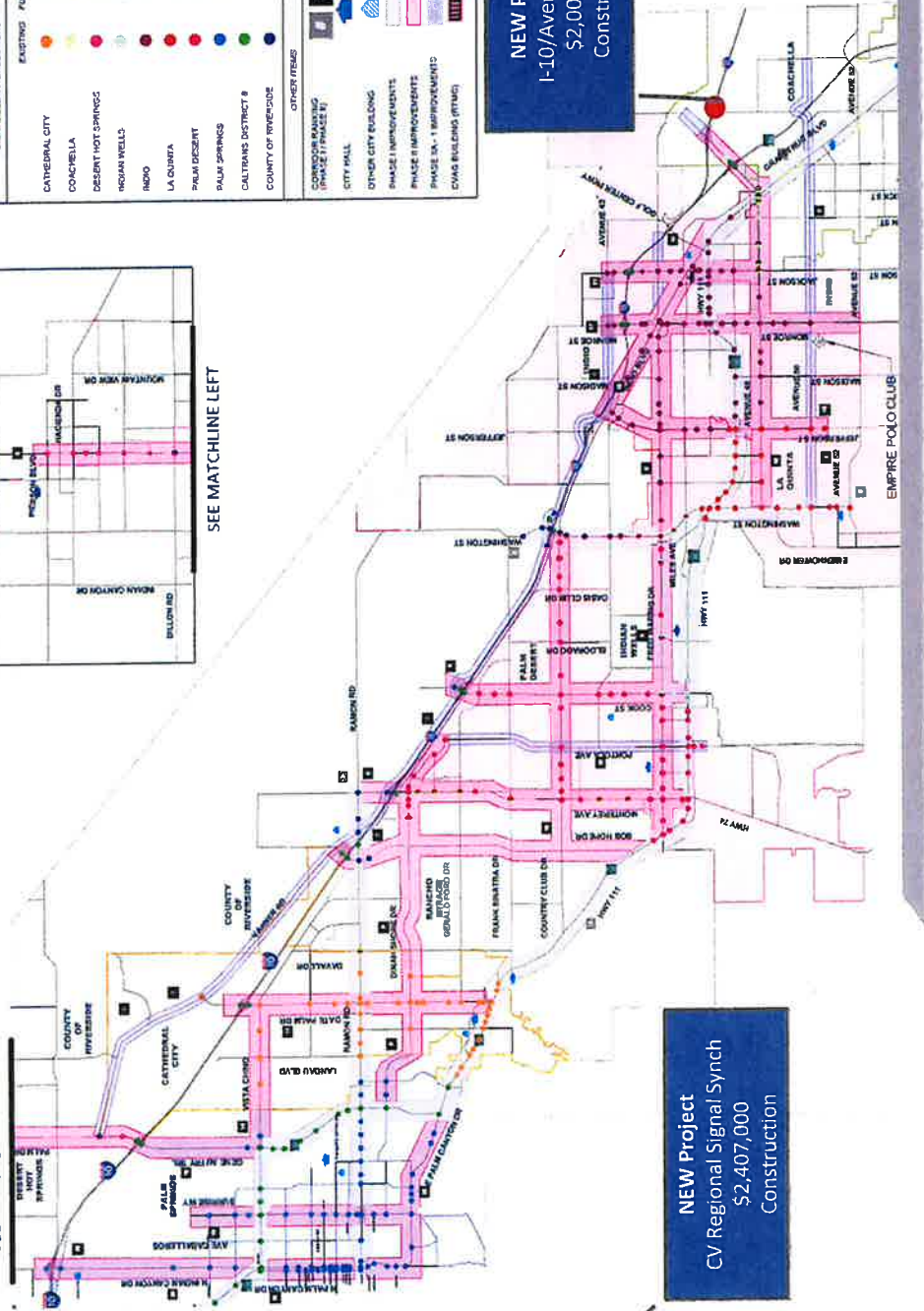


LEGEND	
SIGNALIZED INTERSECTIONS	
EXISTING	FUTURE
CATHEDRAL CITY	
COACHELLA	
DESERT HOT SPRINGS	
ROMAN WELLS	
INDIO	
LA QUINCY	
PALM DESERT	
PALM SPRINGS	
CALTRANS DISTRICT 8	
COUNTY OF RIVERSIDE	
OTHER ITEMS	
CORRIDOR MARKING (PHASE I/PHASE II)	
CITY HALL	
OTHER CITY BUILDING	
PHASE I IMPROVEMENTS	
PHASE II IMPROVEMENTS	
PHASE III - 1 IMPROVEMENT	
CVAS BUILDING (RTMG)	



SEE MATCHLINE LEFT

SEE MATCHLINE RIGHT



LIST OF TOP 21 CORRIDORS	
PHASE I	PHASE II
1 HIGHWAY 111	1 VARNER ROAD
2 WASHINGTON STREET	2 20.5 MILES
3 RAMON ROAD	3 8 INTERSECTIONS
4 MONTEREY AVENUE	4 AVENUE 50
5 COOK STREET	5 7.7 MILES
6 PALM DRIVE	6 7 INTERSECTIONS
7 BOB HOPE DRIVE	7 PORTOLA AVENUE
8 FRED WARMING DRIVE	8 5.1 MILES
9 DIMAH SHORE DRIVE	9 15 INTERSECTIONS
10 GENE AUTRY TRAIL	10 AVENUE 44
11 DATE PALM DRIVE	11 1.3 MILES
12 INDO BOULEVARD	12 2 INTERSECTIONS
13 JEFFERSON STREET	
14 VISTA CHINO	
15 PALM CANYON DRIVE	
16 COUNTRY CLUB DRIVE	
17 MONROE STREET	
18 AVENUE 48/DILLON ROAD	
19 SUNRISE WAY	
20 INDIAN CANYON DRIVE	
21 JACKSON STREET	



**RIVERSIDE
COUNTY
TRANSPORTATION
COMMISSION**

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Riverside County 2020 RTIP Submittal

2020 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM (2020 RTIP)

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Section 2. General Information

Riverside County Transportation Commission (RCTC)

Address: 4080 Lemon Street, 3rd Floor
Riverside, CA 92502

RCTC Website Link: <http://www.rctc.org>

RTIP Link: <http://www.rctc.org/2020RTIP>

RTP Link: <http://scagrtpscscs.net/Pages/default.aspx>

2016 RTP/SCS Project List

http://scagrtpscscs.net/Documents/2016/final/f2016RTPSCS_ProjectList.pdf

2016 RTP/SCS Amendment #1

http://scagrtpscscs.net/Documents/2016/final/f2016RTPSCS_amend01.pdf

2016 RTP/SCS Amendment #2

http://scagrtpscscs.net/Documents/2016/final/f2016RTPSCS_amend02.pdf

RCTC Executive Director:

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RCTC RTIP Staff:

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California Transportation Commission (CTC) Staff Contact Information

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Section 3. Background of Regional Transportation Improvement Program (RTIP)

A. What is the Regional Transportation Improvement Program?

The Regional Transportation Improvement Program (RTIP) is a program of highway, local road, transit and active transportation projects that a region plans to fund with State and Federal revenue programmed by the California Transportation Commission in the State Transportation Improvement Program (STIP). The RTIP is developed biennially by the regions and is due to the Commission by December 15 of every odd numbered year. The program of projects in the RTIP is a subset of projects in the Regional Transportation Plan (RTP), a federally mandated master transportation plan which guides a region's transportation investments over a 20 to 25-year period. The RTP is based on all reasonably anticipated funding, including federal, state and local sources. The Southern California Association of Governments is the Metropolitan Planning Organization responsible for developing and updating the RTP with input from the six county transportation commissions including, Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. Updated every 4 to 5 years, the RTP is developed through an extensive public participation process in the SCAG region and reflects the unique mobility, sustainability, and air quality needs of each subregion.

B. Regional Agency's Historical and Current Approach to developing the RTIP

The STIP process at RCTC starts once the CTC and Caltrans release the Draft STIP Fund Estimate in June of every odd year. Project priorities are considered for inclusion in the RTIP and are discussed with the RCTC Technical Advisory Committee (TAC), consisting of Public Works Directors from the cities and County, transit operators, subregional agencies (Coachella Valley Association of Governments and Western Riverside Council of Governments) and Caltrans District 8. Based on RCTC's priority projects and programs, including the voter approved Measure A program of projects and input from the TAC, staff prepares project recommendations for review and approval by the RCTC Budget and Implementation Committee followed by a final approval by the RCTC Board. The TAC, Budget and Implementation Committee and RCTC Board agendas are published on the RCTC website and posted at its offices located at the Riverside County Administrative Center. Upon submittal of the Draft RTIP, or immediately following the RTIP submittal deadline of December 15, 2019, RCTC will post the draft RTIP on its website as required by the STIP guidelines. Once the CTC adopts the STIP at its March 2020 meeting RCTC will post the adopted 2020 STIP project listing for Riverside County on its website.

Section 4. Completion of Prior RTIP Projects (Required per Section 68)

SR-60 Truck lanes project (PPNO #46J) –

The SR-60 Truck Lanes project was allocated at the May 17, 2017 CTC meeting. Construction is underway and is anticipated to be complete in late 2021.

Avenue 66 Grade Separation (PPNO #1189) –

The Avenue 66 Grade Separation project was allocated at the August 14-15, 2019 CTC meeting. Construction is underway and is anticipated to be complete late 2022.

I-15/Railroad Canyon Road Interchange (PPNO #3004U) –

I-15/Railroad Canyon Road Interchange was allocated at the Dec 4-5, 2019 CTC meeting. Construction is anticipated to be complete in Fall 2022.

CV Link (PPNO #1019) –

CV Link is scheduled to be allocated at the January 29-30, 2020 CTC meeting. The project is anticipated to be complete in late 2021.

Section 5. RTIP Outreach and Participation

A. RTIP Development and Approval Schedule

Action	Date
CTC adopts Fund Estimate and Guidelines	August 14-15, 2019
Caltrans identifies State Highway Needs	September 15, 2019
Caltrans submits draft ITIP	October 1, 2019
RCTC adopts 2020 RTIP	October 17, 2019
CTC ITIP Hearing, North	October 8, 2019
CTC ITIP Hearing, South	October 15, 2019
Regions submit RTIP to CTC	December 15, 2019
Caltrans submits ITIP to CTC	December 15, 2019
CTC STIP Hearing, North	January 30, 2020
CTC STIP Hearing, South	February 6, 2020
CTC publishes staff recommendations	February 28, 2020
CTC Adopts 2020 STIP	March 25-26, 2020

B. Public Participation/Project Selection Process

RCTC selects projects for STIP-RIP funding from approved transportation plans and programs. All projects programmed with state and federal funding, or are deemed regionally significant, must be included in the Metropolitan Planning Organization's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and Federal Transportation Improvement Program (FTIP). SCAG develops the RTP/SCS and FTIP, which undergoes an extensive public participation and outreach process. Public participation also occurs at the county level through the RCTC TAC, Budget and Implementation Committee, and RCTC Board meetings. At the local level, the cities and county provide input and propose projects based on planning activities, priorities and input from the public. RCTC meeting agendas are posted on the Commission's website and are physically posted at the Riverside County Administrative Center located at 4080 Lemon Street, Riverside, California 92502.

Project selections for RIP funds are based on several factors including fiscal years available for programming and project delivery schedules. Priority candidate projects in Western Riverside County will be selected from RCTC's Measure A 10-Year Delivery Plan (Riverside County voter approved half cent sales tax measure for transportation), or projects consistent with or that enhance Measure A. Projects in Coachella Valley are recommended by the Coachella Valley Association of Governments (CVAG) and are consistent with CVAG's Transportation Project Prioritization Study (TPPS).

2020 STIP Projects	
Project	Approved Plan(s)
I-15 French Valley Parkway Interchange	2019 FTIP, 2016 RTP/SCS, Measure A CETAP
71/91 Interchange	2019 FTIP, 2016 RTP/SCS, Measure A
I-10/Avenue 50 Interchange	2019 FTIP, 2016 RTP/SCS, CVAG TPPS
Coachella Valley Regional Signal Synchronization, Ph 2	2019 FTIP, 2016 RTP/SCS, CVAG TPPS

C. Consultation with Caltrans District (Required per Section 17)

Caltrans District: 8

RCTC consults with Caltrans District 8 on a regular basis regarding projects on the state highway system that are candidates for ITIP, State Highway Operation and Protection Program (SHOPP), and RTIP funding. Consultation continues throughout the development of the STIP ensuring the information in the Project Programming Reports (PPR) are accurate and complete, and to ensure projects are consistent with the RTP/SCS.

B. 2020 STIP Regional Funding Request

Section 6. 2020 STIP Regional Share and Request for Programming

- A. 2020 Regional Fund Share Per 2020 STIP Fund Estimate/New Programming Capacity
Target for Riverside County: \$21,274,000

B. Summary of Requested Programming –

RIP \$(000's)							
Agency	Project Description	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Phase
Caltrans/Temecula	I-15/French Valley IC	47,600					Cons
RCTC	SR-71/SR-91 IC			66,377			Cons
Coachella	I-10/Ave 50 IC				2,000		Cons
CVAG	Coachella Valley Regional Signal Synchronization, Ph 2				2,472		Cons
RCTC	PPM	1,000	900	900	396		Cons
	Total	48,600	900	67,277	4,868		

Section 7. Overview of Other Funding Included With Delivery of Regional Improvement Program (RIP) Projects

Non-RTIP funding comes from various fund sources and Riverside County seeks to leverage local dollars to provide additional funding from state and federal funding opportunities in addition to partnering with Caltrans. The SR-71/SR-91 Interchange Improvement project and I-10/Ave 50 new interchange project will seek future state and/or federal funding opportunities to fund Construction, such as SB 1 and INFRA program cycles. Both projects have completed environmental documents and design. Below is a listing of fund sources and corresponding 2020 STIP project:

Federal Congestion Mitigation and Air Quality (CMAQ)

- Coachella Valley Regional Signal Synchronization – Phase 2

Federal Surface Transportation Block Grant

- SR-71/SR91 Interchange

Federal INFRA Grant

- I-15/French Valley Parkway Interchange – Phase 2

Federal Demonstration Funds

- I-15/French Valley Parkway Interchange – Phase 2

Local funds

- SR-71/SR-91 Interchange (Measure A)
- I-15/French Valley Parkway Interchange – Phase 2 (City)
- I-10/Avenue 50 (City/TUMF)
- Coachella Valley Regional Signal Synchronization – Phase 2 (TUMF)

Seeking Future SB 1 (LPP/SCCP/TCEP)

- SR-71/SR-91 Interchange
- I-10/Avenue 50

The table below illustrates the total RTIP funding along with all other fund sources.

Proposed 2018 RTIP	Total RTIP	Other Funding \$ (000's)					Total Cons Cost
		RSTP	CMAQ	INFRA	Other Federal Funds	Local	
I-15/French Valley Pkwy IC	47,600			50,000	1,602	2,226	101,428
SR-71/SR-91 IC	66,377	32,623				35,000	134,000
I-10/Ave 50 IC	2,000					60,000	62,000
CV Regional Signal Synch.	2,472		18,433			28,528	49,433
PPM	3,196						3,196
Totals	121,645	32,623	18,433	50,000	1,602	125,754	350,057

Section 8. Interregional Transportation Improvement Program (ITIP) Funding

The purpose of the Interregional Transportation Improvement Program (ITIP) is to improve interregional mobility for people and goods in the State of California. As an interregional program, the ITIP is focused on increasing the throughput for highway and rail corridors of strategic importance outside the urbanized areas of the state. A sound transportation network between and connecting urbanized areas ports and borders is vital to the state's economic vitality. The ITIP is prepared in accordance with Government Code Section 14526, Streets and Highways Code Section 164 and the STIP Guidelines. The ITIP is a five-year program managed by Caltrans and funded with 25% of new STIP revenues in each cycle. Developed in cooperation with regional transportation planning agencies to ensure an integrated transportation program, the ITIP promotes the goal of improving interregional mobility and connectivity across California.

There are no ITIP projects proposed in Riverside County for the 2020 STIP as funding is severely limited. RCTC will work with Caltrans to develop potential projects for the 2022 ITIP cycle.

Section 9. Projects Planned Within the Corridor (Required per Section 20e)

I-15 Corridor Improvements (STIP Project: I-15/French Valley Interchange – Ph 2) –

The I-15 corridor in Riverside County spans between San Bernardino County line to the north and San Diego county line to the south. The I-15 corridor is designated as a North America Free Trade Agreement (NAFTA) corridor providing north-south access for goods distribution to and from the Mexico border and Ports of Los Angeles and Long Beach by way of intersecting I-10, SR-60, SR-91, and I-215. The Secretary of Transportation has designated the entirety of I-15 in Riverside County as a segment of the Primary Highway Freight System (PHFS), pursuant to the Fixing America's Surface Transportation (FAST) Act, based on freight tonnage and volume, average daily truck traffic, truck traffic as a percentage of total traffic, population centers, network connectivity, ports of entry (land and sea), and access to energy exploration and production. The corridor experiences heavy congestion and is also a major truck corridor. The multi-state I-15 Corridor System Master Plan also identifies critical projects and congestion choke-points from the Mexico border to northern Utah. Several projects are identified in Riverside County.

The French Valley Parkway Interchange Phase 2 project is in the city of Temecula, and is carried over from the 2018 STIP into the 2020 STIP. There is a significant amount of congestion on I-15 and adjacent arterials impacting the cities of Temecula and Murrieta - as vehicle queuing on the highway backs up causing safety and operational issues, especially with the amount of heavy duty trucks along this segment. In addition, vehicles entering the highway system are queuing at great lengths causing severe congestion on the adjacent local arterials. The project will significantly improve traffic congestion and operations on I-15 and local arterials.

North of the French Valley Parkway interchange along the I-15 Corridor is the Railroad Canyon Road interchange, in the city of Lake Elsinore, which STIP funds were allocated in December 2019, and construction will begin in spring 2020.

Further north along the I-15 Corridor, RCTC, in partnership with Caltrans, is currently investing \$455 million to improve the first toll segment on I-15 between SR60 and Cajalco Road, which consists of adding two tolled express lanes in each direction, complimenting the recently completed SR-91 express lanes project, for a distance of approximately 15 miles. Construction began in December 2017. The next segment planned for I-15 will extend the toll lanes further south (from Cajalco Road to SR 74) for a distance of 14.5 miles. This segment, I-15 Express Lanes Southern Extension, is scheduled for environmental clearance in 2023.

Lastly, the County of Riverside recently completed the I-15/Limonite Avenue interchange improvement project. The Limonite Interchange project is funded with SB 132 funds and will provide congestion relief in this growing part of the county.

State Routes 71 and 91 (STIP Project: 71/91 Interchange) –

SR-71 Corridor Improvements:

The Los Angeles County Metropolitan Transportation Authority's (LA METRO) SR-71 Freeway Conversion Project and RCTC's SR-71/91 Interchange Improvement Project will mutually benefit each other by delivering key operational efficiencies that will allow traffic to flow freely to and from SR-71 at its southern terminus at SR-91. SR-71 is nearly equidistant between downtown Los Angeles and downtown San Bernardino, about 28 miles from each, and serves as an essential commuter and freight route through the "four corners" area where Los Angeles, Orange, San Bernardino, and Riverside counties meet, connecting SR-91, SR-60, I-10, and SR-57.

LA METRO's SR-71 Freeway Conversion Project will improve SR-71 from a highway to a freeway by widening the existing two lanes in each direction to accommodate one High-Occupancy Vehicle (HOV) lane, three general purpose lanes in each direction, expanded access control, and permanent closure of three at-grade intersections to provide a full access controlled freeway from SR-60 to I-10. The next phase of the SR-71 Freeway Conversion Project (from Mission Boulevard to SR-60) received state funding in May 2018, and will go to construction in 2020 to be completed by 2024.

Additionally, RCTC's Measure A expenditure plan calls for widening SR-71 from the San Bernardino/Riverside County line to SR-91 to three mixed flow lanes in each direction. Like the SR-71/91 Interchange Improvement Project, the SR-71 expansion project is a high-priority project for the State.

SR-91 Corridor Improvements:

RCTC has recently invested \$1.4 billion along the 91 Corridor between the Riverside/Orange county line and I-15, which included widening SR-91 by one GP lane in each direction east of Green River Road, adding collector-distributor (CD) roads and direct south connectors at I-15/SR-91, extending the 91 Express Lanes to I-15, and providing system/local interchange improvements. The new lanes and other improvements, such as express bus service and Metrolink service, are expected to save time, offer choice and reliability, boost safety, enhance access and job creation, promote ridesharing, reduce pollution and aid the movement of goods along the region's roadways.

