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Chief Executive Officer

December 15, 2017

Ms. Susan Bransen
Executive Director
California Transportation Commission
1120 North Street
Mail Station 52, Room 2233
Sacramento, CA 95814

RE: 2018 Regional Transportation Improvement Program Submittal

Dear Ms. Bransen:

The Orange County Transportation Authority (OCTA) is pleased to submit the Regional Transportation Improvement Program (RTIP) for the 2018 State Transportation Improvement Program (STIP). The 2018 RTIP recommends \$267.873 million in STIP-Regional Improvement Program funds for seven projects covering fiscal years (FY) 2018-19 through 2022-23, and was approved for submittal by OCTA Board of Directors on September 11, 2017.

Consistent with the 2018 STIP fund estimate adopted by the California Transportation Commission on August 16, 2017, OCTA is proposing the following 2018 STIP program of projects:

- Interstate 5 (I-5) Improvement from State Route 73 to Oso Parkway (\$90.735 million),
- State Route 55 (SR-55) OC Central Corridor Improvement from Interstate 405 (I-405) to I-5 (\$80 million),
- I-5 Improvement from Alicia Parkway to El Toro Road (\$58.911 million),
- State Route 57 (SR-57) Truck Climbing Lane Phase I – Lambert Road Interchange Improvements (\$9 million),
- Planning, Programming, and Monitoring Funds (\$4.862 million)
- Advance Project Development Element (APDE) Project – I-5 Improvement from I-405 to SR-55 (\$20 million),
- APDE Project – SR-57 Truck Climbing Lane Phase II – from Lambert Road to County Line (\$4.05 million).

Additionally, OCTA is removing the 2016 STIP Project (I-5 high-occupancy vehicle lane addition from SR-55 to SR-57) from the 2018 STIP, and will alternatively fund the Project with federal Congestion Mitigation and Air Quality improvement funds.

Ms. Susan Bransen
December 15, 2017
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Please find the details for OCTA's submittal in the attached template that includes the required submittal information, or online at www.octa.net/STIP-RTIP.

If you have any questions regarding OCTA's RTIP submittal, please contact Kia Mortazavi, Executive Director, Planning, at (714) 560-5741.

Sincerely,



Darrell Johnson
Chief Executive Officer

DJ:bk
Attachments

c: Bruce De Terra, Caltrans
Ryan Chamberlain, Caltrans
Maria Lopez, SCAG

2018 ORANGE COUNTY REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM

DECEMBER 2017



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2018 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM (2018 RTIP)

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A. Overview and Schedule

Section 1. Executive Summary

The Orange County Transportation Authority (OCTA) 2018 RTIP recommends \$267.873 million in STIP-Regional Improvement Program (RIP) funds for seven projects for fiscal years (FY) 2018/2019 through FY 2022/2023.

Consistent with the 2018 STIP Guidelines, adopted by the California Transportation Commission (CTC) on August 16, 2017, the 2018 RTIP consists of four new projects and three 2016 RTIP carry-over projects.

Adjustments to Existing Projects

As part of the OCTA 2018 RTIP submittal, OCTA is requesting adjustments to the following projects which are carried forward from the 2016 STIP:

- Interstate 5 (I-5) Improvement Project from State Route 73 (SR-73) to Oso Parkway (Segment 1)(\$90.735 million in STIP)
 - Update schedule
 - Update funding
- SR-57 Truck Climbing Lane Phase I- Lambert Road Interchange Improvement (\$9 million in STIP)
 - Update schedule
 - Update funding
- Planning, Programming and Monitoring (\$5.177 million in STIP)
 - Update funding

Additional details regarding these requested adjustments are provided in the individual project programming requests for each project.

