MEETING NOTICE
AND AGENDA

SAN DIEGO REGION CONFORMITY WORKING GROUP
The San Diego Region Conformity Working Group may take action on any item appearing on this agenda.

Wednesday, June 6, 2018
10:30 a.m. to 12 noon
SANDAG, Board Room
401 B Street, Suite 800
San Diego, CA 92101

Please take the elevator to the 8th floor to access the meeting room.

Staff Contact: Rachel Kennedy
(619) 699-1929
rachel.kennedy@sandag.org

AGENDA HIGHLIGHTS

• DRAFT 2018 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM: REGIONAL EMISSIONS ANALYSIS AND MODELING

• DESIGNATIONS FOR THE 2015 NATIONAL AMBIENT AIR QUALITY STANDARDS OZONE STANDARDS

If you would like to participate via conference call, please call (888) 204-5987. The conference call passcode is 6838699#.

PLEASE SILENCE ALL ELECTRONIC DEVICES DURING THE MEETING

MISSION STATEMENT
The 18 cities and county government are SANDAG serving as the forum for regional decision-making. SANDAG builds consensus; makes strategic plans; obtains and allocates resources; plans, engineers, and builds public transit; and provides information on a broad range of topics pertinent to the region’s quality of life.
Welcome to SANDAG. Members of the public may speak to the Working Group on any item at the time the Working Group is considering the item. Please complete a Request to Comment form and then present the form to the Working Group coordinator. Members of the public may address the Working Group on any issue under the agenda item entitled Public Comments/Communications/Member Comments. Public speakers are limited to three minutes or less per person unless otherwise directed by the Chair. The Working Group may take action on any item appearing on the agenda.

Both agenda and non-agenda comments should be sent to SANDAG via comment@sandag.org. Please include the Working Group name and meeting date, agenda item, your name, and your organization. Any comments, handouts, presentations, or other materials from the public intended for distribution at the Working Group meeting should be received by the Working Group coordinator no later than 12 noon, two working days prior to the meeting. All public comments and materials received by the deadline become part of the official project record, will be provided to the members for their review at the meeting, and will be posted to the agenda file as a part of the handouts following each meeting.

In order to keep the public informed in an efficient manner and facilitate public participation, SANDAG also provides access to all agenda and meeting materials online at www.sandag.org/meetings. Additionally, interested persons can sign up for e-notifications via our e-distribution list either at the SANDAG website or by sending an email request to webmaster@sandag.org.

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请在会议前至少72小时打电话(619) 699-1900 提出请求。

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**SAN DIEGO REGION CONFORMITY WORKING GROUP**

**Wednesday, June 6, 2018**

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>INTRODUCTIONS</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2.</td>
<td>MEETING MINUTES</td>
<td>INFORMATION</td>
</tr>
</tbody>
</table>

The San Diego Region Conformity Working Group (CWG) is asked to review the minutes from its April 4, 2018, meeting.

| 3.     | PUBLIC COMMENTS/COMMUNICATIONS/MEMBER COMMENTS | DISCUSSION |

Members of the public shall have the opportunity to address the CWG on any issue within the jurisdiction of SANDAG that is not on this agenda. Anyone desiring to speak shall reserve time by completing a “Request to Speak” form and giving it to the meeting coordinator prior to speaking. Public speakers should notify the meeting coordinator if they have a handout for distribution to CWG members. Public speakers are limited to three minutes or less per person. CWG members also may provide information and announcements under this agenda item.

**REPORTS**

+4. DRAFT 2018 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM: REGIONAL EMISSIONS ANALYSIS AND MODELING

+4A. On March 29, 2018, an initial set of non-capacity increasing projects were distributed to the CWG for interagency consultation. Since that time, additional non-capacity increasing projects have been submitted for inclusion in the 2018 RTIP. Project PORT03 is included for programming purposes only. The CWG is asked to discuss these projects.

+4B. Staff will provide an overview of the Draft 2018 Regional Transportation Improvement Program: Regional Emissions Analysis and Modeling Procedures, which was distributed to the CWG for a 30-day review on May 18, 2018. The CWG is asked to review and provide feedback.