Other planned projects scheduled to be implemented within the next few years include the I-15/SR-91 Express Lanes Connector, an auxiliary lane between from SR-241 to SR-71, and the SR-241/91 Express Connector.

Interstate 10 (STIP Project: I-10/Avenue 50 Interchange) –

I-10 is a major freeway that originates in Los Angeles County at the junction with State Route 1 (SR-1) in Santa Monica and extends eastwardly to its terminus in Florida. Within District 8, I-10 is 194.8 miles in length. Beginning as an eight-lane facility in the County of San Bernardino at the Los Angeles County Line and moving easterly, it traverses the Cities of Montclair, Upland, Ontario, Rancho Cucamonga, Fontana, Rialto, Colton, San Bernardino and Loma Linda. I-10 transitions to six lanes in the City of Redlands, and passes through the City of Yucaipa and into

the County of Riverside. I-10 continues through the City of Calimesa to Beaumont where it transitions to eight lanes and traverses the Cities of Banning, Palm Springs, Cathedral City and Rancho Mirage. Between the Monterey Avenue interchange in Palm Desert and its junction with SR-86 in Indio, I-10 is a six-lane facility. East of SR-86, the remainder of I-10 in District 8 is a four-lane facility that passes through the Cities of Coachella and Blythe ending at the Arizona State Line. Existing I-10 in the vicinity of the proposed interchange runs in an east/west direction and is delineated to provide two general-purpose lanes in each direction.

East of the junction of I-10 and State Route 60, I-10 has been identified in the 2013 Interregional Transportation Strategic Plan Status Update as a High Emphasis Route included in the Arizona Gateway Route. I-10 is included in the State Freeway and Expressway System with the Federal Functional classifications of Rural Principal Arterial and extension of a Rural Principal Arterial into an urban area. I-10 is also included in the National Highway System (NHS), Department of Defense Priority Network, and the Strategic Highway Corridor Network. The 1990 Federal Surface Transportation Assistance Act (STAA) identifies I-10 as a "National Network" route for STAA trucks. I-10, within the project limits, is not identified in the Extralegal Load Network (ELLN) according to the Division of Traffic Operations (May 2001).

Other projects on I-10 and/or near the I-10/Avenue 50 interchange include:

- SR-86/Dillon Road: Improvements include reconstruction and widening Dillon Road from 2 to 4 lanes and to reconstruct and widen the ramps.
- I-10/Dillon Road: Improvements include reconstruction and widening of the interchange ramps.
- SR-86/Avenue 50: Improvements include relocation and realignment of Avenue 50 and Tyler Street, bike lanes, sidewalks, reconstructed traffic signals, and extended ramp acceleration and deceleration lanes.
- Avenue 50 Extension: Improvements include constructing the extension of Avenue 50 from its current terminus at Fillmore Street to approximately 1,100' south of I-10.
- I-10 Pavement Rehabilitation: Improvements include an EB truck climbing lane east of the I-10/Dillon Road interchange and CRCP overlay on I-10 from 2 miles east of the I-10/Dillon Road interchange to the Arizona State Line.

Coachella Valley Corridors (STIP Project: Coachella Valley Regional Signal Synchronization, Ph 2):

CVAG's Regional Signal Synchronization Master Plan identifies seventy regional arterials that collectively represent the transportation system that will benefit from traffic signal synchronization. CVAG's Executive Committee prioritized the top twenty-one of these corridors within the Plan. Phase I of the project implements synchronization and ITS solutions to the top three corridors, Highway 111, Ramon Road and Washington Street. Phase 2 of the Regional Signal Synchronization project will focus on doing the same for the next eighteen top-ranked corridors.

Providing a forward-thinking approach, CVAG has identified the need to provide future traffic signal synchronization, interconnect regional arterials and establish a regional Traffic Management Center for more than 600 traffic signals in the Coachella Valley. The objective of this project is to reduce traffic congestion and its associated negative impacts by deploying advanced technologies to allow the region's local jurisdictions to operate their traffic signals and ITS efficiently and effectively. At the same time, CVAG needs to evaluate the rapid changes in transportation technologies within the next five years. Our transportation system will be facing major challenges with emerging technologies, including connected vehicles, autonomous vehicles, big data, integrated corridor management (ICM), and smart cities.

C. Relationship of RTIP to RTP/SCS and Benefits of RTIP

Section 10. Relationship of RTIP to RTP/SCS Goals and Strategies.

The following table demonstrates how the Riverside County 2020 STIP projects meet the goals of SCAG's adopted 2016 RTP/SCS.

	I-15/French Valley Pkwy IC	SR-71/SR-91 IC	I-10/Ave 50 IC	Coachella Valley Regional Signal Synch	PPM
RTP/SCS Goal #1: Align plan investments and policies with improving regional economic development and competitiveness.	X	X	X	X	X
RTP/SCS Goal #2: Maximize mobility and accessibility for all people and goods in the region.	X	X	X	X	X
RTP/SCS Goal #3: Ensure travel safety and reliability for all people and goods in the region.	X	X	X	X	X
RTP/SCS Goal #4: Preserve and ensure a sustainable regional transportation system.	X	X	X	X	X
RTP/SCS Goal #5: Maximize the productivity of our transportation system.	X	X	X	X	X
RTP/SCS Goal #6: Protect the environment and health of our residents by improving air quality and encouraging active transportation.	X	X	X	X	X
RTP/SCS Goal #7: Actively encourage and create incentives for energy efficiency, where possible.				X	
RTP/SCS Goal #8: Encourage land use and growth patterns that facilitate transit and active transportation.					X
RTP/SCS Goal #9: Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.					X

RTP/SCS Implementation Strategies

In addition to the 2016 RTP/SCS goals, various strategies to meet Transportation Conformity and SB 375 goals and requirements for reducing Greenhouse Gas emissions are noted.

These strategies include:

- Land Use
- **Transportation**
- Technological Innovation
- Protecting the Environment

Transportation strategies are further divided into two broad categories: 1) Maximizing Our Current System; and 2) Completing Our System. These strategies include:

1. Preserve Our Existing System
2. Manage Congestion (Transportation Demand Management/Transportation Systems Management)
3. Promote Safety and Security
4. Transit
5. Passenger Rail
6. Active Transportation
7. Highways and Arterials
8. Express Lane Network
9. Goods Movement
10. Meeting Airport Demand

Discussion of 2020 RTIP Consistency with 2016 RTP/SCS Implementation Strategies

Below is a discussion of how Riverside County's 2020 RTIP proposed projects meet the above transportation strategies, including the enumerated corresponding strategies.

I-15 French Valley Parkway Interchange (Phase 2) –

The I-15 French Valley Parkway interchange will provide a much needed improvement to address traffic congestion and emissions associated with the queuing of vehicles that back up on the local arterials and mainline freeway at current interchanges. Eliminating the queuing will significantly reduce safety hazards and improve the movement of vehicles, including buses and trucks that travel within the southwest region of Riverside County. The region's economic competitiveness and air quality will also improve as traffic congestion and travel time will be significantly reduced. (RTP/SCS Transportation Strategies: 2, 3, 7, 9)

SR-71/SR-91 Interchange –

The 71/91 Interchange project will replace the eastbound 91 to northbound 71 loop connector with a direct connector and construct a collector/distributor system (auxiliary lanes) in the

eastbound direction between the Green River Road and Serfas Club Drive. This will relieve significant congestion and enhance safety on both freeways.
(RTP/SCS Transportation Strategies: 2, 3, 7, 9)

I-10/Avenue 50 Interchange –

The I-10/Avenue 50 Interchange project will construct a new interchange at I-10 and a six-lane arterial including an extended acceleration lane to minimize congestion from weaving, and pedestrian/bicycle facilities, and neighborhood electric vehicles will also be accommodated.
(RTP/SCS Transportation Strategies: 3, 6, 7)

Coachella Valley Regional Signal Synchronization, Phase 2 –

The project will implement signal synchronization on 18 corridors in the Coachella Valley and will provide for improved operations and traffic flow.
(RTP/SCS Transportation Strategies: 2, 3, 7)

Planning, Programming, and Monitoring (PPM) –

PPM funds are allocated for planning activities such as feasibility studies, administration of RTIP, preparation of project study reports, and monitoring the performance of the transportation system so that funds are targeted to projects that meet funding eligibility and regional goals and objectives. PPM funds are used in all aspects of planning and programming of transportation improvements for various modes of travel along the highway, arterial, rail, transit and trail systems. (RTP/SCS Transportation Strategies: 1 through 10)

Section 11. Regional and Statewide Benefits of RTIP

Regional and Statewide Benefits

Benefits of the SCAG 2016 RTP/SCS would result in a regional transportation network that improves travel conditions and air quality, while also promoting an equitable distribution of benefits – that is, social equity. The Plan will:

- ✓ Increase the combined percentage of work trips made by carpooling, active transportation, and public transit by about 4 percent, with a commensurate reduction in the share of commuters traveling by single occupant vehicle.
- ✓ Reduce Vehicle Miles Traveled (VMT) per capita by nearly ten percent and Vehicle Hours Traveled (VHT) per capita by 18 percent (for automobiles and light/medium duty trucks) as a result of more location efficient land use patterns and improved transit service.
- ✓ Increase daily transit travel by nearly one third, as a result of improved transit service and more transit-oriented development patterns.

- ✓ Reduce delay per capita by 45 percent
- ✓ Reduce total heavy duty truck delay by nearly 40 percent
- ✓ Create an estimated 374,500 additional new jobs annually
- ✓ Reduce the amount of previously undeveloped (Greenfield) lands converted to more urbanized use by 23 percent. By conserving open space and other rural lands, the Plan provides a solid foundation for more sustainable development in the SCAG region.

The RTP/SCS is developed to meet SB 375 Greenhouse Gas emissions targets established by the California Air Resources Board (ARB). The current 2016 RTP/SCS meets these targets as well as meeting emissions targets of criteria pollutants set by the Environmental Protection Agency (EPA) per its Transportation Conformity Rule.

County Level Benefits

Since 1976, when RCTC was created by the state legislature, local voices have had an important and critical role in deciding our transportation future. Based on the success of the voter approved half-cent sales tax (Measure A) in 1988 and an extension of Measure A in 2002, RCTC has established priorities that guide the selection of projects for transportation funding.

In addition to meeting state and federal transportation air quality and funding requirements, selection of RTIP projects will result in benefits to one or more of the following RCTC policy goals and objectives included in its Fiscal Year 2019/20 budget document:

QUALITY OF LIFE <i>RCTC is focused on improving life for the people of Riverside County and empowering them to live life at their pace.</i>	
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 2.4 million today.
Economic Impact	RCTC has invested almost \$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.

D. Regional Level Performance Evaluation of RTIP

Section 12. Regional Level Performance Evaluation/Cost Effectiveness (per Section 19A)

2020 STIP-RTIP SCAG Regional Level Performance Evaluation

Pursuant to the State Transportation Improvement Program (STIP) guidelines recently adopted by the California Transportation Commission (Commission), the Southern California Association of Governments (SCAG) is pleased to submit the requested regional performance evaluation for SCAG region's 2020 STIP.

SCAG is the largest Metropolitan Planning Organization (MPO) in the country and the region is home to approximately 19 million Californians. SCAG region's STIP includes several, often partial projects included in SCAG's 2016 Regional Transportation Plan (RTP)/Sustainable Communities Strategies (SCS). The RTP/SCS meets the GHG targets established by the California Air Resources Board (CARB) pursuant to Senate Bill 375 (SB 375) specific to the SCAG region. Given these projects are drawn from the conforming RTP/SCS, it is reasonable to affirm that these STIP projects move the region towards the successful implementation of the RTP/SCS. Please note the following related to the 2020 STIP-RTIP:

- The STIP-RTIP does not include system wide preservation investments. As such, it does not impact asset conditions on the State Highway System (SHS), local roads, or transit assets. However, life-cycle costs are considered in the analysis for the capital projects proposed by these STIP-RTIP Submittals.
- This STIP-RTIP does not include land use strategies and only modest transit and active transportation investments. Therefore, mode shift impacts are negligible.
- The STIP-RTIP includes several highway projects, several involving pricing on High Occupancy Toll (HOT) lanes. These projects work best in tandem with SCAG's RTP/SCS Travel Demand Management (TDM) strategies. As such, TDM strategies are included in the analysis.
- The STIP-RTIP does not include smart land use strategies or other broad based pricing strategies (mileage based user charges) included in the RTP/SCS. Therefore, impacts on several measures in the STIP guidelines are not considered (e.g., percent of housing and jobs within 0.5 miles of transit stops with frequent transit service).

The STIP guidelines list a number of measures to report, depending on available data and tools. A brief summary of the analysis results for the applicable measures is provided below.

Investment Effectiveness

The 2020 STIP benefit/cost (B/C) analysis for the SCAG region utilizes the Cal-B/C model to calculate regional network benefits. It calculates and aggregates scenario benefits after travel impacts are evaluated using a regional travel demand model. The benefit/cost ratio compares the incremental benefits with the incremental costs of transportation investments. The benefits are divided into several categories, including:

- Savings resulting from reduced travel delay;
- Air quality improvements; and
- Reductions in vehicle operating costs

For these categories, SCAG's travel demand model results are used to estimate the benefits of the 2020 STIP *Build* planning scenario compared with the *No Build* planning scenario. Model data for the 2020 STIP were summarized to facilitate analysis. Consistent with the overall STIP performance evaluation, benefits associated with SCAG's 2016 RTP/SCS TDM strategies are reflected in the analysis. Most of these benefits are a function of changes in Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT). Costs included in the analysis reflect estimates of lifecycle costs including capital and ongoing operations and maintenance costs. The 2020 STIP provides a regional network-level benefit/cost ratio of 5.42. Benefits and costs are estimated over the planning period of fifty years.

INVESTMENT ANALYSIS			
SUMMARY RESULTS			
		Total Over 50 Years	Average Annual
Life-Cycle Costs (mil. \$)	\$1,243.4		
Life-Cycle Benefits (mil. \$)	\$6,740.4		
Net Present Value (mil. \$)	\$5,496.9		
Benefit / Cost Ratio:	5.42		
Rate of Return on Investment:	12.4%		
Payback Period:	5 years		
ITEMIZED BENEFITS (mil. \$)			
Travel Time Savings		\$5,476.5	\$109.5
Veh. Op. Cost Savings		\$920.9	\$18.4
Accident Cost Savings		\$343.0	\$6.9
Emission Cost Savings		\$6,740.4	\$134.8
TOTAL BENEFITS			
Person-Hours of Time Saved		1,400,859,466	28,017,189

Please note that a regional travel demand model may not be as sensitive to individual project-level impacts. As such, this analysis is not necessarily comparable to the project-level assessments as the regional evaluation accounts for the complementary or duplicative benefits of combinations of projects with the scenarios modeled externally using SCAG's regional travel demand model.

VMT per Capita

Impacts are projected to increase VMT per capita by 0.005 miles or 0.02 percent per day (compared to the 2040 no build scenario as previously discussed)

Percent of congested VMT at or below 35 mph

Impacts are projected to reduce congested VMT by 1.9 percent.

Commute mode share (travel to work or school)

Impacts are expected to maintain the percentage of drive alone trips to work and increase in drive alone trips to colleges or universities by 0.01 percent.

Asset Conditions (State Highway and Local Streets)

Based on the 2018 California Asset Management Plan, 14.4 percent of the State Highway System (SHS) lane miles are in poor conditions. The average Pavement Condition Index (PCI) for the region's local roads is 69 based on the 2018 Statewide Local Streets and Roads Needs Assessment. The STIP does not impact asset conditions in this cycle.

Percent of transit assets that have surpassed the FTA useful life period

Not applicable

Highway Buffer Index (the extra time cushion that most travelers add to their average travel time when planning trips to ensure on-time arrival)

The full implementation of the region's STIP projects will improve travel time reliability since HOT lane implementations have been shown to improve overall travel time reliability. However, it is not possible to estimate these impacts with current tools.

Fatalities

Not applicable.

Percent of housing and jobs within 0.5 miles of transit stops with frequent transit service

The full implementation of the region's STIP projects will increase household within 0.5 miles by 1.02 percent and jobs access within 0.5 miles by 0.7 percent.

Mean commute travel time (to work or school)

Impacts are projected to reduce mean work commute travel time by 0.08 minutes for automobiles and decreased mean work commute time by 0.33 minutes for transit. Impacts are also projected to decrease mean school commute travel times by 0.02 minutes for automobiles and by 0.17 minutes for transit.

Change in acres of agricultural land

Not applicable

GHG Impacts

CO2 emissions/capita are projected to be reduced by 0.01 pounds per capita daily.

The table on the next page summarizes the performance measures results as suggested by the RTP guidelines. Note that the table compares future conditions, as opposed to comparing to current condition, without the STIP-RTIP against future conditions with the STIP-RTIP. This allows for isolating the impacts of the STIP-RTIP without taking credit for other developments, such as improved fuel efficiencies or smart land use strategies.

Table B2 Evaluation
Cost-Effectiveness Indicators and Measures

Goal	Indicator/Measure	Future Level of Performance (Baseline)		Projected Performance Improvement (2040)	
Congestion Reduction	Reduce Vehicle Miles Traveled/capita	20.78		Decrease in VMT per capita = 0.005 miles per day	
	Reduce Percent of congested VMT (at or below 35 mph)	10.54%		Reduction of 3.0%	
	Change in commute mode share (travel to work or school)				
	Vehicle Trips Drive Alone	Travel to Work 71.86%	Travel to School 8.46%	Travel to Work 0.00%	Travel to School Reduction of 0.01%
	Vehicle Trips 2 Person Carpool	3.69%	8.24%	Reduction of 0.01%	0.00%
	Vehicle Trips 3+ Person Carpool	2.33%	10.26%	Reduction of 0.01%	0.00%
	Auto Passenger Trips	9.54%	40.45%	Reduction of 0.03%	0.00%
	Transit Trips	7.59%	4.81%	Increase of 0.05%	Increase of 0.04%
	Non-Motorized Person Trips	4.98%	27.78%	Reduction of 0.01%	Reduction of 0.02%
Infrastructure Condition	Reduce percent of distressed state highway lane-miles	Not applicable		Not applicable	
	Improve Pavement Condition Index (local streets and roads)	Not applicable		Not applicable	
	Reduce percent of highway bridge lane-miles in need of replacement or rehabilitation (sufficiency rating of 80 or below)	Not applicable		Not applicable	
	Reduce percent of transit assets that have surpassed the FTA useful life period	Not applicable		Not applicable	
System Reliability	Reduce Highway Buffer Index (the time cushion added to the average commute travel times to ensure on-time arrival).	Future conditions cannot be modeled		Improvement cannot be modeled	
Safety	Reduce fatalities and serious injuries per capita (daily)	Not applicable		Not applicable	
	Reduce fatalities and serious injuries per VMT	Not applicable		Not applicable	
Economic Vitality	Increase percent of housing and jobs within 0.5 miles of transit stops with frequent transit service	Household % = 57.66% Jobs % = 66.71%		Household % = Increase of 01.02% Jobs % = Increase of 0.70%	
	Reduce mean commute travel time (to work or school)	Auto Home Based Work = 22.20 mins Auto School = 11.89 mins Transit Home Based Work = 76.40 mins Transit School = 58.46 mins		Auto Home Based Work Reduction = 0.05 mins Auto School Increase = 0.01 mins Transit Home Based Work Increase = 0.03 mins Transit School Increase = 0.05 mins	
Environmental Sustainability	Change in acres of agricultural land	Not applicable		Not applicable	
	CO ₂ emissions reduction per capita (daily)	9.73 lbs		Daily Reduction per capita = 0.01 lbs	

SCAG certifies that the proposed 2020 Regional Transportation Improvement Program is consistent with the current approved Regional Transportation Plan and Sustainable Communities Strategies. To the best of SCAG's knowledge, at this time, the projects identified for funding in the proposed 2020 Regional Transportation Improvement Program are not anticipated to be impacted by implementation of the Safer Affordable Fuel Efficient Vehicles Rule Part One – One National Program which became effective on November 26, 2019.

Section 13. Project Specific Evaluation (Required per Section 19D)

Per STIP guidelines, a project level evaluation shall be submitted for projects for which construction is proposed if:

- The total amount of existing and proposed STIP for right-of-way and/or construction of the project is \$15 million or greater, or
- The total project cost is \$50 million or greater.