Removal of Existing Projects

OCTA is requesting the removal of the following project from the STIP:

- I-5 High Occupancy Vehicle (HOV) Lane from State Route 55 (SR-55) to State Route 57 (SR-57)
 - Remove STIP Funds (Project is being funded with CMAQ)

New Projects

OCTA is requesting to add four new projects:

- SR-55 OC Central Corridor Improvement from Interstate 405 (I-405) to I-5 (\$80 million in STIP)
- I-5 Improvement from Alicia Parkway to El Toro Road (\$58.911 million in STIP)
- APDE - I-5 Improvement from I-405 to SR-55 (\$20 million in STIP)
- APDE - SR-57 Truck Climbing Lane Phase II- from Lambert Road to County Line (\$4.05 million in STIP)

Section 2. General Information

- **Regional Agency Name**
Orange County Transportation Authority
- **Agency website links for RTIP and RTP.**

Regional Agency Website link: www.octa.net

RTIP document link: <http://www.octa.net/Projects-and-Programs/Funding-Programs/State-Funding/State-Transportation-Improvement-Program/>

RTP link: www.octa.net/lrtp/

- **Executive Director or Chief Executive Officer Contact Information**

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- **RTIP Staff Contact Information**

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- **California Transportation Commission (CTC) Staff Contact Information**

Name Susan Bransen Title Executive Director
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Email susan.bransen@catc.ca.gov
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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. Updated every 4 to 5 years, the RTP is developed through an extensive public participation

process in the region and reflects the unique mobility, sustainability, and air quality needs of each region.

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

OCTA is responsible for the development and programming of the STIP, which is submitted to the CTC for approval and adoption. OCTA dedicates STIP funds for use on projects of countywide significance, consistent with the OCTA Board of Directors (Board) adoption of the Capital Programming Policies, which includes Measure M2 freeway, commuter rail and fixed-guideway projects and planning/programming activities, and complementary activities which seek an equitable balance between freeways and transit capital and are consistent with state goals.

Projects were selected for funding based on OCTA's consideration of prior 2016 STIP projects, prior Board-approved funding commitments, project readiness, statewide goals for transportation, emission reduction per SB 375 (Chapter 728, Statutes 20080, and AB 32 (Chapter 488, Statutes 2006), freight mobility, consistency with STIP guidelines and performance measures. Projects are also consistent with the SCAG 2016-2040 RTP. OCTA further collaborated with Caltrans and local agencies to develop the OCTA 2018 RTIP submittal.

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

Project Name and Location	Description	Summary of Improvement/ Benefits
I-5/Route 74 Interchange Landscaping/Replacement Planting	The project replaced planting and installed landscaping associated with the I-5/SR-74 interchange project.	The project replaced planting and landscaping associated with the I-5/SR-74 interchange project.
I-5/Route 74 Interchange Improvements	On State Route 74 in San Juan Capistrano from I-5 to east of the city limit. Reconstruct the SR-74 and I-5 Interchange.	The project reconfigured the interchange to better accommodate existing and future traffic volumes and alleviate the congestion within the interchange area. The project created a total of 700 jobs, producing \$30 million in wages; Improved safety at the interchange and significantly reduced congestion-related accidents; reduced queued traffic leading to improved travel time through southern Orange County; improved access to jobs, housing, markets, and commerce; provided emission reductions; Improved level of service from 'F' to 'D'; and improved southbound I-5 traffic flow by reducing vehicle queues that spill back on the freeway.
Widen Route 91 - Route 55 to Weir Canyon Road	In Anaheim, widen one lane in each direction from SR-55 (Lakeview Avenue) to Weir Canyon Road.	The project provided mid-term capacity enhancements for SR-91 and improved operational characteristics, such as weaving and lane efficiency at ramp junctions; reduced the amount of traffic using parallel arterials, especially on La Palma Avenue and Santa Ana Canyon Road, thus helping to reduce congestion on local streets. The project reduced travel time by 15 minutes during peak periods within the project limits. The LOS was improved from F to D.
Route 91 Widening - Route 55 connector to Weir Canyon Replacement Planting/Landscaping	The project replaced planting and installed landscaping associated with the Widen Route 91 - Route 55 to Weir Canyon Road project.	The project replaced planting and installed landscaping associated with the Widen Route 91 - Route 55 to Weir Canyon Road project.
Interstate 5 Add 1 High Occupancy Vehicle from South of Avenida Vista Hermosa to South of Pacific Coast Highway	On Interstate 5 add 1 HOV in each direction from South of Avenida Vista Hermosa to South of Pacific Coast Highway and interchange Improvement	The project increased freeway capacity and reduced congestion in the San Clemente area. The project created a total of 1,060 jobs, producing \$45 million in wages; Improved safety and significantly reduced congestion-related accidents; Reduced queued traffic leading to improved travel time through southern Orange County; Improved access to jobs, housing, markets, and commerce; and provided emission reductions
Anaheim Regional Transportation Intermodal Center (ARTIC)	ARTIC is located in the City of Anaheim. The project includes transit center, associated infrastructure, commercial mixed use and transit supporting facilities for Metrolink, AMTRAK, OCTA fixed route bus, OCTA Bus Rapid Transit, Anaheim Resort transit shuttle/circulators, "fly-away" type airport shuttles, private tourism buses, taxi, and others.	The project provides additional capacity for Metrolink passengers. It's a regional transportation hub for future high-speed rail service and connections to local transit service to downtown and resort areas. The facility improves mobility and benefits air quality within the region by increasing the capacity of the transit infrastructure while promoting the efficient use of the existing transportation infrastructure and access to public transportation.