+5. DESIGNATIONS FOR THE 2015 NATIONAL AMBIENT AIR QUALITY STANDARDS OZONE STANDARDS

On April 30, 2018, the U.S. Environmental Protection Agency (EPA) Administrator signed the final rule notice for Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards (NAAQS). The rule establishes initial air quality designations for the 2015 primary and secondary NAAQS for ozone. The San Diego air basin is designated non-attainment for the 2015 ozone standard with a classification of moderate. U.S. EPA staff will provide an overview of the rule.
6. **EMFAC2017 DEVELOPMENT**

   On December 22, 2017, the California Air Resources Board (ARB) released EMFAC2017 v 1.0.1 for public use and is scheduled to submit EMFAC2017 to the U.S. Environmental Protection Agency (EPA) for approval in spring 2018. ARB and U.S. EPA staff will provide an update on the timeline for submittal and approval.

+7. **DISTRICT OF COLUMBIA CIRCUIT COURT RULING: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT V U.S. ENVIRONMENTAL PROTECTION AGENCY**

   On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit decided a case South Coast Air District v U.S. Environmental Protection Agency (EPA). The decision covers multiple topics including the revocation of the 1997 ozone standard and associated conformity requirements. On April 23, 2018, U.S. EPA applied for a re-hearing and U.S. Department of Transportation issues interim guidance.

8. **OTHER BUSINESS**

9. **NEXT MEETING**

   The next CWG meeting is scheduled for Wednesday, August 1, 2018, at 10:30 a.m.

10. **ADJOURNMENT**

+ next to an item indicates an attachment
Rachel Kennedy, Senior Regional Planner, called the meeting of the San Diego Region Conformity Working Group (CWG) to order at 10:35 a.m.

1. WELCOME AND INTRODUCTIONS

Self-introductions were made. An attendance list is included.

2. MEETING MINUTES (INFORMATION)

Ms. Kennedy asked the CWG to review the minutes from its March 7, 2018, meeting. No comments or corrections were made.

3. PUBLIC COMMENTS/COMMUNICATIONS/MEMBER COMMENTS

No public comments were made.

REPORTS

4. SANDAG 2018 TITLE VI PROGRAM: WORKING GROUP SURVEY (INFORMATION)

Sam Sanford, Associate Regional Planner, announced an online voluntary and anonymous survey to inform the development of the SANDAG Metropolitan Planning Organization Title VI Report. This report is a requirement of the Federal Transit Administration and is updated every three years. CWG members were invited to participate in the online survey.

5. 2018 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM: DRAFT PROJECT LIST (DISCUSSION)

Sue Alpert, Associate Project Control Analyst, provided a review of the draft list of projects in the 2018 Regional Transportation Improvement Program (RTIP). The draft 2018 RTIP includes approximately 63 capacity-increasing projects and 377 non-capacity-increasing projects. Of those, 29 projects are new and 126 are being closed out or delayed. The draft project list was sent to the CWG on March 19, 2018, for review. CWG members are asked to review the projects and provide any feedback by April 13, 2018. Coding of the projects in the model and subsequent model runs are anticipated to conclude by the end of April. The draft conformity analysis is scheduled for 30-day public review from May 18, 2018, to June 18, 2018. The draft conformity analysis will be discussed at the June 6, 2018, CWG meeting.
Ms. Kennedy added that this presents an opportunity for CWG members to review and comment on the exempt category of the non-capacity-increasing projects and the capacity-increasing projects included in the draft 2018 RTIP.

6. SAN DIEGO REGION CARBON MONOXIDE MAINTENANCE PERIOD (INFORMATION)

Ms. Kennedy summarized a letter from the U.S. Environmental Protection Agency (U.S. EPA) regarding carbon monoxide (CO) maintenance requirements. Planning documents adopted after June 30, 2018, will not need to include CO conformity analysis. The 2018 RTIP is anticipated to be adopted in September 2018, and therefore will not include CO conformity analysis. John Kelly, U.S. EPA, concurred with the summary and added that provisions in the State Implementation Plan regarding CO will remain in effect.

7. DISTRICT OF COLUMBIA CIRCUIT COURT RULING: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT VERSUS U.S. ENVIRONMENTAL PROTECTION AGENCY (DISCUSSION)

Mr. Kelly and Nick Cormier, San Diego Air Pollution Control District (APCD), provided background information and an overview of the court ruling. The ruling removes the ability to use the 2012 ozone standard as the baseline year for showing reasonable further progress as part of an ozone attainment plan. The San Diego APCD used the 2012 standard, and may need to use the 2011 standard for their next plan update. The U.S. EPA has until April 16, 2018, to decide to appeal the decision.