There are two projects that meet the above criteria for a project level evaluation:

- 71/91 Interchange
- I-10/Avenue 50 Interchange
- Coachella Valley Regional Signal Synchronization, Phase 2

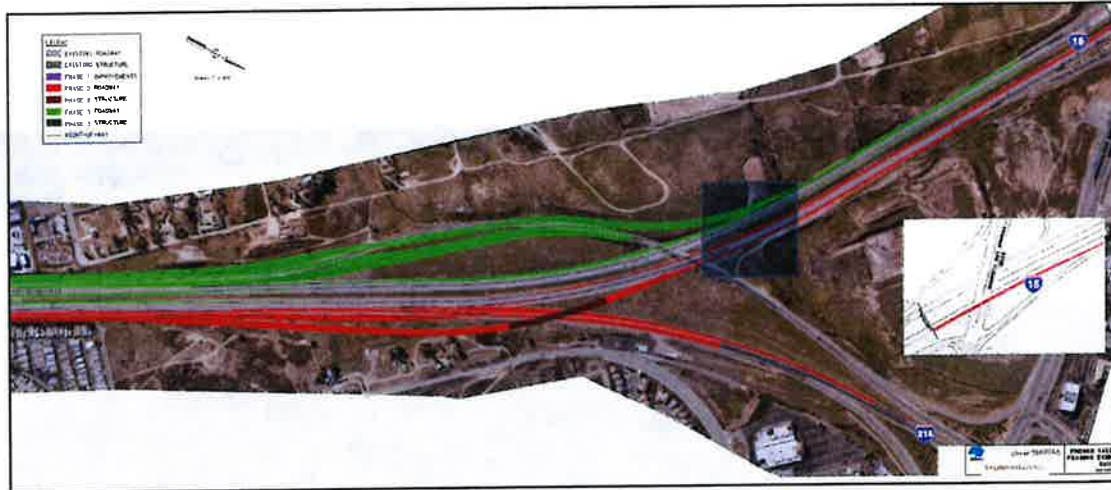
The Benefit Cost Analysis for these projects are included in the Appendices in Section 16.

E. Detailed Project Information

Section 14. Overview of Projects Programmed with RIP Funding

I-15/French Valley Parkway Interchange Phase 2:

Construct a 2-lane northbound collector distributor beginning at I-15/SR-79 Jct. and ending just north of I-15/I-215 Jct. with connectors to I-15 and I-215 (I-215 PM: 8.43 TO 9.75).



71/91 Interchange:

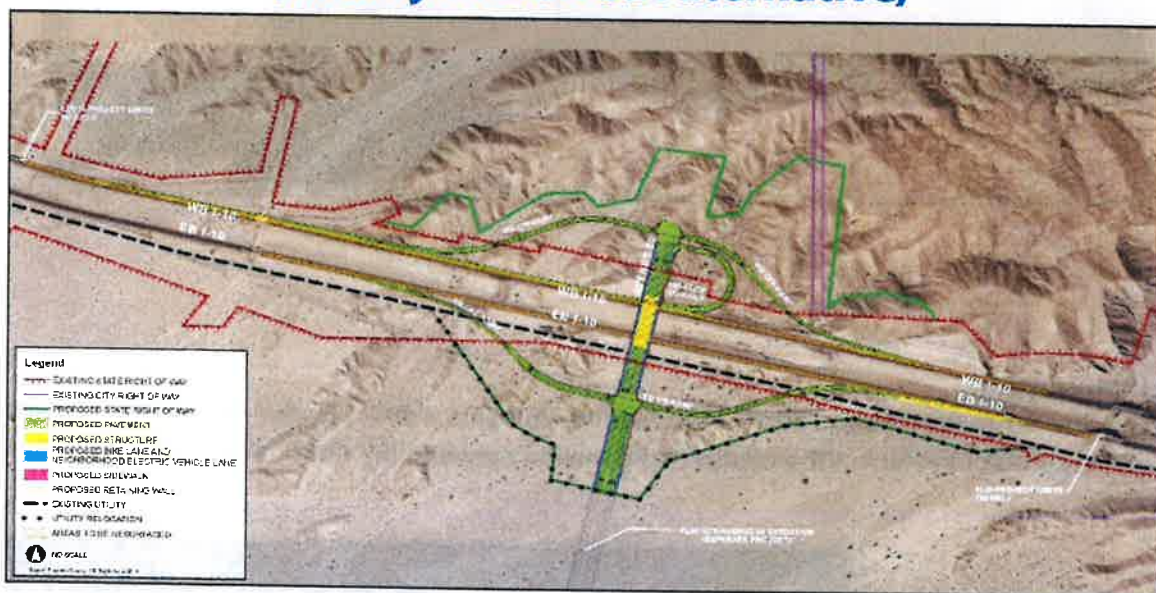
Replace Rte 91 to northbound Rte 71 loop connector with a direct fly-over connector, construct collector/distributor system in the eastbound direction between the Green River Road and Serfas Club Drive.



I-10/Avenue 50 Interchange:

On I-10 in Eastern Coachella, construct a new six through land Avenue 50 Interchange, eastbound exit ramp, west bound exit ramp, eastbound and westbound entry ramps, westbound loop entry ramps, and add acceleration lane in westbound direction.

Alternative 4 (Locally Preferred Alternative)



In Eastern Riverside County (Coachella Valley), implement a regional signal synchronization system on 18 corridors, including approximately 244 signalized intersections along 93 miles of arterial roadway.



F. Appendices

Section 15. Projects Programming Request (PPR) Forms

PPRs:

- **I-15 French Valley Parkway Interchange, Ph 2**
- **71/91 Interchange**
- **I-10/Avenue 50**
- **CVAG Regional Signal Synchronization, Ph2**
- **Planning, Programming and Monitoring (PPM)**

PPR Form

I-15/French Valley Parkway Interchange, Ph 2

Amendment (Existing Project) Yes						Date:	09/09/19
District	EA	Project ID	PPNO	MPO ID	Alt Proj. ID / prg.		
08	43272	0800020178	0021K	RIV031215			
County	Route/Corridor	PM Bk	PM Ahd	Project Sponsor/Lead Agency			
RIV	15	6.6	9.7	Temecula, City of			
RIV	215	R8.4	R9.3	MPO		Element	
				SCAG		CO	
Project Manager/Contact		Phone		E-mail Address			
Meardey Tim		(909)983-6480		meardey.tim@dot.ca.gov			
Project Title							
French Valley Parkway IC - Collector/Distributor (Phase 2)							
Location (Project Limits), Description (Scope of Work)							
In the city of Temecula. Construct a two lane NB Collector Distributor beginning at Routes 15/79 Junction and extending just north of Routes 15/215 Junction, with connectors to Routes 15 and 215.							
Component							
PA&ED		Temecula, City of					
PS&E		Temecula, City of					
Right of Way		Temecula, City of					
Construction		Caltrans					
Legislative Districts							
Assembly:	67,75	Senate:	28	Congressional:	42,50		
Project Benefits							
improve traffic flow and air quality, enhance safety and highway operations by reducing congestion and improving level of service.							
Purpose and Need							
The purpose and need of the project is to improve traffic flow, enhance safety by reducing congestion and eliminate existing deficiencies. The project is needed to reduce current and projected traffic congestion on the ramps and freeway mainline in the project area, improve safety and operations between Winchester Road and the I-15/I-215 Junction, provide alternative vehicular access to I-15 that will also provide operational improvement to the I-15/Winchester Road interchange, and to provide improvements to accommodate projected							
Category		Outputs/Outcomes			Unit	Total	
State Highway Road Construction		Operational improvement(s)			Each	9640	
State Highway Road Construction		New bridge(s)			Each	650	
State Highway Road Construction		Modified/Reconstructed bridge(s)			Each	355	
State Highway Road Construction		Mixed flow lane-mile(s) constructed			Miles	4.9	
ADA Improvements N		Bike/Ped Improvements N			Reversible Lane analysis N		
Inc. Sustainable Communities Strategy Goals N				Reduces Greenhouse Gas Emissions N			
Project Milestone					Existing	Proposed	
Project Study Report Approved							
Begin Environmental (PA&ED) Phase							
Circulate Draft Environmental Document					Document Type	ND/FONSI	
Draft Project Report							
End Environmental Phase (PA&ED Milestone)					01/29/2010		
Begin Design (PS&E) Phase					10/25/2016		
End Design Phase (Ready to List for Advertisement Milestone)					03/30/2020	08/27/20	
Begin Right of Way Phase					10/25/2016		
End Right of Way Phase (Right of Way Certification Milestone)					03/30/2020	08/27/20	
Begin Construction Phase (Contract Award Milestone)					12/01/2020	03/04/21	
End Construction Phase (Construction Contract Acceptance Milestone)					12/01/2022	12/01/22	
Begin Closeout Phase					12/02/2022	12/02/22	
End Closeout Phase (Closeout Report)					12/02/2024	12/02/24	

ADA Notice

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PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised Mar, 1 2018 v7.08)

Date: 09/09/19

District	County	Route	EA	Project ID	PPNO	Alt. ID
08	RIV, RIV,	15, 215,	43272	0800020178	0021K	
Project Title: French Valley Parkway IC - Collector/Distributor (Phase 2)						

Existing Total Project Cost (\$1,000s)									Implementing Agency
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)	2,610							2,610	Temecula, City of
PS&E	3,137							3,137	Temecula, City of
R/W SUP (CT)									Temecula, City of
CON SUP (CT)		6,000						6,000	Caltrans
R/W	4,660							4,660	Temecula, City of
CON		43,517						43,517	Caltrans
TOTAL	10,407	49,517						59,924	
Proposed Total Project Cost (\$1,000s)									Notes
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)	2,610							2,610	
PS&E	2,704							2,704	
R/W SUP (CT)									
CON SUP (CT)									
R/W	5,580							5,580	
CON		101,428						101,428	
TOTAL	10,894	101,428						112,322	

Fund No. 1:	RIP - National Hwy System (NH)								Program Code
	Existing Funding (\$1,000s)								20.XX.075.600
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									Riverside County Trans Commissio
PS&E									
R/W SUP (CT)									
CON SUP (CT)		6,000						6,000	
R/W									
CON		41,600						41,600	
TOTAL		47,600						47,600	
Proposed Funding (\$1,000s)									Notes
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)									Eliminate CON SUP (CT) funding. Increase CON from \$41.6 M to \$47.6 M. Request state-only STIP funds to comply with non-federal match requirement for INFRA Grant.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		47,600						47,600	
TOTAL		47,600						47,600	

Fund No. 2:	Demo - Demonstration-State TEA21 (DEMOS21)								Program Code
	Existing Funding (\$1,000s)								20.30.010.680
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									Temecula, City of
PS&E	671							671	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		931						931	
TOTAL	671	931						1,602	
Proposed Funding (\$1,000s)									Notes
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)									Eliminate PS&E funding. Increase CON from \$931 K to \$1.602 M.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		1,602						1,602	
TOTAL		1,602						1,602	

Fund No. 3:	Local Funds - City Funds (CITY)								Program Code
Existing Funding (\$1,000s)									LOCAL FUNDS
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)	440							440	Temecula, City of
PS&E	544							544	
R/W SUP (CT)									
CON SUP (CT)									
R/W	16							16	
CON		986						986	
TOTAL	1,000	986						1,986	
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	440							440	Increase PS&E from \$544 K to \$782 K. Increase R/W from \$16 K to \$936 K. Increase CON from \$986 K to \$2.226 M.
PS&E	782							782	
R/W SUP (CT)									
CON SUP (CT)									
R/W	936							936	
CON		2,226						2,226	
TOTAL	2,158	2,226						4,384	

Fund No. 4:	Local Funds - Eastern Riverside Transportation Uniform Mitigation (ERVUMF)								Program Code
Existing Funding (\$1,000s)									LOCAL FUNDS
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)	2,170							2,170	Temecula, City of
PS&E	1,922							1,922	
R/W SUP (CT)									
CON SUP (CT)									
R/W	4,644							4,644	
CON									
TOTAL	8,736							8,736	
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	2,170							2,170	
PS&E	1,922							1,922	
R/W SUP (CT)									
CON SUP (CT)									
R/W	4,644							4,644	
CON									
TOTAL	8,736							8,736	

Fund No. 5:	Federal Funds - Infrastructure for Rebuilding America Program Grant								Program Code
Existing Funding (\$1,000s)									
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									New funding source.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON		50,000						50,000	
TOTAL		50,000						50,000	

PPR Form
71/91 Interchange

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

General Instructions

Amendment (Existing Project) Y/N					Date:	12/30/19
District	EA	Project ID		PPNO	MPO ID	
08	OF541	0800000137		0077G		
County	Route/Corridor	PM Bk	PM Ahd	Nominating Agency		
RIV	91	R0.4	R3.7	Riverside County Transportation Commission (RCTC)		
				MPO	Element	
				SCAG	Capital Outlay	
Project Manager/Contact		Phone		E-mail Address		
Mark Lancaster		(951) 787-7141		mlancaster@rctc.org		
Project Title						
Route 91/71 Interchange and Connectors						
Location (Project Limits), Description (Scope of Work)						
Replace Rte 91 to northbound Rte 71 loop connector w/a direct fly-over connector, construct a collector/distributor system in the eastbound direction between the Green River Road and Serfas Club Drive.						
Component		Implementing Agency				
PA&ED		Riverside County Transportation Commission (RCTC)				
PS&E		Riverside County Transportation Commission (RCTC)				
Right of Way		Riverside County Transportation Commission (RCTC)				
Construction		Riverside County Transportation Commission (RCTC)				
Legislative Districts						
Assembly:	64,66	Senate:	36	Congressional:	44	
Project Benefits						
Relieve congestion, improve mobility and enhance safety on eastbound State Route 91 and northbound State Route 71.						
Purpose and Need						
Relieve congestion, improve mobility and enhance safety on eastbound State Route 91 and northbound State 71 by replacing a loop connector ramp with a short weaving distance with a direct connector ramp and auxiliary lanes that will improve traffic flow between the two highways.						
Category		Outputs			Unit	Total
Operational Improvements		Interchange modifications			EA	1
NHS Improvements	Yes	Roadway Class		Reversible Lane analysis	No	
Inc. Sustainable Communities Strategy Goals		Yes	Reduces Greenhouse Gas Emissions		No	
Project Milestone					Existing	Proposed
Project Study Report Approved						
Begin Environmental (PA&ED) Phase						
Circulate Draft Environmental Document			Document Type	CE		
Draft Project Report						
End Environmental Phase (PA&ED Milestone)						
Begin Design (PS&E) Phase						
End Design Phase (Ready to List for Advertisement Milestone)						
Begin Right of Way Phase						
End Right of Way Phase (Right of Way Certification Milestone)						12/16/20
Begin Construction Phase (Contract Award Milestone)						10/06/21
End Construction Phase (Construction Contract Acceptance Milestone)						01/06/24
Begin Closeout Phase						01/07/24
End Closeout Phase (Closeout Report)						01/07/26

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PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

Date: 12/30/19

District	County	Route	EA	Project ID	PPNO	
08	RIV	91	OF541	0800000137	0077G	
Project Title: Route 91/71 Interchange and Connectors						

Existing Total Project Cost (\$1,000s)									Implementing Agency
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)									Riverside County Transportation
PS&E									Riverside County Transportation
R/W SUP (CT)									Riverside County Transportation
CON SUP (CT)									Riverside County Transportation
R/W									Riverside County Transportation
CON									Riverside County Transportation
TOTAL									
Proposed Total Project Cost (\$1,000s)									Notes
E&P (PA&ED)	15,777							15,777	
PS&E	3,196							3,196	
R/W SUP (CT)									
CON SUP (CT)									
R/W	4,750							4,750	
CON				117,000				117,000	
TOTAL	23,723			117,000				140,723	

Fund No. 1:	RIP - National Hwy System (NH)								Program Code
	Existing Funding (\$1,000s)								20.XX.075.600
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									Riverside County Trans Commissi
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	5,273							5,273	2020 STIP-RIP. RCTC may propose advance construction in FY 21/22. \$5273 PAED voted 09/05/07
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON				66,377				66,377	
TOTAL	5,273			66,377				71,650	

Fund No. 2:	Demo - Demonstration-State TEA21 (DEMOS21)								Program Code
	Existing Funding (\$1,000s)								20.30.010.680
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									Federal Highway Administration (F
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E	3,196							3,196	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	3,196							3,196	

Fund No. 3:	State SB1 LPP - Local Partnership Program - Formula distribution (LPP-F)								Program Code
Existing Funding (\$1,000s)									20.XX.724.000
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	2,000							2,000	\$2000 PAED voted 05/17/18
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	2,000							2,000	

Fund No. 4:	Local Funds - Local Measure (MEA)								Program Code
Existing Funding (\$1,000s)									20.10.400.100
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	1,000							1,000	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W	2,225							2,225	
CON									
TOTAL	3,225							3,225	

Fund No. 5:	DEMO-SAFETEA-LU								Program Code
Existing Funding (\$1,000s)									
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	7,504							7,504	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W	796							796	
CON									
TOTAL	8,300							8,300	

Fund No. 6:		FFY 2006 Appropriations Earmarks							Program Code	
Existing Funding (\$1,000s)										
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W										
CON										
TOTAL										
Proposed Funding (\$1,000s)									Notes	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W	990							990		
CON										
TOTAL	990							990		

Fund No. 7:	SURFACE TRANSPORTATION PROGRAM---HR4818								Program Code
Existing Funding (\$1,000s)									
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W	739							739	
CON				1,000				1,000	
TOTAL	739			1,000				1,739	

Fund No. 8:	TCEP								Program Code
Existing Funding (\$1,000s)									
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON				49,623				49,623	
TOTAL				49,623				49,623	

PPR Form

I-10/Avenue 50 Interchange

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

General Instructions

Amendment (Existing Project) No					Date: 12/13/19	
District	EA	Project ID	PPNO	MPO ID		
08	45210	0800000721	N/A	RIV030901		
County	Route/Corridor	PM Bk	PM Ahd	Nominating Agency		
RIV	10	62.3	63.7	CVAG		
				MPO	Element	
				SCAG	Capital Outlay	
Project Manager/Contact		Phone		E-mail Address		
Jonathan Hoy		760-238-1540		jhoy@coachella.org		
Project Title						
I-10/Avenue 50 New Interchange						
Location (Project Limits), Description (Scope of Work)						
ON I-10 IN EASTERN COACHELLA (AT 3.4 MILES E/O DILLON RD & 9.1 MILES W/O CACTUS CITY SRRA): CONSTRUCT NEW 6 THROUGH LANE AVENUE 50 IC (3 LANES EACH DIR. APPROX 600' N/O I-10 AND 1,100' S/O I-10), EB EXIT RAMP (3 LANES), WB EXIT RAMP (2 LANES), EB & WB ENTRY RAMPS (2 LANES), WB LOOP ENTRY RAMPS (2 LANES) & ADD ACC LN 3,800' WB DIR, WEST OF IC (EA: 45210)						
Component	Implementing Agency					
PA&ED	City of Coachella					
PS&E	City of Coachella					
Right of Way	City of Coachella					
Construction	City of Coachella					
Legislative Districts						
Assembly:	56	Senate:	28	Congressional:	36	
Project Benefits						
An extended acceleration lane would be constructed with the proposed project to minimize congestion from weaving within the merge area of the westbound loop and direct on ramp. Pedestrian, bicycle and neighborhood electric vehicles accommodations are provided with the proposed project (less than 1/2 mile).						
Purpose and Need						
See Page 2.						
Category	Outputs			Unit	Total	
Bridge / Tunnel	New Interchanges			SQFT	806100	
NHS Improvements	Yes	Roadway Class	1	Reversible Lane analysis	No	
Inc. Sustainable Communities Strategy Goals		Yes	Reduces Greenhouse Gas Emissions Yes			
Project Milestone				Existing	Proposed	
Project Study Report Approved				07/01/03		
Begin Environmental (PA&ED) Phase					12/01/13	
Circulate Draft Environmental Document			Document Type	ND/FONSI	01/19/17	
Draft Project Report					01/19/17	
End Environmental Phase (PA&ED Milestone)					10/31/17	
Begin Design (PS&E) Phase					01/01/15	
End Design Phase (Ready to List for Advertisement Milestone)					04/01/20	
Begin Right of Way Phase					01/01/18	
End Right of Way Phase (Right of Way Certification Milestone)					04/01/20	
Begin Construction Phase (Contract Award Milestone)					09/01/23	
End Construction Phase (Construction Contract Acceptance Milestone)					11/01/25	
Begin Closeout Phase					11/01/25	
End Closeout Phase (Closeout Report)					12/01/25	

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PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

Date: 12/13/19

Additional Information

The purpose of the proposed project is to:

Construct a new interchange on I-10 to provide access to approved development, as identified in the La Entrada Specific Plan and the City of Coachella General Plan, and to address anticipated increased traffic demand on the regional transportation system; and

Provide a new regional access point with I-10 for the City of Coachella and eastern Coachella Valley as identified in the City of Coachella's General Plan.