Section 5. RTIP Outreach and Participation

A. RTIP Development and Approval Schedule

Action	Date
CTC adopts Fund Estimate and Guidelines	August 16, 2017
OCTA adopts 2018 RTIP	September 11, 2017
Caltrans identifies State Highway Needs	September 15, 2017
OCTA submit RTIP to CTC	December 15, 2017
CTC STIP Hearing, South	January 25, 2018
CTC STIP Hearing, North	February 1, 2018
CTC publishes staff recommendations	February 28, 2018
CTC Adopts 2018 STIP	March 21-22, 2018

B. Public Participation/Project Selection Process

- September 15, 2014 – Final 2014 Long- Range Transportation Plan presented to Regional Planning and Highways Committee
- September 22, 2014 - Final 2014 Long- Range Transportation Plan presented to OCTA Board of Directors
- April 7, 2016 – Southern California Association of Governments Regional Council adopts the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy
- November 14, 2016 - Measure M2 Delivery Plan - Next 10 presented to OCTA Board of Directors
- August 7, 2017 – 2018 STIP Overview presented to Regional Planning and Highways Committee
- August 14, 2017 - 2018 STIP Overview presented to OCTA Board of Directors
- September 7, 2017 – Proposed 2018 STIP submittal presented to Regional Planning and Highways Committee
- September 11, 2017 - Proposed 2018 STIP submittal presented to OCTA Board of Directors

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

Caltrans District: 12

- July 24, 2017 - OCTA staff presented 2018 STIP recommendations to Caltrans District 12.
- August 9, 2017 – OCTA staff presented revised 2018 STIP recommendations to Caltrans District 12
- August 9, 2017 to September 7, 2017 – OCTA staff and Caltrans staff discussed modifications and changes to the 2018 STIP.

2018 STIP Regional Funding Request

Section 6. 2018 STIP Regional Share and Request for Programming

A. 2018 Regional Fund Share Per 2018 STIP Fund Estimate

Project Name and Location	Requested RIP Amount
I-5 Improvement from SR-73 to Oso Parkway	\$90,735,000
SR-55 OC Central Corridor Improvement from I-405 to I-5	\$80,000,000
I-5 Improvement from Alicia Parkway to El Toro Road	\$58,911,000
SR-57 Truck Climbing Lane Phase I- Lambert Road Interchange Improvements	\$9,000,000
PPM	\$5,177,000
APDE – I-5 Improvement from I-405 to SR-55	\$20,000,000
APDE - SR-57 Truck Climbing Lane Phase II- from Lambert Road to County Line	\$4,050,000
Total STIP	\$267,873,000

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

Funding Plan for 2018 STIP Recommended Projects

Proposed 2018 STIP (In Thousands)	STIP Funding					Total STIP	Other Funding			Total Project Cost
	2018-19	2019-20	2020-21	2021-22	2022-23		STBG/ CMAQ	M2 ¹	Other ²	
I-5 Improvement from SR-73 to Oso Parkway (Segment 1) ^{3,4}	90,735					90,735	17,399	65,216	17,166	190,516
SR-55 OC Central Corridor Improvement from I-405 to I-5 ⁵			80,000			80,000	103,805	105,327	121,800	410,932
I-5 Improvement from Alicia Parkway to El Toro Road (Segment 3) ⁵		58,911				58,911	49,897	57,715		166,523
SR-57 Truck Climbing Lane Phase I - Lambert Road Interchange Improvements ³		9,000				9,000		6,500	29,650	45,150
PPM ³	1,481			1,848	1,848	5,177				5,177
I-5 HOV Lane SR-55 to SR-57 ⁶						-				
STIP Subtotal	92,216	67,911	80,000	1,848	1,848	243,823	171,101	234,758	168,616	818,298
APDE										
I-5 Improvement from I-405 to SR-55 ⁵					20,000	20,000	8,000	5,000		33,000
APDE										
SR-57 Truck Climbing Lane Phase II- from Lambert Road to County Line ⁵					4,050	4,050		250		4,300
Totals	92,216	67,911	80,000	1,848	25,898	267,873	179,101	240,008	168,616	855,598