Stephanie Parent, Air Resources Board (ARB), added that ARB is evaluating the idea of using a statewide approach to support the affected Air Pollution Control Districts in California.

8. ADJOURNMENT AND NEXT MEETING (INFORMATION)

The next CWG meeting is scheduled for May 2, 2018, at 10:30 a.m.

Ms. Kennedy adjourned the meeting at 11:02 a.m.
## SAN DIEGO REGION CONFORMITY WORKING GROUP
### MEETING ATTENDANCE FOR APRIL 4, 2018

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<tr>
<th>Name</th>
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<tr>
<td>Shannon Hatcher (phone)</td>
<td>Air Resources Board</td>
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<tr>
<td>Stephanie Parent (phone)</td>
<td>Air Resources Board</td>
</tr>
<tr>
<td>Lucas Sanchez (phone)</td>
<td>Caltrans</td>
</tr>
<tr>
<td>Ilene Gallo (phone)</td>
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<tr>
<td>Ken Johanssen</td>
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<tr>
<td>Melina Pereira (phone)</td>
<td>Caltrans District 11</td>
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<tr>
<td>John Kelly (phone)</td>
<td>U.S. Environmental Protection Agency</td>
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<tr>
<td>Nick Cormier (phone)</td>
<td>San Diego Air Pollution Control District</td>
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<tr>
<td>Sue Alpert</td>
<td>SANDAG</td>
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<tr>
<td>Rachel Kennedy</td>
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<tr>
<td>Sam Sanford</td>
<td>SANDAG</td>
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<tr>
<td>Michelle Smith</td>
<td>SANDAG</td>
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### Table 1
2018 Regional Transportation Improvement Program
San Diego Region (in $000s)

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<tr>
<th>MPO ID: CAL503</th>
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<tr>
<td>Project Title: Advanced Technology Corridors at Border Ports of Entry Pilot Project</td>
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<tr>
<td>Project Description: Various - In San Diego County and Imperial County on various routes at various locations, Install Intelligent Technology Statewide Border Wait Time System, Implement a fiber optic cable network to facilitate an advanced traveler information and border wait time system connecting the entire San Diego and Imperial border network. SD County: Route 11, 905, 125, &amp; 5 IMP County: Route 7, 111, 186, &amp; 188</td>
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<tr>
<td>EA NO: 42750</td>
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<tr>
<td>RT: 11</td>
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<tr>
<td>Capacity Status: NCI</td>
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<td>Exempt Category: Safety - Non signalization traffic control and operating</td>
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**Est Total Cost: $39,176**

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<th>PE</th>
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<td>SB1 - TCEP</td>
<td>$11,969</td>
<td>$2,317</td>
<td>$9,652</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>$2,317</strong></td>
<td><strong>$9,652</strong></td>
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<td><strong>$2,317</strong></td>
<td><strong>$9,652</strong></td>
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*27.207M of SHOPP programmed on CAL472

** Include SANDAG pending projects - these projects are subject to change when accepted by SANDAG
### Table 1

#### 2018 Regional Transportation Improvement Program

**San Diego Region (in $000s)**

<table>
<thead>
<tr>
<th>MPO ID:</th>
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<th>Project Title:</th>
<th>Third Street, Fourth Street and I Avenue Drainage Improvements</th>
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<th>Project Description:</th>
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<td></td>
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<td></td>
<td>Intersection at D Avenue and I Avenue - In Coronado, this project will install catch basins along Third and Fourth Street to capture storm water which collects and spreads into travel lanes even during mild storms; it will improve safety and traffic circulation during storm events on SR 75 by capturing and diverting into new storm drain located along I Avenue.</td>
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**Est Total Cost: $1,500**

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**TOTAL**

| TOTAL  | $1,500 | $1,250 | $250   |       |       | $245  | $1,255 |  |

**Include SANDAG pending projects - these projects are subject to change when accepted by SANDAG**
### San Diego Association of Governments