The project addresses the following needs, transportation deficiencies and problems:

The City's Land Use Plan Element of the General Plan identifies ongoing and planned development in the eastern part of Coachella that is expected to increase the local population and local/regional traffic demands; The Circulation Plan Element identifies Avenue 50 as a major arterial east-west corridor with access to I-10 to serve local and regional traffic needs; and

Adjacent interchanges at I-10/Dillon Road and SR-86/Dillon Road are forecast to operate at an unacceptable Level of Service (LOS) by forecast year 2040 based on growth and traffic projections.

Please note, the Category Output Miles is calculated in lane-miles.

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PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

Date: 12/13/19

District	County	Route	EA	Project ID	PPNO	
08	RIV	10	45210	0800000721	N/A	
Project Title: I-10/Avenue 50 New Interchange						

Existing Total Project Cost (\$1,000s)									Implementing Agency
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)									City of Coachella
PS&E									City of Coachella
R/W SUP (CT)									City of Coachella
CON SUP (CT)									City of Coachella
R/W									City of Coachella
CON									City of Coachella
TOTAL									
Proposed Total Project Cost (\$1,000s)									Notes
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)	3,000							3,000	
PS&E	3,000							3,000	
R/W SUP (CT)	500							500	
CON SUP (CT)	500							500	
R/W	3,000							3,000	
CON					62,000			62,000	
TOTAL	10,000				62,000			72,000	

Fund No. 1:	Local Funds								Program Code
Existing Funding (\$1,000s)									Funding Agency City of Coachella
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	3,000							3,000	City will also seek future competitive funding.
PS&E	3,000							3,000	
R/W SUP (CT)	500							500	
CON SUP (CT)	500							500	
R/W	3,000							3,000	
CON					60,000			60,000	
TOTAL	10,000				60,000			70,000	

Fund No. 2:	STIP	Existing Funding (\$1,000s)							Program Code
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									CVAG
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON					2,000			2,000	
TOTAL					2,000			2,000	

PPR Form

CVAG Regional Signal Synchronization, Ph 2

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

General Instructions

Amendment (Existing Project) Y/N					Date:	12/13/19
District	EA	Project ID		PPNO	MPO ID	
08					RIV140820A	
County	Route/Corridor	PM Bk	PM Ahd	Nominating Agency		
RIV	Various			Coachella Valley Association of Governments		
				MPO	Element	
				SCAG	Local Assistance	
Project Manager/Contact		Phone		E-mail Address		
Eric Cowle		760-346-1127		ecowle@cvag.org		
Project Title						
CVAG Regional Signal Sync Phase II						
Location (Project Limits), Description (Scope of Work)						
IN EASTERN RIVERSIDE COUNTY FOR CVAG: REGIONAL SIGNAL SYNC PH II ON 18 CORRIDORS (MONTEREY, COOK, PALM DR, BOB HOPE, FRED WARING, DINAH SHORE, GENE AUTRY, DATE PALM, INDIO BLVD, JEFFERSON, PALM CANYON, VISTA CHINO, COUNTRY CLUB, MONROE, AVE 48, SUNRISE, INDIAN CYN, JACKSON) TO INCLUDE SIGNAL UPGRADES, COMMUNICATION SYSTEMS, HARDWARE AND SOFTWARE.						
Component		Implementing Agency				
PA&ED		CVAG				
PS&E		CVAG				
Right of Way		CVAG				
Construction		CVAG				
Legislative Districts						
Assembly:	80	Senate:	37	Congressional:	44	
Project Benefits						
Per Air Quality Report - Phase II will provide reductions in: reactive organic gases of 5.488 kg per day; CO 294.392 kg per day; Nox 44.257 kg per day; PM20 .0125 kg per day; PM2.5 .109 kg per day.						
Purpose and Need						
18 corridors include approx. 244 signalized intersections and 93 miles of arterial roadway. The need to improve the region's air quality as well as improve traffic flow was a driving force behind CVAG launching the regional signal synchronization program in 2013. The consensus has been that synchronization must be done regionally – not city by city, nor even one major roadway at a time – in order to have the greatest benefits. This view has been reinforced by the (See page 2 for more)						
Category		Outputs			Unit	Total
TMS (Traffic Management Systems)		Traffic signal interconnect projects			EA	244
NHS Improvements	No	Roadway Class	3	Reversible Lane analysis	No	
Inc. Sustainable Communities Strategy Goals			Yes	Reduces Greenhouse Gas Emissions Yes		
Project Milestone					Existing	Proposed
Project Study Report Approved						
Begin Environmental (PA&ED) Phase						
Circulate Draft Environmental Document					Document Type	
Draft Project Report						
End Environmental Phase (PA&ED Milestone)						10/01/18
Begin Design (PS&E) Phase						01/01/19
End Design Phase (Ready to List for Advertisement Milestone)						01/01/20
Begin Right of Way Phase						na
End Right of Way Phase (Right of Way Certification Milestone)						na
Begin Construction Phase (Contract Award Milestone)						07/01/21
End Construction Phase (Construction Contract Acceptance Milestone)						07/07/24
Begin Closeout Phase						07/07/25
End Closeout Phase (Closeout Report)						07/07/26

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PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

Date: 12/13/19

District	County	Route	EA	Project ID	PPNO	
08	RIV	Various				
Project Title: CVAG Regional Signal Sync Phase II						

Existing Total Project Cost (\$1,000s)									Implementing Agency
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	
E&P (PA&ED)	5,167							5,167	CVAG
PS&E									CVAG
R/W SUP (CT)									CVAG
CON SUP (CT)									CVAG
R/W									CVAG
CON									CVAG
TOTAL	5,167							5,167	
Proposed Total Project Cost (\$1,000s)									Notes
E&P (PA&ED)	5,167							5,167	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON					49,433			49,433	
TOTAL	5,167				49,433			54,600	

Fund No. 1:	Local	Existing Funding (\$1,000s)							Program Code
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									Coachella Valley Association of Go
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON					28,528			28,528	
TOTAL					28,528			28,528	

Fund No. 2:	CMAQ	Existing Funding (\$1,000s)							Program Code
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)	567							567	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	567							567	
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	567							567	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON					18,433			18,433	
TOTAL	567				18,433			19,000	

Fund No. 3:	Measure A								Program Code
Existing Funding (\$1,000s)									
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)	4,600							4,600	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	4,600							4,600	
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	4,600							4,600	
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL	4,600							4,600	

Fund No. 4:	STIP RIP								Program Code
Existing Funding (\$1,000s)									
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON					2,472			2,472	
TOTAL					2,472			2,472	

Fund No. 5:									Program Code	
		Existing Funding (\$1,000s)								
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W										
CON										
TOTAL										
		Proposed Funding (\$1,000s)							Notes	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W										
CON										
TOTAL										

PPR Form

Planning, Programming & Monitoring

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised 13 Aug 2019 v8.01g)

General Instructions

Amendment (Existing Project) Y/N					Date: 12/13/19	
District	EA	Project ID	PPNO	MPO ID		
08		0813000157	9803			
County	Route/Corridor	PM Bk	PM Ahd	Nominating Agency		
RIV				Riverside County Transportation Commission		
				MPO	Element	
Project Manager/Contact		Phone		E-mail Address		
Martha Masters		951-787-7141		mmasters@rctc.org		
Project Title						
Planning, Programming, and Monitoring						
Location (Project Limits), Description (Scope of Work)						
Planning, Programming, and Monitoring						
Component						
PA&ED		Riverside County Transportation Commission				
PS&E						
Right of Way						
Construction		Riverside County Transportation Commission				
Legislative Districts						
Assembly:	64, 65, 66, 80	Senate:	31, 36, 37	Congressional:	41, 44, 45, 49	
Project Benefits						
Purpose and Need						
Category		Outputs			Unit	Total
NHS Improvements	Y/N	Roadway Class		Reversible Lane analysis	Y/N	
Inc. Sustainable Communities Strategy Goals		Y/N	Reduces Greenhouse Gas Emissions		Y/N	
Project Milestone					Existing	Proposed
Project Study Report Approved						
Begin Environmental (PA&ED) Phase						
Circulate Draft Environmental Document				Document Type		
Draft Project Report						
End Environmental Phase (PA&ED Milestone)						
Begin Design (PS&E) Phase						
End Design Phase (Ready to List for Advertisement Milestone)						
Begin Right of Way Phase						
End Right of Way Phase (Right of Way Certification Milestone)						
Begin Construction Phase (Contract Award Milestone)						
End Construction Phase (Construction Contract Acceptance Milestone)						
Begin Closeout Phase						
End Closeout Phase (Closeout Report)						

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Fund No. 2:	RIP - State Cash (ST-CASH)								Program Code
Existing Funding (\$1,000s)									2.30.600.670
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									RCTC \$25 CON voted 09/28/00
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON	25							25	
TOTAL	25							25	
Proposed Funding (\$1,000s)									
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 3:									Program Code	
		Existing Funding (\$1,000s)								
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W										
CON										
TOTAL										
		Proposed Funding (\$1,000s)							Notes	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W										
CON										
TOTAL										

Section 16. Project Evaluations/Benefit Cost Analysis

- 71/91 Interchange
- I-10/Ave 50 Interchange
- CVAG Regional Signal Synchronization

71/91 Interchange

Inland Empire Congestion Relief and Access Enhancement:
SR-71/91 Interchange Improvement Project
FY2018 BUILD GRANT APPLICATION

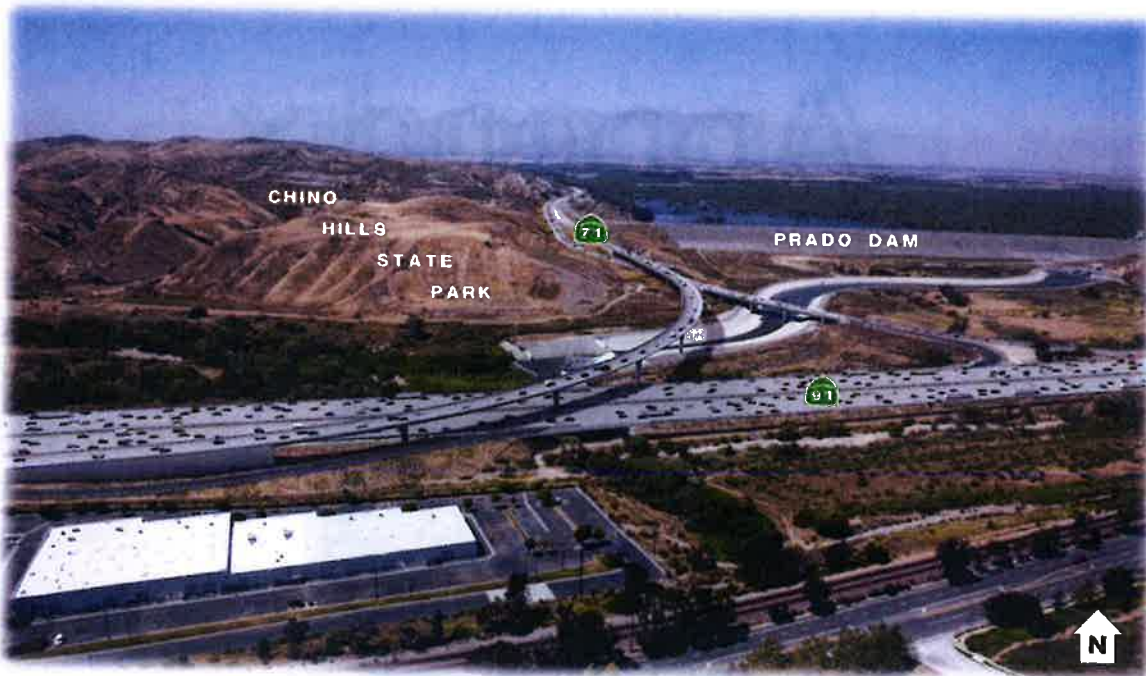
Appendix



**BENEFIT-COST ANALYSIS
SUPPORTING DOCUMENTS**

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

Inland Empire Congestion Relief and Access Enhancement: SR-71/91 Interchange Improvement Project **Benefit-Cost Analysis Supplementary Documentation**



FY 2018 Better Utilizing Investments to Leverage Development (BUILD) Grant Application



July 19, 2018

Executive Summary

A benefit-cost analysis (BCA) was conducted for the *Inland Empire Congestion Relief and Access Enhancement: SR-71/91 Interchange Improvement Project* (the Project) for submission to the U.S. Department of Transportation (USDOT) as a requirement of a discretionary grant application for the BUILD 2018 program. The analysis was conducted in accordance with the benefit-cost methodology as outlined by USDOT in the 2018 BUILD/INFRA Benefit-Cost Analysis Guidance. The period of analysis corresponds to 35 years and includes 5 years of design and construction and 30 years of benefits after operations begin in 2023.

The project, located in northwestern Riverside County in the city of Corona, will improve the antiquated State Route (SR)-71/91 interchange that causes costly freight delays, unnecessary traffic congestion, and safety conflicts. SR-91 is a critical commuter and freight gateway at the confluence of Riverside, San Bernardino, and Orange counties.

RCTC has invested over a billion dollars to alleviate congestion along this corridor through installation of additional capacity and managed lanes to promote economic competitiveness, safety, and enhanced quality of life. While the [SR-91 Corridor Improvement Project](#) has reduced congestion by increasing managed and general-purpose lane capacity since opening in 2017, eastbound SR-91 west of SR-71 continues to experience congestion, primarily due to the weaving and slowing of vehicles entering SR-71 from SR-91. The existing connector ramp from eastbound SR-91 to northbound SR-71 forces drivers to quickly adjust to a drastic reduction in speed limits from the SR-91 mainline to SR-71, from 65 to 25 miles per hour (MPH). This causes severe bottlenecks at the Project location and contributes to burdensome congestion along the SR-91 mainline.

This Project will improve operational inefficiencies by:

- Replacing the existing single-lane loop connection between eastbound SR-91 and northbound SR-71 with a new two-lane, direct connector ramp;
- Constructing a new, separate eastbound collector-distributor auxiliary lane just south of and parallel to SR-91 to provide improved access between the eastbound SR-91/Green River Road and SR-71/91 interchanges, replacing the existing geometric choke point and minimizing weaving conflicts to improve speeds from 25 to 65 MPH; and
- Realigning the eastbound SR-91 entrance ramp from Green River Road to enter eastbound SR-91 downstream of the connector off-ramp to SR-71 and improve access to the SR-71/91 interchange.

Costs

The capital cost for the Project is expected to be \$134.2 million in undiscounted 2017 dollars through 2022. At a 7 percent real discount rate, these costs are \$110.4 million. Table ES-1 shows how these costs are allocated across time and major expense category.

Table ES-1: Project Costs by Category and Year, in Undiscounted Millions of 2017 Dollars

Cost Category	2017	2018	2019	2020	2021	2022	Total
Planning and Design	\$7.3	\$1.0	\$3.0	\$0.0	\$0.0	\$0.0	\$11.3
Right of Way	\$1.4	\$1.7	\$2.8	\$0.0	\$0.0	\$0.0	\$5.9
Construction	\$0.0	\$0.0	\$0.0	\$46.8	\$35.1	\$35.1	\$117.0
Total	\$8.7	\$2.7	\$5.8	\$46.8	\$35.1	\$35.1	\$134.2

SOURCE: RCTC

In addition to the upfront capital costs, the Project's pavement is expected to require maintenance/rehabilitation after 20 years of operation, at a cost of \$176,217, or \$32,468 when discounted at a 7 percent rate.¹ However, these costs are less than the costs of maintenance for the current asphalt infrastructure, which are forecast to be \$796,733 in 2037 (20 years after its rehabilitation as part of the SR 91 Corridor Improvement Project), equivalent to \$220,303 in discounted dollars. The discounted cost savings of \$187,835 are considered as a benefit in calculating the benefit cost ratio.

Benefits

In 2017 dollars, the Project is expected to generate \$208.8 million in discounted benefits using a 7 percent discount rate. These benefits are produced primarily via travel time savings, crash reduction, fuel savings, emissions reduction, and operations and maintenance (O&M) cost savings. This leads to an overall project Net Present Value of \$98.4 million and a Benefit Cost Ratio (BCR) of 1.89.² The overall project benefit matrix can be seen in Table ES-2.

Table ES-2: Project Impacts and Benefits Summary, Monetary Values in Millions of 2017 Dollars

Current Status/ Baseline & Problem to be Addressed	Change to Baseline	Type of Impact	Population Affected by Impact	Economic Benefit	Summary of Results (7% Disc.)	Page Ref.
The existing connector ramp requires drivers to quickly reduce speed to 25 MPH, causing bottlenecks	Replacing the existing single-lane loop connection with new two-lane, direct connector ramp; constructing new auxiliary lane that will minimize weaving conflicts; and realigning entrance ramp from Green River Road	Enable traffic to remain consistent at 65 MPH pace	Existing and future users of SR-91 and SR-71	Travel Time Savings	\$178.9 Million	9
				Fuel Savings	\$6.4 Million	9
			Wider study region	Emissions Savings	\$4.1 Million	11
Higher than average crash rates on study area roadways due to the tight turn radius of the loop connector, the short merge/weave sections on Green River Road ramp, and resulting congestion on eastbound SR-91	Replacing the existing single-lane loop connection with new two-lane, direct connector ramp; constructing new auxiliary lane that will minimize weaving conflicts; and realigning entrance ramp from Green River Road	Improve safety by reducing crashes	Existing and future users of SR-91 and SR-71	Crash Cost Savings	\$19.2 Million	7
Current interchange constructed of asphalt, a less-durable material with higher maintenance costs	New interchange will be made of concrete, resulting in lower lifecycle costs	Reduce O&M costs	RCTC + Caltrans	O&M Cost Savings	\$0.2 Million	8

SOURCE: WSP, 2018

The overall Project impacts can be seen in Table ES-3, which shows the magnitude of change and direction of the various impact categories.

¹ Attachment K: Pavement Lifecycle Cost Analysis Results, State Route 91/71 Interchange Improvement Project Report, June 2011. The lifecycle cost analysis was conducted in 2010 and is assumed to use 2010 dollars; these have been inflated to 2017 dollars using US DOT's recommended value of 1.1205.

² Per USDOT guidance, operations and maintenance costs are included in the numerator along with other project benefits when calculating the benefit-cost ratio.

Table ES-3: Project Impacts for SR-71/91 Interchange Improvement Project, Cumulative 2023-2052

Category	Unit	Quantity	Direction
Vehicle-Hours Traveled	millions of VHT	37.9	▼
Fuel Consumed	millions of gallons	3.7	▼
Traffic Crashes	#	350	▼
CO2 Emissions	tons	34,481	▼
NOX Emissions	tons	1,115	▼
PM10	tons	0.91	▼
SOX	tons	0.24	▲
VOC	tons	55	▼

SOURCE: WSP, 2018

In addition to the monetized benefits presented in Table ES-2, the Project would create the following qualitative benefits:

SAFETY

The Project will reduce the number of accidents that take place on the corridor, which are currently higher in the Project area than the statewide average for highway connectors due to speed reductions generated by the tight radius of the existing interchange configuration and dangerous weaving.

STATE OF GOOD REPAIR

The Project will improve the condition of the SR-71/91 interchange with materials that reduce impacts on overall life-cycle costs.

ECONOMIC COMPETITIVENESS

The Project will reduce congestion along SR-91 and SR-71, both of which carry heavy levels of commuter and freight traffic. Improving the flow of traffic provides travel time and fuel cost savings. Providing these congestion improvements could lead to businesses remaining in the area, expanding their operations, and new businesses moving in as part of private industrial development in the region, which is growing at one of the highest rates in the nation.

ENVIRONMENTAL PROTECTION

The Project will benefit the environment through its highway planting, storm water management, erosion control, and resource conservation features. By allowing vehicles to travel at faster, more efficient speeds, the Project will also reduce congestion-related air emissions.