1. M2 is approved Comprehensive Transportation Funding Program funding

2. Other funds include \$17,166 million in Local Partnership Program, \$46.8 million in State Highway Operations and Protection Program, \$75 million in Solutions for Congested Corridors Program, \$0.7 million in Demonstration Funds, \$9.95 in Local City Funds and \$20 million in Trade Corridors Enhancement Program

3. Carried over or partially carried over from 2016 STIP

4. \$12,705 million STIP increase

5. New 2018 STIP project

6. Removed from 2018 STIP

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.

The Draft 2018 ITIP proposes carrying over \$3 million in ITIP funding for the Laguna Niguel to San Juan Capistrano Passing Siding project in FY 2018-19. OCTA plans to request an allocation of these funds at the March 2018 CTC meeting.

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

STIP Project	Projects within the Corridor	Status	Notes
<p>I-5 Improvement from SR-73 to Oso Parkway (Segment 1)</p> <p>Start Construction: October 2019 Complete Construction: January 2024</p>	<p>I-5 Improvement from Oso Parkway to Alicia Parkway (Segment 2)</p>	<p>Start Construction: January 2019 Complete Construction: August 2023</p>	<p>I-5 Improvement from the SR-73 to El Toro is divided into three Segments. Segments 1 and 3 are STIP projects. All three segments will be designed and constructed concurrently.</p>
	<p>I-5 Improvement from Alicia Parkway to El Toro Road (Segment 3)</p>	<p>Start Construction: January 2020 Complete Construction: January 2024</p>	<p>I-5 Improvement from the SR-73 to El Toro is divided into three Segments. Segments 1 and 3 are STIP projects. All three segments will be designed and constructed concurrently.</p>
	<p>I-5 SR-55 to SR-57</p>	<p>Start Construction February 2018 Complete Construction: February 2020</p>	<p>Construction may overlap for approximately nine months. October 2019 to June 2020. Project is several miles south.</p>
	<p>Laguna Niguel/ Mission Viejo Station ADA Ramps</p>	<p>Construction Complete: September 2017</p>	<p>No Impact. Project is completed.</p>
	<p>San Juan Capistrano/ Laguna Niguel Passing Siding</p>	<p>Start Construction: July 2018 Complete Construction: July 2020</p>	<p>No impact. This is a rail project.</p>
<p>SR-55 OC Central Corridor Improvement from I-405 to I-5</p> <p>Start Construction: January 2021 Complete Construction December 2023</p>	<p>I-5 from SR-55 to SR-57</p>	<p>Start Construction February 2018 Complete Construction: February 2020</p>	<p>No impact. No construction overlap.</p>
<p>I-5 Improvement from Alicia Parkway to El</p>	<p>I-5 Improvement from SR-73 to Oso Parkway (Segment 1)</p>	<p>Start Construction: January 2019 Complete Construction: August 2023</p>	<p>I-5 Improvement from the SR-73 to El Toro is divided into three Segments. Segments 1 and 3 are STIP projects. All three segments</p>