#### MPO ID: SAN31
**Project Title:** Escondido Maintenance Facility  
**Project Description:** Escondido at Washington and Centre City - improvements to maintenance facility including electronic gates, surveillance systems, video cameras, security  
**Capacity Status:** NCI  
**Exempt Category:** Mass Transit - Const of new bus or rail storage/maint facilities excluded in 23 CFR part 771

**Est Total Cost:** $7,516

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*STIP-TransNet swap

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#### MPO ID: SAN201
**Project Title:** Airport Connection  
**Project Description:** Along Palm Street west of Pacific Highway - pedestrian improvements connecting the Middletown light rail station and the planned airport shuttle stop; includes street and sidewalk improvements, landscaping, lighting, signal modification, and curb return improvements. Toll Credits will be used to match federal funds for the PE phase, Toll Credits will be used to match federal funds for the CON phase

**Est Total Cost:** $1,789

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*Demo IDs CA176, CA424, CA680, CA653 repurposed to FHWA transfer number CAT 16-100

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#### MPO ID: SAN246
**Project Title:** Signal Respacing and Optimization  
**Project Description:** Along the LOSSAN Corridor in San Diego County - Design of rail signals at key locations along the LOSSAN Corridor within San Diego County to increase service efficiency

**Est Total Cost:** $17,900

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**Include SANDAG pending projects - these projects are subject to change when accepted by SANDAG
### Table 1
2018 Regional Transportation Improvement Program
San Diego Region (in $000s)

**San Diego Unified Port District**

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<td>Project Title:</td>
<td>NCMT Rail Track Extension Project Design and Engineering Study</td>
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<tr>
<td>Project Description:</td>
<td>In the city of National City, at the National City Marine Terminal - Perform a planning study for design and engineering work for the National City Marine Terminal Rail Track Extension Project.</td>
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<td>Capacity Status: NCI</td>
<td>Exempt Category: Other - Engineering studies</td>
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<tr>
<td>Est Total Cost:</td>
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**MPO ID: PORT03**

| Project Title: | TAMT Beyond Compliance Environmental Enhancement Project |
| Project Description: | In the city of San Diego, Tenth Avenue Marine Terminal - The Port will expand the existing shore power system and implement an Advanced Marine Emission Control System, also known as a bonnet system, at the Tenth Avenue Marine Terminal. |
| Capacity Status: NCI | Exempt Category: Other - Noise attenuation |
| Est Total Cost: | $8,000 |

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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$8,000</strong></td>
<td><strong>$8,000</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Include SANDAG pending projects - these projects are subject to change when accepted by SANDAG**
## Table 1

2018 Regional Transportation Improvement Program  
San Diego Region (in $000s)

**San Marcos, City of**

<table>
<thead>
<tr>
<th>MPO ID: SM66</th>
<th>ADOPTION: 18-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Title:</td>
<td>San Marcos Blvd. Intersection Improvements</td>
</tr>
<tr>
<td>Project Description:</td>
<td>Intersection at San Marcos Blvd and Via Vera Cruz, Intersection at Twin Oaks Valley Rd - The project includes level of service improvements to San Marcos Blvd. at the intersections of Twin Oaks Valley Rd. and Via Vera Cruz to decrease the wait times at each signal.</td>
</tr>
<tr>
<td>Exempt Category:</td>
<td>Other - Intersection channelization projects</td>
</tr>
<tr>
<td>Capacity Status:</td>
<td>NCI</td>
</tr>
<tr>
<td><strong>Est Total Cost:</strong></td>
<td>$110</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>TOTAL</th>
<th>PRIOR</th>
<th>18/19</th>
<th>19/20</th>
<th>20/21</th>
<th>21/22</th>
<th>22/23</th>
<th>PE</th>
<th>RW</th>
<th>CON</th>
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</thead>
<tbody>
<tr>
<td>Local Funds</td>
<td>$110</td>
<td>$110</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$110</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$110</strong></td>
<td><strong>$110</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$110</strong></td>
</tr>
</tbody>
</table>