QUALITY OF LIFE

The Project will improve access to the regional transit system, the recreational trail network, essential services, healthcare, and jobs.

While these benefits are not all readily quantifiable, they do provide real advantages and improvements that will be experienced by individuals and businesses in the region. These benefits are described in more detail in the main body of this BCA and in the Project Narrative.

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1 Introduction

A benefit-cost analysis (BCA) was conducted for the *Inland Empire Congestion Relief and Access Enhancement: SR-71/91 Interchange Improvement Project* (the Project) for submission to the U.S. Department of Transportation (USDOT) as a requirement of a discretionary grant application for the BUILD 2018 program. The following section describes the BCA framework, evaluation metrics, and report contents.

1.1 BCA Framework

A BCA is an evaluation framework to assess the economic advantages (benefits) and disadvantages (costs) of an investment alternative. Benefits and costs are broadly defined and are quantified in monetary terms to the extent possible. The overall goal of a BCA is to assess whether the expected benefits of a project justify the costs from a national perspective. A BCA framework attempts to capture the net welfare change created by a project, including cost savings and increases in welfare (benefits), as well as disbenefits where costs can be identified (e.g., project capital costs), and welfare reductions where some groups are expected to be made worse off as a result of the proposed project.

The BCA framework involves defining a Base Case or “No Build” Case, which is compared to the “Build” Case, where the grant request is awarded and the project is built as proposed. The BCA assesses the incremental difference between the Base Case and the Build Case, which represents the net change in welfare. BCAs are forward-looking exercises which seek to assess the incremental change in welfare over a project life-cycle. The importance of future welfare changes is determined through discounting, which is meant to reflect both the opportunity cost of capital as well as the societal preference for the present.

The analysis was conducted in accordance with the benefit-cost methodology as recommended by USDOT in the 2018 Benefit-Cost Analysis Guidance for Discretionary Grant Programs.³ This methodology includes the following analytical assumptions:

- Assessing benefits with respect to five of the merit criteria defined by USDOT;
- Defining existing and future conditions under a No Build base case as well as under the Build Case;
- Estimating benefits and costs during project construction and operation, including 30 years of operations beyond the Project completion when benefits accrue;
- Using USDOT recommended monetized values for reduced fatalities, injuries, property damage, travel time savings, and emissions, while relying on best practices for monetization of other benefits;
- Presenting dollar values in real 2017 dollars. In instances where cost estimates and benefits valuations are expressed in historical dollar years, using an appropriate Consumer Price Index (CPI) to adjust the values; and
- Discounting future benefits and costs with real discount rates of 7 percent and 3 percent (sensitivity analysis) consistent with USDOT guidance.

³ U.S. Department of Transportation. Benefit-Cost Analysis Guidance for Discretionary Grant Programs. June 2018.

1.2 Report Contents

Section 2 of this Appendix contains a description of the SR-71/91 Interchange Improvement Project elements, information on the general assumptions made in the analysis, and a description of the base case compared to the build case. It also summarizes the Project costs and benefits at a high level.

Section 3 provides a summary of the anticipated project costs. Section 4 reviews the expected economic benefits the Project would generate, including a review of the assumptions and methodology used to calculate the benefits. Finally, Section 5 reports the high-level results of the benefit-cost analysis.

2 Project Overview

2.1 Description

The project, located in northwestern Riverside County in the city of Corona, will improve the antiquated State Route (SR)-71/91 interchange that causes costly freight delays, unnecessary traffic congestion, and safety conflicts. SR-91 is a critical commuter and freight gateway at the confluence of Riverside, San Bernardino, and Orange counties.

RCTC has invested over a billion dollars to alleviate congestion along this corridor through installation of additional capacity and managed lanes to promote economic competitiveness, safety, and enhanced quality of life. While the [SR-91 Corridor Improvement Project](#) has reduced congestion by increasing managed and general-purpose lane capacity since opening in 2017, eastbound SR-91 west of SR-71 continues to experience congestion, primarily due to the weaving and slowing of vehicles entering SR-71 from SR-91. The alignment of the existing connector ramp from eastbound SR-91 to northbound SR-71 forces drivers to quickly adjust to a drastic reduction in speed limits from the SR-91 mainline to SR-71, from 65 to 25 miles per hour (MPH). This causes severe bottlenecks at the Project location and contributes to burdensome congestion along the SR-91 mainline.

This Project will improve operational inefficiencies by:

- Replacing the existing single-lane loop connection between eastbound SR-91 and northbound SR-71 with a new two-lane, direct connector ramp;
- Constructing a new, separate eastbound collector-distributor auxiliary lane just south of and parallel to SR-91 to provide improved access between the eastbound SR-91/Green River Road and SR-71/91 interchanges, replacing the existing geometric choke point and minimizing weaving conflicts to improve speeds from 25 to 65 MPH; and
- Realigning the eastbound SR-91 entrance ramp from Green River Road to improve access to the SR-71/91 interchange.

RCTC is prepared to begin construction on the \$134 million project in December 2019 with construction completion projected for December 2022, and invites the federal government to partner in the region's effort to fully realize the immense benefits of the recently completed SR-91 improvements and reduce the severe congestion occurring at SR-71 and SR-91 during peak hours.

2.2 General Assumptions

The evaluation period for this project includes a 5-year design and construction period, from 2018-2022, during which capital expenditures are undertaken, plus 30 years of operations beyond Project completion within which to accrue benefits, through 2052.

Dollar figures in this analysis are expressed in constant 2017 dollars (2017\$). For instances in which certain cost estimates or benefit valuations were expressed in dollar values in historical years, the inflation adjustment values included in USDOT's 2018 BCA Guidance was used, based on the Bureau of Economic Analysis' National Income and Product Accounts.⁴

⁴ U.S. Department of Transportation. Benefit-Cost Analysis Guidance for Discretionary Grant Applications. June 2018. Citing Bureau of Economic Analysis, National Income and Product Accounts, Table 1.1.9, "Implicit Price Deflators for Gross Domestic Product" (March 2016).

The real discount rate used for this analysis was 7.0 percent, consistent with USDOT guidance for 2018 BUILD grants and OMB Circular A-94.⁵

2.3 Base Case and Build Case

For the purposes of this BCA, the base case assumes that none of the contemplated infrastructure projects would be completed, and that the existing conditions at the SR-71/91 interchange would remain in their current form.

The proposed project represents the build case.

⁵ White House Office of Management and Budget, Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs (October 29, 1992). (http://www.whitehouse.gov/omb/circulars_a094).

3 Project Costs

Capital costs for the project include right-of-way acquisition and utility relocation costs totalling \$5.9 million in undiscounted 2017 dollars, including funds already expended in this and prior fiscal years on pre-construction activities. Professional services/design costs, some of which have also already been incurred, are expected to equal \$11.3 million in undiscounted 2017 dollars. Construction, which will start in December 2019 and last through December 2022, is anticipated to cost \$117 million in undiscounted 2017 dollars. Together, these capital costs equate to \$134.2 in undiscounted 2017 dollars, or \$110.4 when discounted at 7 percent.

Table 1 presents cost information by type of expense and year of expenditure.

Table 1: Project Costs by Category and Year, in Undiscounted Millions of 2017 Dollars

Cost Category	2017	2018	2019	2020	2021	2022	Total
Planning and Design	\$7.3	\$1.0	\$3.0	\$0.0	\$0.0	\$0.0	\$11.3
Right of Way	\$1.4	\$1.7	\$2.8	\$0.0	\$0.0	\$0.0	\$5.9
Construction	\$0.0	\$0.0	\$0.0	\$46.8	\$35.1	\$35.1	\$117.0
Total	\$8.7	\$2.7	\$5.8	\$46.8	\$35.1	\$35.1	\$134.2

SOURCE: RCTC

In addition to the upfront capital costs, the Project's pavement is expected to require maintenance/rehabilitation after 20 years of operation. A lifecycle cost analysis conducted in 2010 compared the costs of using jointed plain concrete pavement or alternative pavement types, including dense graded hot mix asphalt with open graded friction course. The analysis found that the concrete option would have the lowest lifecycle costs, and it was selected as the preferred alternative for this reason. The maintenance and rehabilitation costs for the concrete option are expected to be \$176,217 in 2017 dollars (inflated from 2010 values using USDOT recommended inflation rates).⁶ The rehabilitation would take place in 2042, after 20 years of operations, resulting in a present value cost of \$32,468 when discounted at a 7 percent rate.

However, these costs are less than the costs of maintenance for the current asphalt infrastructure, which are forecast to be \$796,733 in 2037 (20 years after its rehabilitation as part of the SR-91 Corridor Improvement Project), equivalent to \$220,303 in discounted dollars.⁷

The discounted cost savings of \$187,835 are considered as a benefit in calculating the benefit-cost ratio.

⁶ Attachment K: Pavement Lifecycle Cost Analysis Results, State Route 91/71 Interchange Improvement Project Report, June 2011.

⁷ The current pavement is assumed to have the same maintenance and rehabilitation costs as the dense graded hot mix asphalt alternative considered in the lifecycle cost analysis: Attachment K: Pavement Lifecycle Cost Analysis Results, State Route 91/71 Interchange Improvement Project Report, June 2011.

4 Project Benefits

The Project generates benefits primarily by:

- Enabling faster travel speeds and reduced congestion. This has the effect of improving travel time for Project users, and also reducing fuel consumption and pollution emissions due to greater efficiencies of driving at constant, faster speeds, compared to accelerating and decelerating and driving at slower speeds.
- Replacing current interchange configuration with a safer configuration that will reduce the number of traffic collisions experienced by roadway users.
- Building the new interchange out of concrete, a more durable material than the existing asphalt construction, thereby reducing the lifecycle operations and maintenance costs of the interchange.

These benefits are monetized and quantified in the sub-sections that follow, and the assumptions used to calculate the monetary values of the benefits are also described. Non-quantifiable benefits are also described qualitatively.

The first portion of this section discusses the assumptions around travel demand under both the base case and the build alternative. The section then reviews the project's quantitative and qualitative benefits, and the assumptions behind them, organized around five of the merit criteria defined by the USDOT: Safety, State of Good Repair, Economic Competitiveness, Environmental Protection, and Quality of Life.

4.1 Demand Projections

This analysis relies on demand projections completed as part of the "Traffic Study for SR-71/91 Interchange Improvement Project" report published in 2010. The traffic study relied on 2007 data and created traffic estimates for the baseline and build alternatives on key project area segments for Year 1 (2015) and Year 20 (2035).

Due to a delay in project realization, these traffic estimates have been adjusted for purposes of this BCA. The Year 1 values have been escalated based on population growth projections from the Southern California Association of Governments (SCAG) to create traffic estimates for each year between project opening and the end of the analysis period. The Year 20 forecasts have not been used due to changes in other planned projects in the study area (such as the decision not to build "Corridor A," a proposed four-lane toll facility that would have run parallel to SR-91) that shed doubt on the continued validity of those forecasts. Despite the passing of time since the traffic study, RCTC remains confident in the Year 1 results that have been used as a basis for forecasting.

Table 2 contains the compound annual growth rates for Riverside County's population that were used to forecast traffic growth. Care was also taken to ensure that forecast demand would not exceed roadway capacity by capping peak hour vehicle capacity at the values shown in Table 3, and adjusting average daily traffic correspondingly. Table 3 also contains the projections of traffic on key roadway segments in 2015 (based on the traffic study), and at the end of the analysis period in 2052 (calculated based on growth and capacity assumptions). Increased use of the Project facilities under the build alternative leads to greater vehicle miles traveled (VMT) on these facilities, though total changes in VMT across the region have not been studied.

Table 2: Demand Projection Assumptions and Sources

Variable	Value	Source
Riverside County Population Compound Annual Growth Rate 2012 – 2020	1.25%	Calculated based on: SCAG, 2016-2040 RTP/ SCS Final Growth Forecast by Jurisdiction
Riverside County Population Compound Annual Growth Rate 2020 – 2035	1.40%	
Riverside County Population Compound Annual Growth Rate 2035 – 2040	0.83%	
Riverside County Population Compound Annual Growth Rate 2040 onward	0.83%	Continuing growth trends assumed

Table 3: No Build and Build Demand Projections

Roadway Segment	Average Daily Traffic in 2015 ^a		Average Daily Traffic in 2052		Peak Hour Vehicle Capacity	
	Baseline	Build	Baseline	Build	Baseline	Build
Eastbound SR-91 On-Ramp from Green River Road	4,000	0	6,033	0	1,800	0
Eastbound SR-91 On-Ramp/ Northbound SR-71 On-Ramp from Green River Road	0	4,738	0	7,146	0	1,800
Eastbound SR-91 Off-Ramp to Northbound SR-71	20,900	21,786	24,421	26,686	1,500	1,800
Westbound SR-91 Off-Ramp to Northbound SR-71 On-Ramp	31,000	34,444	45,139	47,287	2,500	2,500

4.2 Safety

The safety benefits assessed in this analysis include a reduction in traffic crashes experienced by users of the Project facilities. The new configuration is expected to reduce crashes on key project segments from approximately 144 injury/fatality-producing crashes annually under the baseline alternative to 133 annually under the build alternative. Table 4 shows the monetized value of these safety benefits in the Project's opening year and throughout the 30-year analysis period, in undiscounted and discounted terms.

Table 4: Safety Estimation of Benefits, Millions of 2017 Dollars

Benefit	Project Opening Year		Project Lifecycle	
	Undiscounted	Discounted (7%)	Undiscounted	Discounted (7%)
Reduction in Crashes: Injury Severity Unknown	\$2.03	\$1.45	\$60.90	\$19.22

SOURCE: WSP, 2018

The reduction in crashes is based on the current crash levels and types and the expert opinion of RCTC's Project Manager. The assumptions used in the estimation of safety benefits are presented Table 5.

Table 5: Safety Benefits Assumptions and Sources

Variable	Unit	Value	Source
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^a Parsons, for Riverside County Transportation Commission (RCTC) and Caltrans, "Traffic Study for SR-71/SR-91 Interchange Improvement Project," Caltrans EA # 08-0F5410, March 2010.

Cost of Crash: Injury Severity Unknown	2017\$	\$174,000	US DOT, BCA Guidance 2018
Collisions on Project Segments	Number of Collisions by Type over 3-year period	433	Caltrans, Traffic Accident Surveillance and Analysis Systems (TASAS), 01/01/2013-12/31/2015
Predicted Change in Collisions on Project Segments, after Build	Number of Collisions by Type over 3-year period	398	RCTC

4.3 State of Good Repair

This Project improves the state of good repair by building new facilities out of concrete, and removing older, asphalt based materials. These benefits are represented by savings in operations and maintenance (O&M) costs. The O&M cost savings primarily accrue to the California Department of Transportation (Caltrans), and these savings will allow Caltrans and RCTC to devote resources to other projects benefitting the Riverside region.

As described in the Project Costs section, a lifecycle cost analysis conducted in 2010 provided estimates of maintenance and rehabilitation costs for different pavement types, including the concrete alternative that was selected, and an asphalt alternative similar to the pavement currently in use. Based on this analysis, the maintenance and rehabilitation costs for the concrete option are expected to be \$176,217 in 2017 dollars (inflated from 2010 values using USDOT recommended inflation rates).⁹ The rehabilitation would take place in 2042, after 20 years of operations, resulting in a present value cost of \$32,468 when discounted at a 7 percent rate. The costs of maintenance for the current asphalt infrastructure are forecast to be \$796,733 in 2037 (20 years after its rehabilitation as part of the SR 91 Corridor Improvement Project), equivalent to \$220,303 in discounted dollars.¹⁰

The higher cost of maintenance and rehabilitation for the current asphalt facility represent an O&M costs savings of \$620,516 in undiscounted dollars, or \$187,835 when discounted at a 7 percent rate.

Total O&M cost savings benefits over the 30-year analysis period are shown in Table 6 in discounted and undiscounted terms.

Table 6: State of Good Repair Estimation of Benefits, Millions of 2017 Dollars

Benefit	Project Opening Year		Project Lifecycle	
	Undiscounted	Discounted (7%)	Undiscounted	Discounted (7%)
O&M Cost Savings	\$0.00	\$0.00	\$0.62	\$0.19

SOURCE: WSP, 2018

4.4 Economic Competitiveness

This Project would contribute to increasing the economic competitiveness of the Nation through improvements in the mobility of people and goods in southern California. Two types of societal benefits are measured in the assessment of economic competitiveness for this project: travel time savings and fuel savings.

⁹ Attachment K: Pavement Lifecycle Cost Analysis Results, State Route 91/71 Interchange Improvement Project Report, June 2011.

¹⁰ The current pavement is assumed to have the same maintenance and rehabilitation costs as the dense graded hot mix asphalt alternative considered in the lifecycle cost analysis: Attachment K: Pavement Lifecycle Cost Analysis Results, State Route 91/71 Interchange Improvement Project Report, June 2011.

As described in the project narrative, the current conditions at the SR-71/91 interchange cause significant congestion. The Project would allow travel speeds on the interchange to increase from 25 MPH on average under current conditions to 65 MPH. This would reduce the amount of time spent travelling by existing truck and auto users, and also require them to expend less fuel due to greater fuel efficiencies driving at 65 MPH compared to 25 MPH. The faster speeds and reduced congestion would also attract new users to the facility, who would likewise benefit from the enhanced speeds. The monetized value of these time and fuel savings are shown in Table 7. In addition to the monetized benefits, total time savings for Project users equate to nearly 38 million hours saved over the 30-year analysis period. Over this same period, users are expected to consume 3.7 million fewer gallons of fuel.

Table 7: Economic Competitiveness Estimation of Benefits, Millions of 2017 Dollars

Benefit	Project Opening Year		Project Lifecycle	
	Undiscounted	Discounted (7%)	Undiscounted	Discounted (7%)
Travel Time Savings	\$17.07	\$12.17	\$584.88	\$178.93
Fuel Cost Savings	\$0.75	\$0.54	\$20.68	\$6.36

SOURCE: WSP, 2018

4.4.1 Travel Time Savings

Travel time savings includes in-vehicle travel time savings for auto drivers and passengers as well as truck drivers. Travel time is considered a cost to users, and its value depends on the disutility that travelers attribute to time spent traveling. A reduction in travel time translates into more time available for work, leisure, or other activities. The assumptions used in the estimation of travel time savings are presented in Table 8.

Table 8: Travel Time Savings Assumptions and Sources

Variable	Unit	Value	Source
Value of Time: Auto Users	2017\$ per hour	\$14.80	US DOT, BCA Guidance 2018
Value of Time: Truck Users	2017\$ per hour	\$28.60	US DOT, BCA Guidance 2018
Average Vehicle Occupancy: Auto Users	Passengers per Vehicle	1.39	US DOT, BCA Guidance 2018
Average Vehicle Occupancy: Truck Users	Passengers per Vehicle	1.00	US DOT, BCA Guidance 2018
Autos as Share of Project Users	Percentage	93.76%	Caltrans, Average Annual Daily Truck Traffic on the California Highway System, 2006-2016
Trucks as Share of Project Users	Percentage	6.24%	Caltrans, Average Annual Daily Truck Traffic on the California Highway System, 2006-2016
Baseline Ramp Travel Speed	Miles per Hour	25	RCTC
Build Ramp Travel Speed	Miles per Hour	65	RCTC
Ramp Length (Baseline and Build)	Miles	1.33	RCTC

Travel time savings were calculated by dividing the ramp length by the travel speed under each alternative in order to compute the difference in average time spent on the interchange under the baseline and build alternatives. This results in average time savings of 0.033 hours per trip. Then travel time savings for existing users was calculated by multiplying the change in travel time by the number of baseline trips, and apportioning this number to trucks and auto users using their average share of traffic in the study area and average vehicle occupancy rates. Time savings for new users used a similar approach, but applied to the number of users in the build scenario

greater than under the baseline alternative. Total hours of time savings by user category are shown in Table 9. These benefits were then monetized by multiplying the hours of benefits by the value of time for auto and truck users; new users are considered to derive half the value of existing users, per USDOT guidelines.

Table 9: Hours of Travel Time Savings by User Category Over 30-Year Analysis Period

User Type	Auto	Truck
Existing	33,013,379	1,581,172
New	3,157,912	151,248

SOURCE: WSP, 2018

4.4.2 Fuel Cost Savings

By enabling vehicles to maintain speeds of 65 miles per hour, instead of quickly decelerating to 25 MPH and accelerating back to 65 MPH, the Project will result in fuel savings costs for drivers. Vehicles expend less fuel when operating at 65 MPH than at 25 MPH, and while traveling at constant speeds rather than accelerating and decelerating.