<p>Toro Road (Segment 3)</p> <p>Start Construction: November 2019 Complete Construction: September 2023</p>			will be designed and constructed concurrently.
	I-5 Improvement from Oso Parkway to Alicia Parkway (Segment 2)	Start Construction: January 2020 Complete Construction: January 2024	I-5 Improvement from the SR-73 to El Toro is divided into three Segments. Segments 1 and 3 are STIP projects. All three segments will be designed and constructed concurrently.
	I-5 from SR-55 to SR-57	Start Construction February 2018 Complete Construction: February 2020	No impact. No construction overlap.
	Laguna Niguel/ Mission Viejo Station ADA Ramps	Construction Complete: September 2017	No Impact. Project is completed.
	San Juan Capistrano/ Laguna Niguel Passing Siding	Start Construction: July 2018 Complete Construction: July 2020	No impact. This is a rail project.
<p>SR-57 Truck Climbing Lane Phase I- Lambert Rd Interchange Improvements</p> <p>Start Construction January 2019 Complete Construction: September 2023</p>	SR-57 Truck Climbing Lane Phase II- from Lambert Road to County Line	Start Construction April 2025 Complete Construction: April 2028	No impact. No construction overlap.
	SR-57 between Orangethorpe and Lambert Replacement Planting	Start Construction February 2018 Complete Construction: March 2019	Construction may overlap for approximately two months. January 2019 to March 2019.
ITIP Project	Projects within the Corridor	Status	Notes
<p>Laguna Niguel to San Juan Capistrano Passing Siding</p> <p>Start Construction: July 2018 Complete</p>	I-5 Widening SR-73 to Oso Parkway (Segment 1)	Start Construction October 2019 Complete Construction: January 2024	No impact the passing siding is a rail project
	I-5 Widening Oso Parkway to Alicia	In Progress - PS&E	No impact the passing siding is a rail project

Construction: July 2020	Parkway (Segment 2)		
	I-5 Widening Alicia Parkway to El Toro Road (Segment 3)	In Progress - PS&E	No impact the passing siding is a rail project

Caltrans has reviewed the list of State Highway Operation and Protection Program projects and did not find any impacts with the 2018 STIP projects.

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

Section 10. Regional Level Performance Evaluation (per Section 19A of the guidelines)

A. Regional Level Performance Indicators and Measures

2016 RTP/SCS Goals

1. Align the plan investments and policies with improving regional economic development and competitiveness.
2. Maximize mobility and accessibility for all people and goods in the region.
3. Ensure travel safety and reliability for all people and goods in the region.
4. Preserve and ensure a sustainable regional transportation system.
5. Maximize the productivity of our transportation system.
6. Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).
7. Actively encourage and create incentives for energy efficiency, where possible.
8. Encourage land use and growth patterns that facilitate transit and active transportation.
9. Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.

The table below summarizes the consistency between projects in the RTIP and the 2016 RTP/SCS Goals and Performance Outcomes. The project benefits listed in the table below come from the benefit-cost analysis conducted for each project. Because the purpose of the table is to demonstrate consistency with the RTP/SCS Goals and Performance Outcomes, not all project benefits are listed in the table. BCA ratios for all projects are over 1.0. All projects are located in high traffic regional facilities that serve the general public including low income and minority communities, consistent with the 2016 RTP/SCS Environmental Justice performance Measures. In addition, all projects are included in the 2016 RTP/SCS project lists further demonstrates consistency of the RTIP with the RTP.

2018 RTIP Projects and 2016 RTP/SCS Goals and Performance Outcomes: Consistency by Project			
2016 RTP/SCS Goal Corresponding Performance Measures	I-5 Improvement from SR-73 to Oso Parkway	SR-55 OC Central Corridor Improvement from I-405 to I-5	I-5 Improvement from Alicia Parkway to El Toro Road
Location Efficiency <i>To measure progress in meeting 2016 RTP/SCS Goal 8</i>	\$75.4 million Average Annual Travel Time Savings	\$42.6 million Average Annual Travel Time Savings	\$119.2 million Average Annual Travel Time Savings
Mobility and Accessibility <i>To measure progress in meeting 2016 RTP/SCS Goals 2, 5 and 8.</i>	9,884,873 Average Annual Person Hours of Time Saved	4,714,590 Average Annual Person Hours of Time Saved	14,043,587 Average Annual Person Hours of Time Saved
Safety and Health <i>To measure progress in meeting 2016 RTP/SCS Goals 3, 6 and 9.</i>	\$25.7 million 20-Year Accident Cost Savings	\$2.9 million 20-Year Accident Cost Savings	\$5.5 million 20-Year Accident Cost Savings
Environmental Quality <i>To measure progress in meeting 2016 RTP/SCS Goals 6 and 7.</i>	732,596 CO2 Emissions Saved (tons)	N/A	68,316 CO2 Emissions Saved (tons)
Economic Opportunity <i>To measure progress in meeting 2016 RTP/SCS Goals 1 and 5.</i>	2,021 Jobs Created	2,614 Jobs Created	1,792 Jobs Created
Investment Effectiveness <i>To measure progress in meeting 2016 RTP/SCS Goal 1.</i>	Benefit/ Cost Ratio 9.6	Benefit/ Cost Ratio 1.9	Benefit/ Cost Ratio 17.5
Transportation System Sustainability <i>To measure progress in meeting 2016 RTP/SCS Goal 4.</i>	The STIP does not impact asset conditions in this cycle	The STIP does not impact asset conditions in this cycle	The STIP does not impact asset conditions in this cycle
Environmental Justice <i>To measure progress in meeting 2016 RTP/SCS Goal 6.</i>	Meets federal requirements. No unaddressed disproportionately high and adverse effects for low income or minority communities.	Meets federal requirements. No unaddressed disproportionately high and adverse effects for low income or minority communities.	Meets federal requirements. No unaddressed disproportionately high and adverse effects for low income or minority communities.