**Include SANDAG pending projects - these projects are subject to change when accepted by SANDAG**
### Table 1

**2018 Regional Transportation Improvement Program**

**San Diego Region (in $000s)**

<table>
<thead>
<tr>
<th>MPO ID: BIA12</th>
<th>ADOPTION: 18-00</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Title:</strong> Acquisition of Equipment/Vehicles - Tribal Areas</td>
<td></td>
</tr>
<tr>
<td><strong>Project Description:</strong> In San Diego County - various tribal locations - Purchase of equipment to support the routine road maintenance on eligible tribal routes</td>
<td></td>
</tr>
<tr>
<td><strong>Capacity Status:</strong> NCI</td>
<td><strong>Exempt Category:</strong> Safety - Pavement resurfacing and/or rehabilitation</td>
</tr>
<tr>
<td><strong>Est Total Cost:</strong> $1,104</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>PRIOR</strong></td>
</tr>
<tr>
<td>BIA</td>
<td>$1,104</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$1,104</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MPO ID: BIA13</th>
<th>ADOPTION: 18-00</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Title:</strong> Road Maintenance - Tribal Areas</td>
<td></td>
</tr>
<tr>
<td><strong>Project Description:</strong> In San Diego County in tribal areas - routine road maintenance on eligible routes on the tribes inventory</td>
<td></td>
</tr>
<tr>
<td><strong>Capacity Status:</strong> NCI</td>
<td><strong>Exempt Category:</strong> Safety - Pavement resurfacing and/or rehabilitation</td>
</tr>
<tr>
<td><strong>Est Total Cost:</strong> $3,123</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>PRIOR</strong></td>
</tr>
<tr>
<td>BIA</td>
<td>$3,123</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$3,123</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MPO ID: BIA14</th>
<th>ADOPTION: 18-00</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Title:</strong> Tribal Transportation Planning</td>
<td></td>
</tr>
<tr>
<td><strong>Project Description:</strong> In San Diego County on tribal lands - provide overall transportation planning, TTP management, long range transportation planning and transit planning activities for tribal areas</td>
<td></td>
</tr>
<tr>
<td><strong>Capacity Status:</strong> NCI</td>
<td><strong>Exempt Category:</strong> Other - Engineering studies</td>
</tr>
<tr>
<td><strong>Est Total Cost:</strong> $2,292</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>PRIOR</strong></td>
</tr>
<tr>
<td>BIA</td>
<td>$2,292</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$2,292</td>
</tr>
</tbody>
</table>

**Include SANDAG pending projects - these projects are subject to change when accepted by SANDAG**
## Table 1
2018 Regional Transportation Improvement Program
San Diego Region (in $000s)

<table>
<thead>
<tr>
<th>RTIP Fund Types</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federal Funding</strong></td>
<td></td>
</tr>
<tr>
<td>BIA</td>
<td>Bureau of Indian Affairs</td>
</tr>
<tr>
<td>CMAQ</td>
<td>Congestion Mitigation and Air Quality</td>
</tr>
<tr>
<td>EARREPU</td>
<td>Earmark Repurposing</td>
</tr>
<tr>
<td>FTA Section 5307</td>
<td>Federal Transit Administration Urbanized Area Formula Program</td>
</tr>
<tr>
<td>FTA Section 5309 (Bus)</td>
<td>Federal Transit Administration Discretionary Program</td>
</tr>
<tr>
<td>CMAQ/RSTP Conversion</td>
<td>Reimbursement of advanced federal funds which have been advanced with local funds in earlier years</td>
</tr>
<tr>
<td><strong>State Funding</strong></td>
<td></td>
</tr>
<tr>
<td>SB1 - TCEP</td>
<td>Senate Bill 1 - Trade Corridor Enhancement Program</td>
</tr>
<tr>
<td>SB1 - LPP Formula</td>
<td>Senate Bill 1 - Local Partnership Formula Program</td>
</tr>
<tr>
<td>SB1 - TIRCP</td>
<td>Senate Bill 1 - Transit and Intercity Rail Program</td>
</tr>
<tr>
<td><strong>Local Funding</strong></td>
<td></td>
</tr>
<tr>
<td>Local Funds AC</td>
<td>Local Funds - Advanced Construction; mechanism to advance local funds to be reimbursed at a later fiscal year with federal/state funds</td>
</tr>
<tr>
<td>RTCIP</td>
<td>Regional Transportation Congestion Improvement Program</td>
</tr>
<tr>
<td>TransNet-MC</td>
<td>Prop. A Extension Local Transportation Sales Tax - Major Corridors</td>
</tr>
</tbody>
</table>

**Include SANDAG pending projects - these projects are subject to change when accepted by SANDAG**
Appendix F

Regional Emissions Analysis and Modeling Procedures
Appendix F
Regional Emissions Analysis and Modeling Procedures

Background

The federal Clean Air Act (CAA), which was last amended in 1990, requires the United States Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. California has adopted state air quality standards that are more stringent than the NAAQS. Areas with levels that violate the standard for specified pollutants are designated as nonattainment areas.