Fuel efficiency rates for the baseline and build alternatives are calculated based on overall fuel efficiency projections, adjusted based on factors that account for average vehicle speed. Total VMT along the Project facilities are divided by these adjusted fuel efficiency factors to derive total annual fuel consumption. Annual fuel consumption is then multiplied by projected per gallon fuel costs to calculate the total value of fuel cost savings. All assumptions used in the estimation of vehicle operating costs are presented in Table 10.

Table 10: Fuel Cost Savings Assumptions and Sources

Variable	Unit	Value	Source
Auto Fuel Efficiency	Miles per gallon	Varies by year, 26.15 in 2023 through 38.18 in 2052	U.S. Energy Information Administration
Truck Fuel Efficiency	Miles per gallon	Varies by year, 7.23 in 2023 through 10.45 in 2052	U.S. Energy Information Administration
Auto Fuel Efficiency Factor at 25 MPH (Baseline)	Factor	1.40	U.S. Energy Information Administration
Auto Fuel Efficiency Factor at 65 MPH (Build)	Factor	1.19	U.S. Energy Information Administration
Truck Fuel Efficiency Factor at 25 MPH (Baseline)	Factor	1.21	U.S. Energy Information Administration
Truck Fuel Efficiency Factor at 65 MPH (Build)	Factor	0.98	U.S. Energy Information Administration
Cost of Gasoline	2017\$	Varies by year, \$3.18 in 2023 through \$3.67 in 2052	U.S. Energy Information Administration, Annual Energy Outlook 2018, Table 12
Cost of Diesel	2017\$	Varies by year, \$3.42 in 2023 through \$4.09 in 2052	U.S. Energy Information Administration, Annual Energy Outlook 2018, Table 12
Autos as Share of Project Users	Percentage	93.76%	Caltrans, Average Annual Daily Truck Traffic on the California Highway System, 2006-2016

Variable	Unit	Value	Source
Trucks as Share of Project Users	Percentage	6.24%	Caltrans, Average Annual Daily Truck Traffic on the California Highway System, 2006-2016
Baseline Ramp Travel Speed	Miles per Hour	25	RCTC
Build Ramp Travel Speed	Miles per Hour	65	RCTC
Ramp Length (Baseline and Build)	Miles	1.33	RCTC

4.5 Environmental Protection

This project will create environmental protection benefits relating to reduction in air pollution associated with driving at less efficient speeds and acceleration and deceleration. As described above, vehicles will consume less fuel, and thereby release fewer pollutants, when able to operate at a consistent pace of 65 MPH under the build alternative, instead of decreasing to speeds of 25 MPH under the baseline alternative. For this analysis, four forms of emissions were identified, measured and monetized, including: nitrous oxide (NO_x), particulate matter (PM), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

Over the 30-year analysis period, the Project will result in nearly 1,200 fewer metric tons of pollution than under the baseline alternative, valued at 4 million discounted 2017 dollars. Table 11 shows the amount and value of emissions savings as a result of this Project.

Table 11: Environmental Protection Estimation of Benefits, Millions of 2017 Dollars

Benefit	Project Opening Year			Project Lifecycle		
	Metric Tons	Undiscounted	Discounted (7%)	Metric Tons	Undiscounted	Discounted (7%)
NO _x Emissions Savings	76.14	\$0.63	\$0.45	1,114.80	\$9.22	\$3.91
PM Emissions Savings	0.06	\$0.02	\$0.02	0.91	\$0.34	\$0.13
SO ₂ Emissions Savings	(0.01)	(\$0.00)	(\$0.00)	(0.24)	(\$0.01)	(\$0.00)
VOC Emissions Savings	6.55	\$0.01	\$0.01	55.40	\$0.12	\$0.06
Total Emissions Savings	82.74	\$0.66	\$0.47	1,170.87	\$9.67	\$4.09

SOURCE: WSP, 2018

Environmental benefits were calculated by multiplying VMT in the baseline and build alternatives by emissions per VMT, and by an emissions speed adjustment factor. Emissions under the baseline condition were subtracted emissions under the build alternative to arrive at net emissions associated with the Project. The assumptions used in the estimation of environmental protection benefits are presented in Table 12.

Table 12: Environmental Protection Benefits Assumptions and Sources

Variable	Unit	Value	Source
Cost of NO _x	2017\$ per metric ton	\$8,270	US DOT, BCA Guidance 2018
Cost of PM	2017\$ per metric ton	\$378,301	US DOT, BCA Guidance 2018
Cost of SO ₂	2017\$ per metric ton	\$48,877	US DOT, BCA Guidance 2018
Cost of VOC	2017\$ per metric ton	\$2,098	US DOT, BCA Guidance 2018
Emissions per VMT	Metric tons of emissions per VMT	Varies by year, fuel type, and emission type	California Air Resources Board EMFAC Database, 2017; Cal B/C (for VOC)

Emissions Speed Adjustment Factors	Factor	Varies by year, fuel type, emission type, and speed	California Air Resources Board EMFAC Database, 2017; Cal B/C (for VOC)
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4.6 Quality of Life

This project will create several non-quantifiable quality-of-life benefits. First, the Project will increase transportation choices for individuals by facilitating access to Metrolink Inland Empire-Orange County and 91/Perris Valley commuter rail lines, which run parallel to SR-91 from Riverside to eastern Orange County. Metrolink's Corona-West station is just 1.5 miles east of the SR-71/91 interchange and connects commuter rail passengers to San Bernardino, Perris (Riverside County), downtown Los Angeles (Union Station), and Oceanside (San Diego County). In the same way, the Project will improve travel times for Riverside Transit Agency (RTA) and OCTA express bus routes operating along SR-91 and through the SR-71/91 interchange area.¹¹

This Project also provides improved access to the 68-mile [Santa Ana River Trail](#), which is parallel to SR-91 and will extend from the San Bernardino Mountains to the Pacific Ocean coast and be over 100 miles long once the remaining trail segments are completed. The improvements to the interchange at Green River Road and SR-91 associated with this Project will enhance safety and access for trail users in Riverside County looking to conveniently park their cars while using the Class I bike path to commute or for leisure.

Alleviating the current levels of heavy traffic congestion on SR-91 will also expand access for citizens to essential services, including healthcare and jobs. Relieving traffic through the Project area will support the ability of workers traveling on SR-91 and SR-71 to access jobs in the Inland Empire, as well as services available where the jobs are located, including at hospitals, clinics, schools, colleges and universities, and government facilities.

¹¹ Route 200 (San Bernardino – Riverside – Anaheim), Route 205/206 (Temecula – Murrieta – Lake Elsinore – Corona Transit Center – Orange), and OCTA 794 (La Sierra Metrolink Station – Corona Park and Ride – South Coast Metro).

5 Summary of Results

5.1 Evaluation Measures

The benefit-cost analysis converts potential gains (benefits) and losses (costs) from the Project into monetary units and compares them. The following common benefit-cost evaluation measures are included in this BCA:

- Net Present Value (NPV): NPV compares the net benefits (benefits minus costs) after being discounted to present values using the real discount rate assumption. The NPV provides a perspective on the overall dollar magnitude of cash flows over time in today's dollar terms.
- Benefit Cost Ratio (BCR): The evaluation also estimates the benefit-cost ratio; the present value of incremental benefits is divided by the present value of incremental costs to yield the benefit-cost ratio. The BCR expresses the relation of discounted benefits to discounted costs as a measure of the extent to which a project's benefits either exceed or fall short of the costs.
- Internal Rate of Return (IRR): The IRR is the discount rate which makes the NPV from the Project equal to zero. In other words, it is the discount rate at which the Project breaks even. Generally, the greater the IRR, the more desirable the Project.
- Payback Period: The payback period refers to the period of time required to recover the funds expended on a Project. When calculating the payback period, the time value of money (discounting) is not taken into account.

5.2 BCA Results

Table 13 presents the evaluation results for the project. Results are presented in undiscounted values, and discounted at 7 percent as prescribed by the USDOT. All benefits and costs were estimated in constant 2017 dollars over an evaluation period extending 30 years beyond system completion in 2023.

At a discount rate of 7 percent, the Project yields total benefits of \$208.8 million and total costs of \$110.4 million, for a BCR of 1.89 and a NPV of \$98.4 million. The IRR is 13.4 percent and the payback period is 6.2 years.

Table 13: Benefit Cost Analysis Results, Millions of 2017 Dollars

BCA Metric	Project Lifecycle	
	Undiscounted	Discounted (7%)
Total Benefits	\$676.75	\$208.8
Total Costs	\$131.47	\$110.40
Net Present Value (NPV)	\$545.28	\$98.38
Benefit Cost Ratio (BCR)	5.15	1.89
Internal Rate of Return (IRR)	13.42%	
Payback Period (Years)	\$6.23	

SOURCE: WSP, 2018

The benefits over the project lifecycle are presented in Table 14 by merit criteria category.

Table 14: Benefits by Merit Criteria Category, Millions of 2017 Dollars

Merit Criteria Category	Merit Criteria Detail	Project Lifecycle	
		Undiscounted	Discounted (7%)
Safety	Crash Reduction	\$60.90	\$19.22
State of Good Repair	O&M Savings	\$0.62	\$0.19
Economic Competitiveness	Time Savings	\$584.88	\$178.93
	Fuel Cost Savings	\$20.68	\$6.36
Environmental Sustainability	Emissions Reduction	\$9.67	\$4.09

SOURCE: WSP, 2018

I-10/Avenue 50 Interchange

INTERSTATE 10 / AVENUE 50 INTERCHANGE GATEWAY TO EASTERN COACHELLA VALLEY

BENEFIT COST ANALYSIS

in support of
2020 Statewide Transportation
Improvement Program (STIP)

November 1, 2019

Benefit-Cost Analysis

The City of Coachella, in cooperation with the California Department of Transportation (Caltrans), proposes to construct a new interchange at Interstate 10 (I-10) and Avenue 50 located in the County of Riverside in the City of Coachella, California. The primary purposes of the proposed project are to reduce projected operational deficiencies at the existing Dillon Road intersections, improve merge/diverge operations at State Route 86S (SR-86S) and Dillon Road, and freeway segments at SR-86S, and to provide a new regional access point to I-10.

On April 29, 2015, Governor Brown issued Executive Order B-30-15 stating that State agencies shall take climate change into account in their planning and investment decisions and employ a cost benefit analysis to evaluate and compare infrastructure investments and alternatives. Executive Order B-30-15 must be considered by the Department and Regional Agencies when proposing new programming for the 2020 Statewide Transportation Improvement Program (STIP). In addition, State agencies' planning and investments shall be guided by the following principles:

- Priority should be given to actions that both build climate preparedness and reduce greenhouse gas emissions;
- Where possible, flexible and adaptive approaches should be taken to prepare for uncertain climate impacts;
- Actions should protect the state's most vulnerable populations; and
- Natural infrastructure solutions should be prioritized.

The Climate Change Branch in Caltrans' Division of Transportation Planning is responsible for overseeing the development, coordination, and implementation of climate change policies in all aspects of the Department's decision making. Increasing temperatures, larger wildfires, heavier rain storms, and rising sea levels and storm surges associated with climate change are posing a significant risk to the natural and human resources and to the State's transportation infrastructure. Caltrans' climate change efforts are twofold 1) create and maintain sustainable practices to reduce greenhouse gas emissions from transportation operations and projects, and 2) Implement adaptation measures to increase the resilience of the State Highway System to climate impacts and address vulnerabilities.

A Benefit-Cost Analysis (BCA) was performed to illustrate the cost-effectiveness and climate impacts of the Interstate 10 (I-10) and Avenue 50 Interchange project. The BCA compares the existing infrastructure where no connectivity exists between I-10 and Avenue 50 (No Build Condition) to a partial clover leaf interchange of I-10 and Avenue 50 (Build Condition). Ultimately, the project will include an expansion and extension of Avenue 50 into a six-lane road (currently a two-lane roadway) connecting SR-86 to I-10, which will be completed by the City of Coachella concurrently to the interchange project. This BCA only considers the I-10/Avenue 50 Interchange improvements and takes climate change into account by exploring the benefits of climate change mitigation and adaptation for Lower Greenhouse Gas and Pollutant Emissions in accordance with Caltrans climate change policies. The BCA relies on monetized values from Caltrans' Cal-B/C model to complete climate impacts.

BCA Results

Table 1: Summary of Project Discount Rate Costs demonstrates the BCA ratio for the future year scenarios, assuming 0% and 4% discount rates. The benefit column below includes maintenance costs (as a negative benefit) and the cost column is only today's project costs. Project cost was determined from the project cost breakdown included in Table 1. The BCA Ratio is 4.09 assuming no discount rate and 1.87 assuming a 4% discount rate.

Table 1: Summary of Project Discount Rate Costs

Future Year Scenario	Benefit	Cost	BCA Ratio
No Discount Rate	\$289,296,745.53	\$62,691,700.00	4.61
4% Discount Rate	\$132,031,258.24	\$62,691,700.00	2.11

The analysis considers a base year and a future year for comparisons of costs over the life of the project. Per the Cal-B/C model, the base year is 2017 and construction is anticipated to begin in Summer 2020 and completed by Early 2022. The Period of Analysis includes construction, plus 20 years after completion. For the base year and future year, both No Build and Build conditions will be analyzed. Future year scenarios will be discounted to the base year value assuming a discount rate of 4% (Cal-B/C).

Only incremental costs and benefits are included with this analysis. An incremental cost is the increase in total costs resulting from an increase in production or other activity. For instance, if the maintenance for a road is \$10,000 a year and the proposed project's maintenance costs will be \$5,000 a year as a result from improved condition, the incremental cost of the maintenance is the difference, or a benefit of \$5,000.

Planning, environmental, design and ROW are fully funded through local and regional sources. The total Project cost is estimated to be \$67,350,000 as shown in Table 2: Breakdown of Project Costs by Phase and Fiscal Year. Funding for Planning and Engineering phases have been fully obligated.

Table 2: Breakdown of Project Costs by Phase and Fiscal Year

	Estimate	Status	2010-2016	2017	2018	2019	2020	2021
Planning	\$1,100,000	Complete	\$1,100,000					
Engineering	\$3,300,000	Underway	\$1,500,000	\$750,000	\$750,000	\$300,000		
ROW	\$250,000	Underway				\$250,000		
Construction	\$62,700,000	Planned					\$15,000,000	\$47,700,000
Total	\$67,350,000		\$2,600,000	\$750,000	\$750,000	\$550,000	\$15,000,000	\$47,700,000

Economic and Environmental Benefits

The anticipated economic benefits for this project include the following:

- Time savings for passenger and freight shipment travel; and
- Reduced emissions of greenhouse gases and criteria air pollutants related to climate change.

Both I-10 and SR-86 are included in the national priority Freight Network and are major goods movement corridors. There is currently no system-to-system connection between northbound SR-86 and eastbound I-10. The No Build Condition for goods movement and other travelers going east towards Arizona from

Benefit Cost Analysis for Coachella I-10/Avenue 50 Interchange

the southern Coachella Valley includes traveling northwest on SR- 86, exiting Dillon Road, and traveling northeast to connect to eastbound I-10, approximately a 5.7-mile trip. The Build Condition includes the exiting SR-86, traveling via Avenue 50 to I-10/Avenue 50 Interchange (Project Site), approximately a 3.2-mile trip. Therefore, the new corridor will reduce overall trip lengths from SR-86 to I-10 by approximately 2.5 miles. Figure 1 illustrates the No Build Condition and Figure 2 illustrates the Build Condition.

Figure 1: No Build Condition

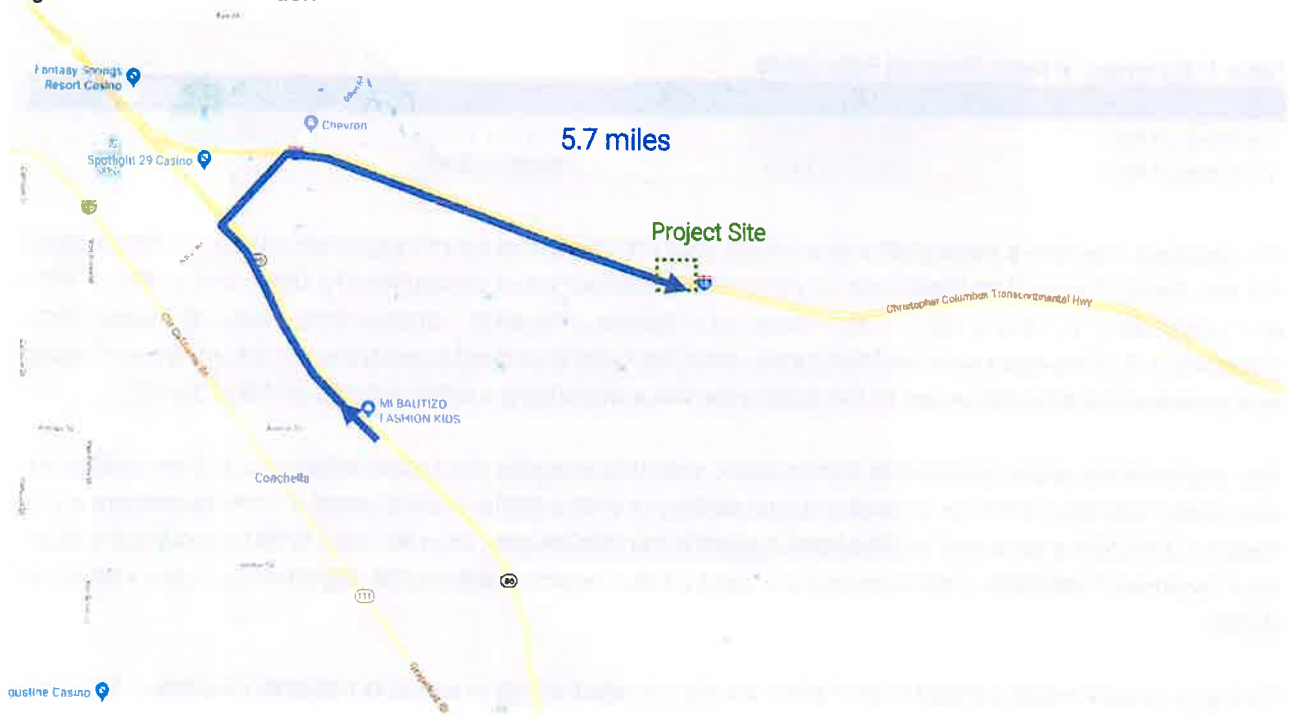
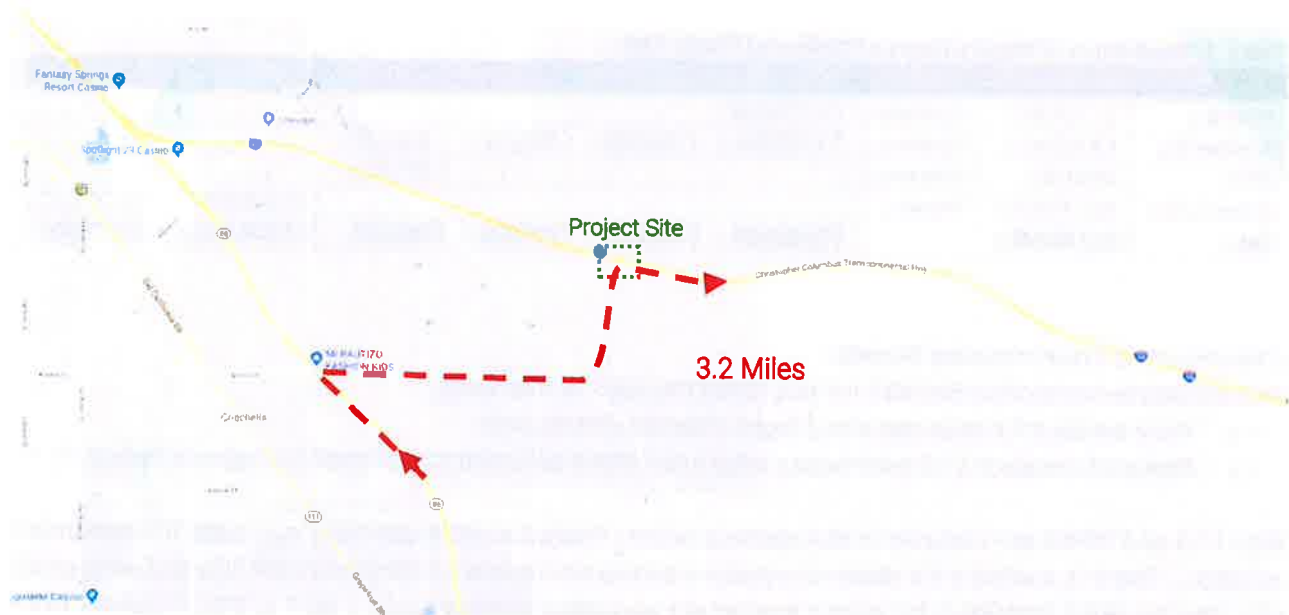


Figure 2: Build Condition



Benefit Cost Analysis for Coachella I-10/Avenue 50 Interchange

Travel Time Savings Benefits

The Riverside Transportation Analysis Model (RivTAM) was used to generate transportation performance measures for this BCA study. The model was updated to include the 2040 socio-economic data (such as population demographics, employment, and economic activity) consistent with the City of Coachella adopted General Plan and used to develop traffic forecasts for the I-10/Avenue 50 Interchange Project Approval/Environmental Document (PA/ED) phase.