Section 11. Regional and Statewide Benefits of RTIP

The SCAG region's 2018 STIP is estimated to produce a combined total life-cycle benefits of \$2,419.7 billion at a total life-cycle cost of \$602.9 million (benefit/cost ratio of 4.01).

Project benefits for all projects combined (New + Carry-Over) over 20-years include:

Travel Time Savings: \$2,516.4 billion

Veh. Op. Cost savings: \$-366.3 million

Accident Cost Savings: \$188.9 million

Emission Cost Savings: \$80.7 million

D. Performance and Effectiveness of RTIP

Section 12. Evaluation of Cost Effectiveness of RTIP (Required per Section 19)

2018 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 2018 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 2018 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 2018 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;
- Safety improvements; and
- Reductions in vehicle operating costs

For these categories, SCAG’s travel demand model results are used to estimate the benefits of the 2018 STIP *Build* planning scenario compared with the *No Build* planning scenario. Model data for the 2018 STIP were summarized in one mile per hour (1-mph) speed bins to facilitate analysis. Consistent with the overall STIP performance evaluation, benefits associated with SCAG’s 2016RTP/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 2018 STIP provides a regional network-level benefit/cost ratio of 4.01. Benefits and costs are estimated over the planning period from 2016 through 2040.

INVESTMENT ANALYSIS SUMMARY RESULTS			
Life-Cycle Costs (mil. \$)	\$602.9		
Life-Cycle Benefits (mil. \$)	\$2,419.7		
Net Present Value (mil. \$)	\$1,816.8		
Benefit / Cost Ratio:	4.01		
Rate of Return on Investment:	N/A		
Payback Period:	N/A		
ITEMIZED BENEFITS (mil. \$)		Total Over	Average
		20 Years	Annual
Travel Time Savings		\$2,516.4	\$125.8
Veh. Op. Cost Savings		-\$366.3	-\$18.3
Accident Cost Savings		\$188.9	\$9.4
Emission Cost Savings		\$80.7	\$4.0
TOTAL BENEFITS		\$2,419.7	\$121.0

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 0.019 miles per day, which is less than one-tenth of a percent.

Percent of congested VMT at or below 35 mph

Impacts are projected to reduce congested VMT by 3.0 percent.

Commute mode share (travel to work or school)

Impacts are expected to reduce the percentage of drive alone trips to work by 0.04% with no increase in drive alone trips to colleges or universities.

Asset Conditions (State Highway and Local Streets)

Based on the 2013 Pavement Condition Survey, almost 20 percent of the State Highway System (SHS) lane miles are in some form of distress (i.e., major distress, minor distress, or poor ride). The average Pavement Condition Index (PCI) for the region's local roads is 69. 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

SCAG's analysis projects that fatalities per million persons per day will decline from 0.26 to 0.25 and injuries will be reduced from 13.06 to 12.96 per million persons per day. Fatalities and injuries per million VMT will remain relatively unchanged at 0.01 and 0.53 respectively.

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

Impacts are projected to increase the percentage of housing within 0.5 miles of frequent transit service area by 0.07%. The percentage of jobs within 0.5 miles are projected to increase 0.38%.

Mean commute travel time (to work or school)

Impacts are projected to reduce mean work commute travel time by 0.05 minutes for automobiles and increase mean work commute time by transit by 0.03 minutes for transit. Impacts are also projected to increase mean school commute travel times by 0.01 minutes for automobiles and by 0.05 minutes for transit.