The U.S. EPA requires that each state containing nonattainment areas develop plans to attain the NAAQS by a specified attainment deadline. These attainment plans are called State Implementation Plans (SIP). The San Diego County Air Pollution Control District (APCD) prepares the San Diego portion of the California SIP. Once the standards are attained, further plans – called Maintenance Plans – are required to demonstrate continued maintenance of the NAAQS.

The San Diego Association of Governments (SANDAG) and the United States Department of Transportation (U.S. DOT) must make a determination that the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP) conform to the SIP for air quality. Conformity to the SIP means that transportation activities will not create new air quality violations, worsen existing violations, or delay the attainment of the national ambient air quality standards.

On April 15, 2004, the U.S. EPA designated the San Diego air basin as nonattainment for the 1997 Eight-Hour Ozone Standard. This designation took effect on June 15, 2004. However, several areas that are tribal lands in eastern San Diego County were excluded from the nonattainment designation.

The air basin initially was classified as a basic nonattainment area under Subpart 1 of the CAA, and the attainment date for the 1997 Eight-Hour Ozone Standard was set as June 15, 2009. In cooperation with SANDAG, the San Diego APCD developed an Eight-Hour Ozone Attainment Plan for the 1997 standard, which was submitted to the U.S. EPA on June 15, 2007. The budgets in the Eight-Hour Ozone Attainment Plan for San Diego County were found adequate for transportation conformity purposes by the U.S. EPA, effective June 9, 2008.

However, on April 27, 2012, in response to a Court decision, the U.S. EPA ruled that the San Diego basic nonattainment area be reclassified as a Subpart 2 moderate nonattainment area, with an attainment deadline of June 15, 2010. This reclassification became effective on June 13, 2012. Air quality data for 2009, 2010, and 2011 demonstrated that the San Diego air basin attained the 1997 ozone standard; APCD prepared a Maintenance Plan, with a request for redesignation to attainment/maintenance. On December 6, 2012, the California Air Resources Board (CARB) approved the Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County for submittal to the U.S. EPA as a SIP revision. Effective July 5, 2013, the U.S. EPA approved California’s request to redesignate the San Diego County ozone...
nonattainment area to attainment for the 1997 Eight-Hour Ozone National Ambient Air Quality Standard and their plan for continuing to attain the 1997 ozone standard for ten years beyond redesignation.

On May 21, 2012, the U.S. EPA designated the San Diego air basin as a nonattainment area for the 2008 Eight-Hour Ozone standard and classified it as a marginal area with an attainment date of December 31, 2015. This designation became effective on July 20, 2012. SANDAG determined conformity to the new standard on May 24, 2013, using the applicable model approved by the U.S. EPA to forecast regional emissions (EMFAC2011). The U.S. DOT, in consultation with the U.S. EPA, made its conformity determination on June 28, 2013. The U.S. EPA’s final rule also provided for the revocation of the 1997 Eight-Hour Ozone NAAQS for transportation conformity purposes effective July 20, 2013. In a D.C. Circuit Court decision on December 23, 2014, (NRDC v. EPA, No. 12-1321), it was determined that the attainment date for marginal areas would be set for July 20, 2015.

Effective June 3, 2016, the U.S. EPA determined that 11 areas, including the San Diego air basin, failed to attain the 2008 ozone NAAQS by the applicable attainment date of July 20, 2015, and thus were reclassified by operation of law as “Moderate” for the 2008 ozone NAAQS. States containing any or any portion of these new Moderate areas were required to submit SIP revisions that meet the statutory and regulatory requirements that apply to 2008 ozone nonattainment areas classified as Moderate by January 1, 2017. On April 12, 2017, the San Diego Air Pollution Control District submitted a SIP revision addressing Moderate area requirements to the Air Resources Board (ARB). Effective December 4, 2017, the U.S. EPA found the motor vehicle emissions budgets for the Reasonable Further Progress milestone year of 2017 from the 2008 Eight-Hour Ozone Attainment Plan for San Diego County adequate for transportation conformity purposes for the 2008 ozone NAAQS.