Scenarios were evaluated using the 2040 model for the No Build and Build Condition. Two key transportation performance measures were derived from the model, including 1) vehicle hours of travel (VHT) and 2) vehicle-miles of traveled (VMT) for the study area including the City of Coachella, Indio, La Quinta, and areas to the west of Coachella along (and including) the I-10 Freeway. These performance measures were then utilized to calculate the benefits for the project, including travel time cost savings and vehicle operating cost savings.

As mentioned previously, for the purposes of the analysis, it is assumed that the construction will begin in Summer 2020 and completed and open to traffic by Early 2022. The analysis period, therefore, begins with the first expenditures in 2020, continues through construction until 2022, and then through 20-years of operations. Model results are shown in Tables 3: VMT and VHT Model Results and Table 4: Annual Estimate Change in VMT and VHT.

Table 3: VMT and VHT Model Results

No Build Condition			Build Condition			Daily Savings	
Year	VMT (daily)	VHT (daily)	Year	VMT (daily)	VHT (daily)	VMT (daily)	VHT (daily)
2020			2021	5,871,408	120,753	46,639	1,075
2021	5,918,047	121,828	2022	6,001,874	123,270	50,879	1,174
2022	6,052,753	124,444	2023	6,132,340	125,788	55,119	1,271
2023	6,187,459	127,059	2024	6,262,806	128,306	59,359	1,369
2024	6,322,165	129,675	2025	6,393,273	130,824	63,598	1,466
2025	6,456,871	132,290	2026	6,523,739	133,341	67,838	1,565
2026	6,591,577	134,906	2027	6,654,205	135,859	72,078	1,662
2027	6,726,283	137,521	2028	6,784,671	138,377	76,318	1,760
2028	6,860,989	140,137	2029	6,915,137	140,894	80,558	1,858
2029	6,995,695	142,752	2030	7,045,603	143,412	84,798	1,956
2030	7,130,401	145,368	2031	7,176,069	145,930	89,038	2,053
2031	7,265,107	147,983	2032	7,306,535	148,447	93,277	2,152
2032	7,399,812	150,599	2033	7,437,001	150,965	97,517	2,249
2033	7,534,518	153,214	2034	7,567,467	153,483	101,757	2,347
2034	7,669,224	155,830	2035	7,697,933	156,001	105,997	2,444
2035	7,803,930	158,445	2036	7,828,399	158,518	110,237	2,543
2036	7,938,636	161,061	2037	7,958,865	161,036	114,477	2,640
2037	8,073,342	163,676	2038	8,089,331	163,554	118,717	2,738
2038	8,208,048	166,292	2039	8,219,797	166,071	122,957	2,836
2039	8,342,754	168,907	2040	8,350,263	168,589	127,197	2,934
2040	8,477,460	171,523					

Benefit Cost Analysis for Coachella I-10/Avenue 50 Interchange

Table 4: Annual Estimate Change in VMT and VHT

Year	Annual Reductions			
	VMT	VHT	Person Hours	Vehicle-Gallons
2020				
2021	11,659,800	268,800	349,400	362,106
2022	12,719,800	293,500	381,600	395,025
2023	13,779,800	317,800	413,100	427,944
2024	14,839,800	342,300	445,000	460,863
2025	15,899,500	366,500	476,500	493,773
2026	16,959,500	391,300	508,700	526,693
2027	18,019,500	415,500	540,200	559,612
2028	19,079,500	440,000	572,000	592,531
2029	20,139,500	464,500	603,900	625,450
2030	21,199,500	489,000	635,700	658,370
2031	22,259,500	513,300	667,300	691,289
2032	23,319,300	538,000	699,400	724,202
2033	24,379,300	562,300	731,000	757,121
2034	25,439,300	586,800	762,800	790,040
2035	26,499,300	611,000	794,300	822,960
2036	27,559,300	635,800	826,500	855,879
2037	28,619,300	660,000	858,000	888,798
2038	29,679,300	684,500	889,900	921,717
2039	30,739,300	709,000	921,700	954,637
2040	31,799,300	733,500	953,600	987,556
Total	434,589,400	10,023,400	13,030,600	13,496,565

The vehicle hours traveled (VHT) obtained from the model shows a reduction in travel time resulting from the project implementation by providing an additional regional access to I-10. The change in vehicle hours were multiplied with the average vehicle occupancy (AVO) to generate change in person hours, which were then multiplied by the recommended value of travel time provided in the Cal B/C guidance to calculate the travel time cost benefits.

The AVO is estimated to be 1.3 persons/vehicle based on vehicle occupancy rates of auto trips in the RIVTAM Model. The value of travel time is assumed to be the average of local and intercity travel cost (\$13.75 per person-hour) recommended by the Cal B/C guidance.

The annual VHT in the study area was forecasted by RIVTAM model to decrease by 953,600 vehicle hours in 2040, which translates to the annual travel time cost savings of \$13.1 million (pre-discount) in 2040. Travel time cost benefits were calculated on an annual basis over the 20-year analysis period.

Vehicle Operating Costs Benefits

The expected reduction in vehicle miles traveled (VMT) will reduce the costs associated with the operation and maintenance of vehicles. The annual VMT in the study area was forecasted by RIVTAM model to decrease by 31.8 million vehicle miles in 2040, which translates to the annual vehicle operating cost savings of \$12.4 million (pre-discount) in 2040. This is based on \$0.39 per mile average operating cost for "sedan average" which was derived from Your Driving Costs, 2017 Edition by American

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Automobile Association. The average vehicle operating cost per mile includes costs for fuel, maintenance, tires, full-coverage insurance, fees (license, registration and taxes), depreciation, and financing. Vehicle operating cost benefits were calculated on an annual basis over the 20-year analysis period.

Cumulative Monetized Project Benefits

The annual pre-discount benefits over the 20-year analysis period for the Avenue 50/I-10 Interchange Project are shown in Table 5: Annual Benefits. Total pre-discount monetized benefits are estimated to be \$348,660,500.

Table 5: Annual Benefits

Year	Travel Time Savings	Emission Savings	Total
2020			
2021	\$4,804,300	\$4,547,300	\$9,351,600
2022	\$5,247,000	\$4,960,700	\$10,207,700
2023	\$5,680,100	\$5,374,100	\$11,054,200
2024	\$6,118,800	\$5,787,500	\$11,906,300
2025	\$6,551,900	\$6,200,800	\$12,752,700
2026	\$6,994,600	\$6,614,200	\$13,608,800
2027	\$7,427,800	\$7,027,600	\$14,455,400
2028	\$7,865,000	\$7,441,000	\$15,306,000
2029	\$8,303,600	\$7,854,400	\$16,158,000
2030	\$8,740,900	\$8,267,800	\$17,008,700
2031	\$9,175,400	\$8,681,200	\$17,856,600
2032	\$9,616,800	\$9,094,500	\$18,711,300
2033	\$10,051,300	\$9,507,900	\$19,559,200
2034	\$10,488,500	\$9,921,300	\$20,409,800
2035	\$10,921,600	\$10,334,700	\$21,256,300
2036	\$11,364,400	\$10,748,100	\$22,112,500
2037	\$11,797,500	\$11,161,500	\$22,959,000
2038	\$12,236,100	\$11,574,900	\$23,811,000
2039	\$12,673,400	\$11,988,300	\$24,661,700
2040	\$13,112,000	\$12,401,700	\$25,513,700
Total	\$179,171,000	\$169,489,500	\$348,660,500

Reduced Emissions of Greenhouse Gases

Table 6: Amount of Pollutants for No Build Condition estimates the release of pollutants into the air for the projected 2.5-minute delay if the project is not constructed. Light Duty Gasoline Vehicles (LDGV), Light-Duty Gasoline-fueled Trucks (LDGT), Heavy-Duty Gasoline-fueled Vehicles (HDGV), Heavy-Duty Diesel Vehicles (HDDV), Light-Duty Diesel Trucks (LDDT), Heavy-Duty Diesel Vehicles (HDDV), and Motorcycle (MC) emissions are listed by grams per minute.

Benefit Cost Analysis for Coachella I-10/Avenue 50 Interchange

Table 6: Amount of Pollutants for No Build Condition

Pollutants	Units	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
VOC	g/min	0.045	0.067	0.108	0.023	0.045	0.058	0.319
THC	g/min	0.053	0.081	0.121	0.023	0.045	0.058	0.352
CO	g/min	1.187	1.212	2.532	0.117	0.098	0.427	5.018
CO2	g/min	8.75	8.75	8.75	8.75	8.75	8.75	8.75
NO _x	g/min	0.059	0.068	0.089	0.045	0.062	0.563	0.027
PM _{2.5}	g/min	NA	NA	NA	NA	NA	0.018	NA
PM ₁₀	g/min	NA	NA	NA	NA	NA	0.02	NA

Source: EPA Emissions Fact Sheet and assumes a typical vehicle emits about 4.6 metric tons of carbon dioxide per year

Significant benefits can be derived by reducing the vehicular travel time through a corridor. Similar to time savings benefits, not building that missing connections to I-10 and SR-86 would negatively impact the environment in a quantifiable way. Table 7: Cost of Reduced Emissions demonstrates constructing the project would improve the environment over the No Build scenario by reducing the time vehicles sit idle, which directly reduces the emission of greenhouse gases.

Table 7: Cost of Reduced Emissions

	\$ /Ton (2017)	\$ /Ton (2022)	\$ /Ton (2042)	\$ /Ton (AVG)
CO	\$ 76.50	\$ 88.68	\$ 160.17	\$ 124.43
CO2	\$ 38.76	\$ 44.93	\$ 81.15	\$ 63.04
VOC	\$ 1,045.50	\$ 1,212.02	\$ 2,189.04	\$ 1,700.53
NO _x	\$ 14,178.00	\$ 16,436.19	\$ 29,685.58	\$ 23,060.89
PM	\$ 109,854.00	\$ 127,350.89	\$ 230,009.88	\$ 178,680.39
SO _x	\$ 55,488.00	\$ 64,325.80	\$ 116,179.55	\$ 90,252.67

Source: Cal-B/C Model

Table 8 and Table 9 reflect the cost of emissions for a 2.5-minute time delay for both personal and truck Travel. Personal Travel is based on 17,412 AADT and Truck Travel is based on 9,588 AADT, totaling 27,000 AADT for this stretch of I-10.

Table 8: Cost of Emissions for a 2.5-Minute Time Delay for Personal Travel

Pollutants	Units	LDGV	Minutes Delay (total/day)	Grams/Day	Grams/Year	Tons/Year	\$/Year
VOC	g/min	0.045	43530	1958.85	714980.25	0.715	\$ 1,215.85
CO	g/min	1.187	43530	51670.11	18859590.15	18.860	\$ 2,346.68
CO2	g/min	8.75	43530	380887.5	139023937.5	139.024	\$8,764.65
NO _x	g/min	0.059	43530	2568.27	937418.55	0.937	\$ 21,617.70

Benefit Cost Analysis for Coachella I-10/Avenue 50 Interchange

Table 9: Cost of Emissions for a 2.5 Minute Time Delay for Truck Travel

Pollutants	Units	LDGV	Minutes-Delay (Total/day)	Grams/Day	Grams/Year	Tons/Year	\$/Year
VOC	g/min	0.058	23970	1390.26	507444.9	0.507	\$862.17
CO2	g/min	0.427	23970	10235.19	3735844.35	3.736	\$235.53
NO _x	g/min	0.563	23970	13495.11	4925715.15	4.926	\$113,597.92
PM _{2.5}	g/min	0.018	23970	431.46	157482.9	0.157	\$28,052.82

Total emission reductions for the project yield \$176,694 per year or a total of \$3,533,867 for the life of the project (20 years).

Maintenance Costs

For this analysis, the maintenance costs are only present in the Build Condition. If the No Build Condition was pursued, there would be no maintenance costs. Therefore, maintenance is a cost of the proposed alternative and would be an incremental cost over the No Build Condition. Table 10, Maintenance Costs, summarizes the expectant maintenance of the intersection that would occur every ten years in the 20 years of service. The costs for this work were determined assuming that the structures would receive routine maintenance and repaving.

Table 10: Maintenance Costs

Service Type	Year	Cost
Preservation	10	\$180,000
Preservation	20	\$180,000

Interstate 10 / Avenue 50 Interchange: Gateway to Eastern Coachella Valley

Done By BNA
Checked By MPY
Date 11/1/2018

Future Year Scenario	Benefit	Cost	BCA Ratio
No Discount Rate	\$ 289,296,745.53	\$ 62,691,700.00	4.61
4% Discount Rate	\$ 132,031,258.24	\$ 62,691,700.00	2.11

Interstate 10 / Avenue 50 Interchange: Gateway to Eastern Coachella Valley

Done By BNA
 Checked By MPY
 Date 11/1/2018

- Assumptions:
- 1) Life Cycle Assumptions 20 years
 - 2) Preservation Treatment 10 years
 - 4) Cost of Capital, c = 6 %
 - 5) Inflation Rate, i = 2 %

	Year n	Cost (n=0) (C)	Future Cost $F=C*(1+i)^n$	Present Value $PV=F/(1+c)^n$
Construction Cost	0	\$62,691,700	\$62,691,700	\$62,691,700
Preservation	10	\$180,000	\$219,419	\$122,522
Preservation	20	\$180,000	\$267,471	\$83,399

Total: \$62,897,621

CVAG Regional Signal Synchronization

CVAG – Phase II Corridor Signal Synchronization

Project Description: The CVAG Regional Signal Synchronization Master Plan identifies seventy regional arterials that collectively represent the transportation system that will benefit from traffic signal synchronization. The Executive Committee prioritized the top 21 of these corridors within the Plan. Phase I of the project implements the top three corridors: Highway 111, Ramon Road and Washington Street. The design and environmental work for these three corridors is underway. CVAG Phase II Signal Synchronization includes the signal coordination for 18 arterial corridors in the Coachella Valley.

Air Quality Methodology & Analysis: The California Air Resources Board (CARB) and Caltrans-approved methodology for quantifying the air pollutant reductions resulting from the coordination of traffic signals¹ was used to calculate the air quality benefits attributable to the implementation of CVAG Phase II signal synchronization. The CARB/Caltrans methodology utilizes speed specific emission factors to quantify air pollutant reductions that result from traffic flow improvements. The input data associated with each of the 18 corridors is shown below in Table 1:

Table 1: CVAG Phase II Signal Synchronization Corridor Specifications²

No.	Corridor	Corridor Segment	Corridor Length (mi.)	Before and After Project Average Daily Traffic (ADT)	Before Project Average Speed (mph)	After Project Average Speed (mph)
1	Monterey Ave/ Hwy 74	South to Highway 111 to Ramon Rd	10.47	22,768	45	55
2	Cook St	Fairway Drive to Varner Rd	5.82	23,607	45	55
3	Palm Drive	I-10 to Mission Lakes Blvd	6.62	25,750	40	50
4	Bob Hope Drive	Highway 111 to Varner Rd	6.10	20,083	45	55
5	Fred Waring Dr.	Painters Path to Indio Blvd	9.73	24,491	40	50
6	Dinah Shore Dr.	Gene Autry Trail to Portola Avenue	7.67	20,133	42	52
7	Gene Autry Trail (Highway 111)	E. Palm Canyon Dr. to Vista Chino	6.14	25,046	43	53
8	Date Palm Dr.	Palm Canyon Dr. to Varner Rd	5.78	20,449	40	50
9	Indio Blvd	I-10 (W/O Jefferson St) to Van Buren St	4.44	21,200	37	47
10	Jefferson St	Avenue 54 to Avenue 40	5.48	20,596	45	55
11	Vista Chino (Highway 111)	N Palm Canyon Dr. to Gene Autry Trail	2.40	21,736	43	53

¹ <https://www.arb.ca.gov/planning/tsaq/eval/eval.htm>

² Data provided by Advantec Consulting Engineers, Inc. on behalf of CVAG

12	Palm Canyon Dr. (Highway 111)	Gene Autry Trail to Buddy Rogers Ave	10.69	23,306	38	48
13	Country Club Dr.	Highway 111 to Avenue 42	10.19	16,313	45	55
14	Monroe St	Avenue 52 to Avenue 40	7.04	15,423	35	45
15	Avenue 48	Washington St to Dillon Rd	5.93	15,920	42	52
16	Sunrise Way	Palm Canyon Drive to San Rafael Drive	4.54	17,133	40	50
17	Indian Canyon Dr.	SR-62 to Palm Canyon Drive	6.27	15,465	38	48
18	Jackson St	Avenue 52 to Avenue 41	3.90	11,390	40	50

Emission factors as a function of speed for automobile travel were derived from the CARB/Caltrans Emissions Factor Tables³ for CMAQ funded projects dated March 2018. Emission Factor Inputs for Automobile Travel are shown below in Table 2.