Change in acres of agricultural land

Not applicable

GHG Impacts

Impacts are not projected to change daily CO2 emissions/capita. 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		Increase in VMT per capita = 0.019 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)	Travel to Work	Travel to School	Travel to Work	Travel to School
	Vehicle Trips Drive Alone	71.71%	8.46%	Reduction of 0.04%	0%
	Vehicle Trips 2 Person Carpool	3.69%	-8.24%	0%	0%
	Vehicle Trips 3+ Person Carpool	2.32%	10.26%	0%	0%
	Auto Passenger Trips	9.51%	40.45%	0%	0%
	Transit Trips	7.83%	4.88%	Increase of 0.03%	Increase of 0.01%
Non-Motorized Person Trips	4.94%	27.71%	Increase of 0.01%	Reduction of 0.01%	
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)	Fatalities per million persons = 0.26 Injuries per million persons = 11.97		No Reduction in Fatalities per million persons No Reduction in Injuries per million persons	
	Reduce fatalities and serious injuries per VMT	Daily Fatalities per million VMT = 0.01 Daily Injuries per million VMT = 0.52		No Reduction in Fatalities per million VMT No Reduction in Injuries per million VMT	
Economic Vitality	Increase percent of housing and jobs within 0.5 miles of transit stops with frequent transit service	Household % = 44.15% Jobs % = 52.64%		Household % = Increase of 0.07% Jobs % = Increase of 0.38%	
	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)	9.78 lbs		Daily Reduction per capita = 0.00 lbs	

Table B3 Evaluation – Project Changes or Increased Capacity Benefits				
Project Type Or Mode	Changes to Built Environment	Indicator / Measure	Benefits Improvement at Project Completion	Benefits Improvement at Project Completion (APDE projects)
State Highway	New general purpose lane-miles	Miles	12.7	18
	New HOV/HOT lane-miles	Miles	8.7	
	New Auxiliary Lane	Miles	6.2	18
	Truck Climb Lane	Miles		0.5
	Operational improvements	Miles	1	
Local Streets and Roads	Modify Interchange	Miles		0.5

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

Each RTIP shall include a project specific benefit evaluation for each new project proposed that estimates its benefits to the regional system from changes to the built environment, including, but limited to the items listed on page 10 of the 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.

The project level benefit evaluation shall include a Caltrans generated benefit/cost estimate, including life cycle costs for projects proposed in the ITIP. For the RTIP, the regions may choose between the Caltrans estimate and their own estimate (explain why the Caltrans estimate was not used). The project level benefit evaluation must explain how the project is consistent with Executive Order B-30-15 (Climate Change).

Benefits for projects in the 2018 STIP were examined using updated project information and new data. The benefit/cost ratio provides positive benefits and are estimated to produce total life-cycle benefits of \$5.228.6 billion and life-cycle costs of \$746.9 million (Benefit/Cost Ratio of 7.0). A breakdown of benefits and cost by project is listed below:

	I-5 Improvement from SR-73 to Oso Parkway (Seg 1)	SR-55 OC Central Corridor Improvement from I-405 to I-5	I-5 Improvement from Alicia Parkway to El Toro Road (Seg 3)
Life-Cycle Costs (mil.\$)	\$176.3	\$414.0	\$156.6
Life-Cycle Benefits (mil.\$)	\$1,694.0	\$798.3	\$2,736.3
Net Present Value (mil.\$)	\$1,517.7	\$384.2	\$2,579.7
Benefit/Cost Ratio	9.6	1.9	17.5

These projects are consistent with the Goals of the RTP and SCS because they overall reduce travel time and CO2 Greenhouse Gas (GHG) emissions (see section 11 for additional information). The two new proposed projects are also estimated overall to reduce travel time and CO2 Greenhouse Gas (GHG) emissions (see section 14 for more information on these two projects). Section 10 also contains additional information.

E. Detailed Project Information

Section 14. Overview of Projects Programmed with RIP Funding

Interstate 5 (I-5) Improvement from State Route 73 (SR-73) (Segment 1) to Oso Parkway

I-5 Improvement project will add one general purpose lane in each direction from SR-73 to Oso Parkway, provide operational improvements, and reconstruct the interchange at Avery Parkway. This is Project C in the Next 10 Plan.