The San Diego region had been designated by the U.S. EPA as a federal maintenance area for the Carbon Monoxide (CO) standard. On November 8, 2004, ARB submitted the 2004 revision to the California SIP for CO to the U.S. EPA, which extended the maintenance plan demonstration to 2018. Effective January 30, 2006, the U.S. EPA approved this maintenance plan as a SIP revision. On March 21, 2018, the U.S. EPA documented in a letter that transportation conformity requirements for CO will cease to apply after June 1, 2018.

Conformity Determinations

On October 9, 2015, the SANDAG Board of Directors (SANDAG Board) made a finding of conformity for San Diego Forward: The Regional Plan, which serves as the Regional Transportation Plan. On October 16, 2015, the SANDAG Board ratified the 2014 RTIP Amendment No. 7 and its conformity analysis. The U.S. DOT issued its conformity finding for the Regional Plan and the 2014 RTIP through Amendment No. 8 on December 2, 2015.

On September 23, 2016, the SANDAG Board adopted the Final 2016 RTIP and its conformity determination and redetermination of conformity of the Regional Plan. The U.S. DOT, in consultation with the U.S. EPA, made its conformity determination on December 16, 2016.
Transportation Conformity: Modeling Procedures

Introduction

The draft 2018 RTIP is consistent with the Regional Plan. As a financially constrained plan, the draft 2018 RTIP only contains major transportation projects listed in the Revenue Constrained Regional Plan that are being implemented in the five-year draft 2018 RTIP period. Chapter 4 of the draft 2018 RTIP includes a detailed discussion on fiscal constraint. Conformity of the Regional Plan expires on December 2, 2019; Table F-9 includes the conformity analysis for both the draft 2018 RTIP and the conformity redetermination for the Regional Plan.

Growth Forecasts

Every three to five years, SANDAG produces a long-range forecast of population, housing, and employment growth for the San Diego region. The most recently adopted forecast is the Series 13 2050 Regional Growth Forecast (adopted by the SANDAG Board on October 9, 2015), and was utilized in the development of the Regional Plan and the draft 2018 RTIP.

The forecast process relies upon three integrated forecasting models. The first one, the Demographic and Economic Forecasting Model, provides a detailed econometric and demographic forecast for the entire region. The second model, the Production, Exchange, Consumption, Allocation Model, considers land economics and the potential for redevelopment in determining subregional allocation of employment and housing. The third model, the Urban Development Model, allocates the results of the first two models to Master Geographic Reference Areas (MGRA) based upon the current plans and policies of the jurisdictions. MGRAs are the base unit of geography for SANDAG subregional land use models. Similar in size to Census blocks or block groups, MGRAs are designed to nest within other administrative boundaries such as Census tracts, school districts, and jurisdictions among others, allowing MGRA-level forecast data to be aggregated up to larger areas.

On March 7, 2018, SANDAG consulted with the San Diego Region Conformity Working Group (CWG) on the use of the Series 13, 2050 Regional Growth Forecast for the air quality conformity analysis of the draft 2018 RTIP and Regional Plan conformity redetermination. Previously, both the U.S. DOT and the U.S. EPA concurred that approved plans should be used as input in the air quality conformity process. Figure F-1 and Table F-1 show the regional population, jobs, and housing growth forecast for the San Diego region through 2050.
Figure F-1: San Diego Regional Population, Jobs, and Housing Forecast

Source: 2050 Regional Growth Forecast, SANDAG, October 2015.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3,143,429</td>
<td>1,450,913</td>
</tr>
<tr>
<td>2020</td>
<td>3,435,713</td>
<td>1,624,124</td>
</tr>
<tr>
<td>2035</td>
<td>3,853,698</td>
<td>1,769,938</td>
</tr>
<tr>
<td>2040</td>
<td>4,068,759</td>
<td>1,911,405</td>
</tr>
</tbody>
</table>

Source: Series 13, 2050 Regional Growth Forecast, SANDAG, October 2015.