Table 2: Emission Factors by Speed for Automobile Travel, grams per mile

Speed					
(mph)	ROG	CO	NOx	PM2.5	Ex
35	0.05	1.30	0.39	0.005	
36	0.05	1.28	0.39	0.005	
37	0.05	1.26	0.38	0.004	
38	0.05	1.24	0.38	0.004	
39	0.05	1.22	0.37	0.004	
40	0.04	1.21	0.37	0.004	
41	0.04	1.19	0.37	0.004	
42	0.04	1.18	0.37	0.004	
43	0.04	1.16	0.36	0.004	
44	0.04	1.15	0.36	0.004	
45	0.04	1.13	0.36	0.004	
46	0.04	1.12	0.36	0.004	
47	0.04	1.11	0.35	0.004	
48	0.04	1.10	0.35	0.004	
49	0.04	1.09	0.35	0.004	
50	0.04	1.07	0.35	0.004	
51	0.04	1.07	0.35	0.004	
52	0.04	1.06	0.35	0.004	
53	0.04	1.05	0.35	0.004	
54	0.04	1.05	0.35	0.004	
55	0.04	1.04	0.35	0.004	

To calculate the emission reductions attributable to the traffic signal coordination the following formula is used:

- Daily Emission Reductions = [(VMT)*(Before Speed Factor - After Speed Factor)]/1,000 g/kg

³ <https://www.arb.ca.gov/planning/tsaq/eval/evaltables.pdf>

- Where VMT = ADT x Corridor Length

Table 3, below shows the emission factors applied to each Phase II corridor:

Table 3: Emission Factors (EF) Associated with Phase II Corridors

No.	Corridor	Before Project Average Speed	ROG EF	CO EF	NOx EF	PM2.5 EF	After Project Average Speed	ROG EF	CO EF	NOx EF	PM2.5 EF
1	Monterey Ave/ Hwy 74	45	0.040	1.130	0.360	0.004	55	0.040	1.040	0.350	0.004
2	Cook St	45	0.040	1.130	0.360	0.004	55	0.040	1.040	0.350	0.004
3	Palm Drive	40	0.040	1.210	0.370	0.004	50	0.040	1.070	0.350	0.004
4	Bob Hope Drive	45	0.040	1.130	0.360	0.004	55	0.040	1.040	0.350	0.004
5	Fred Waring Drive	40	0.040	1.210	0.370	0.004	50	0.040	1.070	0.350	0.004
6	Dinah Shore Drove	42	0.040	1.180	0.370	0.004	52	0.040	1.060	0.350	0.004
7	Gene Autry Trail (Highway 111)	43	0.040	1.160	0.360	0.004	53	0.040	1.050	0.350	0.004
8	Date Palm Drive	40	0.040	1.210	0.370	0.004	50	0.040	1.070	0.350	0.004
9	Indio Blvd	37	0.050	1.260	0.380	0.004	47	0.040	1.110	0.350	0.004
10	Jefferson St	45	0.040	1.130	0.360	0.004	55	0.040	1.040	0.350	0.004
11	Vista Chino (Highway 111)	43	0.040	1.160	0.360	0.004	53	0.040	1.050	0.350	0.004
12	Palm Canyon Drive (Highway 111)	38	0.050	1.240	0.380	0.004	48	0.040	1.100	0.350	0.004
13	Country Club Drive	45	0.040	1.130	0.360	0.004	55	0.040	1.040	0.350	0.004
14	Monroe St	35	0.050	1.300	0.390	0.005	45	0.040	1.130	0.360	0.004
15	Avenue 48	42	0.040	1.180	0.370	0.004	52	0.040	1.060	0.350	0.004
16	Sunrise Way	40	0.040	1.210	0.370	0.004	50	0.040	1.070	0.350	0.004
17	Indian Canyon Drive	38	0.050	1.240	0.380	0.004	48	0.040	1.100	0.350	0.004
18	Jackson St	40	0.040	1.210	0.370	0.004	50	0.040	1.070	0.350	0.004

Table 4 shows the quantified air pollutant reductions attributable to signal coordination for each of the Phase II corridors:

Table 4: Quantified Air Pollutant Reductions, kg per day

No.	Corridor	Before Project Average Speed	ROG (kg/day)	CO (kg/day)	NOx (kg/day)	PM2.5 (kg/day)
1	Monterey Ave/ Hwy 74	45	0.000	21.454	2.384	0.0000
2	Cook St	45	0.000	12.365	1.374	0.0000
3	Palm Drive	40	0.000	23.865	3.409	0.0000
4	Bob Hope Drive	45	0.000	11.026	1.225	0.0000
5	Fred Waring Drive	40	0.000	33.362	4.766	0.0000
6	Dinah Shore Drive	42	0.000	18.530	3.088	0.0000
7	Gene Autry Trail (Highway 111)	43	0.000	16.916	1.538	0.0000
8	Date Palm Drive	40	0.000	16.547	2.364	0.0000
9	Indio Blvd	37	0.941	14.119	2.824	0.0000
10	Jefferson St	45	0.000	10.158	1.129	0.0000
11	Vista Chino (Highway 111)	43	0.000	5.738	0.522	0.0000
12	Palm Canyon Drive (Highway 111)	38	2.491	34.880	7.474	0.0000
13	Country Club Drive	45	0.000	14.961	1.662	0.0000
14	Monroe St	35	1.086	18.458	3.257	0.1086
15	Avenue 48	42	0.000	11.329	1.888	0.0000
16	Sunrise Way	40	0.000	10.890	1.556	0.0000
17	Indian Canyon Drive	38	0.970	13.575	2.909	0.0000
18	Jackson St	40	0.000	6.219	0.888	0.0000

Results: The total air quality benefits of the CVAG Phase II signal synchronization are shown below in Table 5. Note that PM₁₀ is included and is calculated using the CARB PM₁₀ conversion factor of 0.15 for automotive exhaust. Also, in accordance with CMAQ reporting guidelines, the results are presented in units of kilogram (kg) of air pollutant reduced per day:

Table 5: Emission Reductions Resulting from Phase II Signal Synchronization – kg per day

Reactive Organic Gases (ROG)	Carbon Monoxide (CO)	Oxides of Nitrogen (NO _x)	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})
5.488	294.392	44.257	0.125	0.109

Section 17. Project Study Reports (PSRs) – Dropbox Links

Links to the PSRs for new projects are as follows:

- **71/91 Interchange**
<https://www.dropbox.com/s/cpielqw5temerwn/SR%2071-91%20IC%20-%20Project%20Study%20Report%20ProjectDevSupport.pdf?dl=0>
- **I-10/Avenue 50**
[https://www.dropbox.com/s/4ae0dapl84n9gmw/I-10 Avenue%2050%20PSR-PDS.pdf?dl=0](https://www.dropbox.com/s/4ae0dapl84n9gmw/I-10%20Avenue%2050%20PSR-PDS.pdf?dl=0)
- **CVAG Regional Signal Synchronization, Ph 2**
<https://www.cvag.org/TSI.htm>

Section 18. Board Documentation of 2020 RTIP Approval

RIVERSIDE COUNTY TRANSPORTATION COMMISSION	
DATE:	October 17, 2019
TO:	Riverside County Transportation Commission
FROM:	Budget and Implementation Committee Shirley Medina, Planning and Programming Director
THROUGH:	Anne Mayer, Executive Director
SUBJECT:	2020 State Transportation Improvement Program Adopted Fund Estimate and Project Recommendations

BUDGET AND IMPLEMENTATION COMMITTEE AND STAFF RECOMMENDATION:

This item is for the Commission to:

- 1) Approve programming \$16,376,513 of 2020 State Transportation Improvement Program (STIP) Western Riverside County and Palo Verde Valley funding capacity and \$50 million made available from the STIP AB 3090 replacement placeholder for a total of \$66,376,513 to the State Route 71/State Route 91 (71/91) Direct Connector project, and forward to the California Transportation Commission (CTC);
- 2) Include programming \$4,472,007 of 2020 STIP Coachella Valley funding capacity based on the project recommendation by the Coachella Valley Association of Governments (CVAG) and forward to the CTC;
- 3) Include programming Planning, Programming, and Monitoring (PPM) funds (2 percent of STIP programming capacity) in the amount of \$425,480 in Fiscal Year 2022/23;
- 4) Submit the 2020 STIP submittal to CTC by the statutory deadline of December 15, 2019;
- 5) Forward the Riverside County 2020 STIP project recommendations to the Southern California Association of Governments (SCAG) to conduct regional performance measures analysis as required by the CTC STIP guidelines;
- 6) Approve Agreement No. 07-71-028-03, Amendment No. 3 to Agreement No. 07-71-028-00, with the city of Blythe (Blythe) to trade \$89,649 of Palo Verde Valley STIP funds with Measure A Western Riverside County Highway funds to facilitate delivery of local arterial projects;
- 7) Authorize the Executive Director, pursuant to legal counsel review, to execute Agreement No. 07-71-028-03 on behalf of the Commission upon CTC adoption of the 2020 STIP in March 2020; and
- 8) Authorize the Executive Director to seek and pursue competitive funding opportunities for the 71/91 Interchange project.

BACKGROUND INFORMATION:

At its July 2019 Commission meeting, the adjustment to the funding formula for the three geographic areas was approved, per the STIP Intracounty Memorandum of Understanding (MOU) with Western Riverside Council of Governments (WRCOG) and CVAG. Staff also presented an outline of the process for developing the 2020 STIP and reported that the draft Fund Estimate (FE) indicated Riverside County's Target Share for programming was \$10.22 million. Subsequently, the STIP Final FE, which was adopted at the August 14, 2019 CTC meeting, was revised to reflect Riverside County's share target at \$21.274 million.

The STIP is primarily funded with revenues derived from the state and federal gasoline excise tax. With the recent passage of Senate Bill 1, an additional \$100 million per year is included in the STIP statewide. Although this amount is beneficial, the more significant benefit from SB 1 is in stabilizing revenues, which becomes effective this fiscal year.

CTC staff is referring to the 2020 STIP as a "transition" STIP as the benefits of SB 1 will be reflected in future STIPs. The 2020 STIP is lower than originally anticipated due to the following:

- Declining fuel consumption
- 2018 STIP was overprogrammed (excise tax rate was assumed at a higher level)
- 2018 STIP projects were advanced from later years to early years (for projects funded with STIP and SB 1 competitive programs projects)

The CTC expects STIP revenues to increase starting with the 2022 STIP cycle, but not substantially due to continued fuel efficiencies and declines in gasoline and diesel consumption.

Riverside County 2020 STIP Target Share

The 2020 STIP funding distribution for the three geographic areas is included in the table below based on the funding distribution approved at its July 2019 Commission meeting.

2020 STIP Fund Estimate for Riverside County

		Target Share
Total Riverside County Share		\$21,274,000
	Less: 2% Planning, Programming and Monitoring (PPM)	425,480
Total New Project Programming		20,848,520
Western County	78.12%	16,286,864
Coachella Valley	21.45%	4,472,007
Palo Verde Valley	00.43%	89,649

Per an MOU between the Commission and Blythe, Palo Verde Valley STIP funds have been traded with Measure A Western Riverside County highway funds to facilitate delivery of local arterial

projects in the Palo Verde Valley. Given Blythe's small staff, lower STIP funding levels, and focus on local arterials, it is more efficient to provide local funding to ensure project delivery and a less cumbersome allocation process. Upon CTC adoption of the 2020 STIP, staff recommends amending the STIP MOU with Blythe trading \$89,649 of STIP funds with Measure A Western Riverside County highway funds. Blythe will also be required to amend its Measure A Capital Improvement Program to include the STIP trade funds and associated project(s). As a result, project recommendations for 2020 STIP Western Riverside County total \$16,376,513.

CTC Programming Requirements

The 2020 STIP covers a five-year period from FYs 2020/21 – 2024/25. CTC staff reported that new programming capacity is mostly available in the last two years of the 2020 STIP cycle (FY's 2023/24 and 2024/25). A few notable items for programming STIP projects are:

- ✓ Projects cannot be programmed prior to FY 2022/23 without pushing back projects currently programmed in the first three years.
- ✓ Projects must have a completed project study report (PSR) or PSR Equivalent.
- ✓ Projects requesting over \$15 million in STIP funds must provide additional analysis (e.g. Benefit/Cost (B/C) and air quality analyses).
- ✓ Project phases must be fully funded.

2020 STIP Programming Recommendation: Western Riverside County

In addition to the \$16,376,513 of 2020 STIP funds available for Western Riverside County, \$50 million is also available from an AB 3090 replacement project approved by the CTC in early 2019. Through the 2018 STIP cycle, the I-15 Express Lanes Southern Extension project was proposed for programming in FY 2019/20; however, CTC staff programmed it in FY 2022/23. Rather than delay environmental work, the Commission took action to commence with the environmental phase and processed an AB 3090 agreement with CTC resulting in a \$50 million placeholder in the STIP in FY 2022/23. Therefore, a total of \$66,376,513 is available for programming in Western Riverside County.

Staff recommends programming the \$66,376,513 on the 71/91 Interchange project for construction. This project is a high priority project included in the 2019-2029 Western Riverside County Delivery, which was approved by the Commission in July 2019. It also has a completed PSR, environmental document, and B/C and air quality analysis. Such programming will enable the Commission to move this project forward.

Although fully funded through Commission-controlled revenues, it is proposed that opportunities to compete or obtain other state or federal funds should continue to be pursued for the 71/91 Interchange project. Receipt of competitive funds could allow Commission revenues to be

reallocated to other priority projects. Pursuit of competitive funds will depend on whether or not success is likely based on program guidelines and on other Riverside County candidate projects. Accordingly, staff recommends that the Commission authorize the Executive Director to seek and pursue competitive funding opportunities for the 71/91 Interchange project.

2020 STIP Programming Recommendation: Coachella Valley

As previously stated, CVAG is responsible for STIP programming actions for the Coachella Valley per the STIP Intracounty MOU. CVAG has indicated it plans to present STIP project recommendations for approval at its September 2019 Executive Committee meeting. Commission staff will include the recommended project(s) in this agenda item for the October Commission meeting and will forward project information to SCAG for the regional performance measures analysis.


2020 STIP PPM Programming

PPM in the amount of \$425,480 will be programmed in FY 2022/23. Commission staff will coordinate with CVAG on the use of PPM for planning, programming and monitoring activities.

2020 STIP Submittal

The 2020 STIP submittal is statutorily due to the CTC by December 15, 2019. The submittal requires various forms and reports that will involve input from Caltrans, project sponsors and consultants, and SCAG. The proposed STIP projects will need to be submitted to SCAG by the end of September to give SCAG sufficient time to conduct the required regional performance measures analysis to meet the submittal deadline.

STIP funding for Commission projects and PPM will be included in future budgets based on the CTC's STIP adoption in March 2020. STIP funding for CVAG projects will not pass through the Commission but will be received directly by CVAG.

Financial Information					
In Fiscal Year Budget:	N/A	Year:	FY 2022/23	Amount:	\$66,376,513
Source of Funds:	2020 STIP			Budget Adjustment:	N/A
GL/Project Accounting No.:	652040 6XXXX 106 65 6XXXX 003021 81301 262 31 81301			\$425,480 (PPM) \$66,376,513 (71/91 Interchange)	
Fiscal Procedures Approved:				Date:	09/16/2019

- 3) Authorize the Chair or Executive Director, pursuant to legal counsel review, to execute the agreement.

7F. NEXT GENERATION RAIL CORRIDORS ANALYSIS REPORT

Accept the Next Generation Rail Corridors Analysis Report.

7G. COUNTYWIDE TRANSPORTATION IMPROVEMENT & TRAFFIC RELIEF PLAN: VISION, GOALS, AND OBJECTIVES

- 1) Receive background information on the Traffic Relief Strategy Committee; and
- 2) Discuss the vision, goals, and objectives of the Countywide Transportation Improvement & Traffic Relief Plan.

7H. APPROVAL OF UTILITY AGREEMENT AMENDMENT WITH SOUTHERN CALIFORNIA GAS FOR STATE ROUTE 71/STATE ROUTE 91 INTERCHANGE PROJECT

- 1) Approve Agreement No. 18-31-103-01, Amendment No. 1 to Agreement No. 18-31-103-00, with Southern California Gas (SCG) for construction of utility relocations for the State Route 71/SR-91 Interchange (71/91 IC) project in the amount of \$338,255, plus a contingency amount of \$33,825, for an additional amount of \$372,080, and a total amount not to exceed \$3,552,115;
- 2) Authorize the 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 the use of the contingency amount as may be required for this utility relocation agreement.

8. 2020 STATE TRANSPORTATION IMPROVEMENT PROGRAM ADOPTED FUND ESTIMATE AND PROJECT RECOMMENDATIONS

Shirley Medina, Planning and Programming Director, presented the 2020 State Transportation Improvement Program (STIP) adopted Fund Estimate and project recommendations, highlighting the following:

- 2020 STIP:
 - Adoption – March 25, 2020 CTC meeting
 - Statewide new programming capacity - \$407 million
 - Riverside County new programming capacity - \$21.274 million
- Lower STIP Fund Estimate due to:
 - Overestimated 2018 STIP Revenues, over programming

- 2018 STIP projects were advanced to match SB 1 allocations
- Fuel efficiencies
- Benefits of SB 1:
 - Increased the incremental excise tax to 17.8 cents per gallon in FY 2019/20 with annual adjustments for inflation beginning in FY 2020/21
 - Added \$100 million per year to STIP
 - Stabilize revenues in future STIP cycles
- Past STIP cycles from 2008 – 2020
- 2020 STIP Fund Estimate for Riverside County
- 2020 STIP Programming – Western County project recommendation:
 - 71/91 Interchange, \$66,376,513
 - Palo Verde Valley STIP trade approved at July Commission meeting, \$89,649 included in above total for Western County
 - Western Riverside County share \$16,286,864
 - \$50 million from AB 3090 replacement (previously on I-15 Express Lanes South)
 - 71/91 Interchange is high priority in the 2019-2029 Delivery Plan
 - 71/91 Interchange has approved: PSR, B/C analysis, environmental document
 - Design and right of way near complete
 - Construction funding complete with other fund sources and/or competitive programs
- 71/91 Interchange Improvement project map/rendering
- 2020 STIP programming: Coachella Valley recommendation - \$4,472,007
 - I-10/Avenue 50 Interchange, \$2 million
 - CVAG signal Synchronization Phase 2, \$2.472 million
 - 2 percent PPM - \$425,480
 - Proposed programming in FY 2022/23
 - 2018 STIP carryover Project
 - I-15 French Valley Parkway Interchange, \$47.6 million programmed in FY 2020/21

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

- 1) Approve programming \$16,376,513 of 2020 State Transportation Improvement Program (STIP) Western Riverside County and Palo Verde Valley funding capacity and \$50 million made available from the STIP AB 3090 replacement placeholder for a total of \$66,376,513 to the State Route 71/State Route 91 (71/91) Direct Connector project, and forward to the California Transportation Commission (CTC);**
- 2) Include programming \$4,472,007 of 2020 STIP Coachella Valley funding capacity based on the project recommendation by the Coachella Valley Association of Governments (CVAG) and forward to the CTC;**

- 3) Include programming Planning, Programming, and Monitoring (PPM) funds (2 percent of STIP programming capacity) in the amount of \$425,480 in Fiscal Year 2022/23;
- 4) Submit the 2020 STIP submittal to CTC by the statutory deadline of December 15, 2019;
- 5) Forward the Riverside County 2020 STIP project recommendations to the Southern California Association of Governments (SCAG) to conduct regional performance measures analysis as required by the CTC STIP guidelines;
- 6) Approve Agreement No. 07-71-028-03, Amendment No. 3 to Agreement No. 07-71-028-00, with the city of Blythe (Blythe) to trade \$89,649 of Palo Verde Valley STIP funds with Measure A Western Riverside County Highway funds to facilitate delivery of local arterial projects;
- 7) Authorize the Executive Director, pursuant to legal counsel review, to execute Agreement No. 07-71-028-03 on behalf of the Commission upon CTC adoption of the 2020 STIP in March 2020; and
- 8) Authorize the Executive Director to seek and pursue competitive funding opportunities for the 71/91 Interchange project.

At this time, Chair Washington stated since Agenda Items 9 and 10 are receive and file, he requested the Commission go to Agenda Items Pulled from Consent Calendar for Discussion.

9. STATE AND FEDERAL LEGISLATIVE UPDATE

Jillian Guizado, Planning and Programming Manager, presented an update for the state and federal legislative activities, and bills that have been passed by the Legislature.

Receive and file an update on state and federal legislation.

10. STATE ROUTE 60 TRUCK LANES PROJECT UPDATE

Cheryl Donahue, Public Affairs Manager, announced this morning on State Route 60 between 9:00 a.m. and 2:30 p.m. heading east there would be one lane closed as Caltrans is doing a weed abatement program. She then presented an update for the SR-60 Truck Lanes project, highlighting the following:

- Improving Safety, relieving traffic:
 - Construction began in June
 - Current focus: excavation, drainage, wildlife crossings, dust control, and safety
 - \$113 million investment
- Roadway excavation:
 - Moving 2.1 million yards- about 15,000 per day

- Saving 14,000 truck trips
- Weekend closure, October 12-13
- For safety of passing motorists and crews – removal of giant rocks
- Delays no more than 30 minutes
- Drone footage was played of the work that was completed October 12-13
- Cleared hillside photo after those rocks were removed
- News coverage related to the October 12-13 closure
- Other outreach efforts
- Drainage systems:
 - Extending 123 drainage systems
 - Purpose is to collect, remove water from the roadway
 - Using 15,000 feet of pipe project-wide
- Wildlife Crossings:
 - Building two 20' x 20' wildlife crossings beneath SR-60
 - Will allow daylight to enter so that animals will use the crossings
- Dust control – Constructed two temporary water reservoirs
- Corridor safety – 55 mph speed limit; 24/7 CHP enforcement in project limits; speed feedback signs; citations doubled in construction area; and CHP, CalFire attending weekly meetings; regular communication
- Corridor collisions – Monitoring corridor safety data with CHP; one tragic collision caused two fatalities on September 5, due to reckless driving by another motorist; most collisions are causing no injuries or minor injuries; and CHP: slower speeds in corridor are helping reduce severity
- Stay connected

In regards to Commissioner Rusty Bailey's inquiry about having cameras on the wildlife corridors, Cheryl Donahue replied she is unsure if there will be cameras or not but she will ask.

Commissioner Bailey explained it would be a great public relations move to show the investment on why the Commission is doing this, which is the Commission appreciates the habitat and species. This could be a fun way to connect with the public on some of the good things the Commission is doing.

Commissioner Wes Speake clarified his company did the work for Caltrans on that project and the possibility as there is quite a bit of wildlife and if there was an opportunity to put up a camera there would be some really cool wildlife to see such as bob cats. He explained they did some corridor studies for Caltrans on Highway 138 that really showed a variety of wildlife.

In response to Commissioner Michael Vargas' request that the Commission do a simplified one-page notice with the closures on the weekends to post it on social media as opposed