Under current traffic conditions, substantial congestion is experienced, and this project will help alleviate congestion and provide air quality benefits. The project is requesting approval of an additional \$12.705 million in State Transportation Improvement Program (STIP), and the total project cost is \$190.516 million.

State Route 55 (SR-55) OC Central Corridor Improvement from Interstate 405 (I-405) to I-5 – New STIP Project

This project will add new high-occupancy vehicle (HOV), general purpose and auxiliary lanes on SR-55 between the I-405 and the I-5 connectors, to increase freeway capacity and reduce congestion in central Orange County areas. The project is located in the cities of Santa Ana, Irvine, and Tustin.

Future traffic demand is anticipated to increase traffic volumes to levels which will increase traffic congestion, increase travel delays, and reduce travel speeds. It is anticipated that without

additional major capital improvements, the level of service for the majority of the study area in the northbound and southbound directions would be unacceptable during AM and PM peak periods. The project is requesting approval of \$80 million in STIP, and the total project cost is \$410.932 million.

I-5 Improvement from Alicia Parkway to El Toro Road (Segment 3) - New STIP Project

The project will add one general purpose lane on the I-5 in each direction between Alicia Parkway and El Toro Road (approximately 1.7 miles), extend the second HOV lane in both directions, and add auxiliary lanes where needed. The additional lane will increase capacity and improve mainline congestion on I-5 from Alicia Parkway and El Toro Road. This is Project C in the Next 10 Plan.

Under current traffic conditions, substantial congestion is experienced, and this project will help alleviate congestion and provide air quality benefits. The project is requesting approval of \$58.911 million in STIP, and the total project cost is \$166.523 million.

State Route 57 (SR-57) Truck Climbing Lane Phase I – Lambert Road Interchange Improvements

Project work consists of reconfiguration of the northbound ramps, including construction of a loop on-ramp at the southeast quadrant, realignment of the southbound ramps, as well as adding a fourth approach lane along the southbound off-ramp, and widen the south side of Lambert Road to provide dual exclusive eastbound right turn lanes into the southbound on-ramp.

The SR-57 Lambert Road interchange is presently characterized by poor operational performance during peak traffic periods, and operational performance will further deteriorate with increase in anticipated future traffic volumes. The purpose of this project is to provide additional capacity and improve overall operational performance of the interchange. The proposed alternates should help mitigate the current congestion and better accommodate anticipated future traffic increases, thereby minimizing delays and potential safety hazards. Additionally, the corridor experiences a high amount of truck traffic, and these improvements will help improve truck travel speeds. The project is an existing 2016 STIP project.

Planning, Programming, and Monitoring (PPM)

Orange County is impacted by severe congestion on many regional and interregional facilities. Examination of the problem and potential solutions are necessary for the future construction of improvements. PPM funds will be used to develop project study reports and provide environmental clearance for projects, thus creating a shelf of projects for the future.

The PPM will support consultants and staff in developing the Long-Range Transportation Plan and multimodal strategies to address the short and long-term transportation needs for Orange County and regional connections, and to guide the expenditure of federal, state, and local transportation funds.

I-5 Improvement from I-405 to SR-55 – Advance Project Development Element

This project will add one general purpose lane in both directions of the I-5 from the I-405 to SR-55. Additional features of the project include improvements to various interchanges. Auxiliary lanes will be added in some segments and re-established in others within the project limits. The

overall project length is approximately nine miles.

Currently, this segment of the I-5 corridor is experiencing congestion and long traffic delays due to demand exceeding capacity, primarily resulting from local, regional, and interregional traffic demand. In addition, forecasted local and regional traffic demand is expected to increase by over 10,000 vehicles per day by the year 2040. This is Project B in the Next 10 Plan. The project is requesting approval of \$20 million in STIP, and the total cost for the PPM is \$33 million.

SR-57 Truck Climbing Lane Phase II – from Lambert Road to County Line - Advance Project Development Element

STIP funding is proposed for the project approval and environmental document phase of this project that will construct a truck climbing lane on the SR-57 from the Lambert Road undercrossing to just north of the Orange County/Los Angeles County line. A climbing lane would improve truck traffic travel speeds and would increase the throughput of the northbound SR-57. This project is Project G in the Next 10 Plan. The project is requesting approval of \$4.05 million in STIP, and the total cost for the project approval and environmental phase is \$4.3 million.

OCTA 2018 State Transportation Improvement Program

Proposed Projects