The Series 13, 2050 Regional Growth Forecast is based largely upon the adopted general plans and community plans and policies of the 18 cities and the County. Because many of the local general plans have horizon years of 2030 – 20 years before the 2050 Growth Forecast horizon year – the later part of the forecast was developed in collaboration with each of the local jurisdictions through an iterative process that allowed each city to provide their projections for land uses in those later years.

**Transportation Modeling**

SANDAG uses a calibrated and validated activity-based model (ABM) to support the development of the Regional Plan. An ABM simulates individual and household transportation decisions that comprise their daily travel itinerary. It predicts whether, where, when, and how people travel outside their home for activities such as work, school, shopping, healthcare, and recreation.

ABMs are becoming the standard travel demand modeling technology used by large Metropolitan Planning Organizations (MPOs), including the Sacramento Area Council of Governments, and the Bay Area Metropolitan...
Transportation Commission. These models allow for a more nuanced analysis of complex policies and projects. The powerful analytic capabilities of an ABM are particularly helpful in evaluating social equity, carpooling, transit access, parking conditions, tolling, and pricing. Because an ABM tracks the characteristics of each person, the model can be used to analyze the travel patterns of a wide range of socio-economic groups. For example, a household with many members may be more likely to carpool, own multiple vehicles, and share shopping responsibilities.

ABM outputs are used as inputs for regional emissions forecasts. The estimates of regional transportation-related emissions analyses conducted for the draft 2018 RTIP and Regional Plan conformity redetermination meet the requirements established in the Transportation Conformity Regulation (40 CFR §93.122(b) and §93.122(c)). These requirements relate to the procedures to determine regional transportation-related emissions, including the use of network-based travel models, methods to estimate traffic speeds and delays, and the estimation of vehicle miles traveled (VMT).

The regionally significant projects, and the timing for when they are expected to be open to traffic in each analysis year, are documented in Tables F-11 through F-13. The design concept and scope of projects allows adequate model representation to determine interactions with regionally significant facilities, route options, travel times, transit ridership, and land use.

This appendix describes the key modeling units, ABM model flow, the San Diego residents travel module, highway, transit and active transportation networks, data sources, and emissions modeling.

**Key Modeling Units**

An ABM simulates individual and household travel decisions through tours, that is, a journey that begins and ends at home. A tour includes a chain of trips (segments of travel with a given origin and destination). The advantage of modeling tours and trips hierarchy is to ensure spatial, temporal, and modal consistency and integrity across trips within a tour.

To simulate trips and tours made by individuals and households, the SANDAG ABM includes a total of eight person-types, shown in Table F-2. The person-types are mutually exclusive with respect to age, work status, and school status.

**Table F-2: Person Types**

<table>
<thead>
<tr>
<th>Number</th>
<th>Person-Type</th>
<th>Age</th>
<th>Work Status</th>
<th>School Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Full-time worker</td>
<td>18+</td>
<td>Full-time</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Part-time worker</td>
<td>18+</td>
<td>Part-time</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>College student</td>
<td>18+</td>
<td>Any</td>
<td>College+</td>
</tr>
<tr>
<td>4</td>
<td>Non-working adult</td>
<td>18–64</td>
<td>Unemployed</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Non-working senior</td>
<td>65+</td>
<td>Unemployed</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Driving age student</td>
<td>16–17</td>
<td>Any</td>
<td>Pre-college</td>
</tr>
<tr>
<td>7</td>
<td>Non-driving student</td>
<td>6–15</td>
<td>None</td>
<td>Pre-college</td>
</tr>
<tr>
<td>8</td>
<td>Pre-schooler</td>
<td>0–5</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
Further, workers are stratified by their occupation to take full advantage of information provided by the land use and demographic models. Table F-3 outlines the worker categories. These models are used to segment destination choice attractiveness for work location choice, based on the occupation of the worker.

**Table F-3: Occupation Types**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Management, Business, Science, and Arts</td>
</tr>
<tr>
<td>2</td>
<td>Services</td>
</tr>
<tr>
<td>3</td>
<td>Sales and Office</td>
</tr>
<tr>
<td>4</td>
<td>Natural Resources, Construction, and Maintenance</td>
</tr>
<tr>
<td>5</td>
<td>Production, Transportation, and Material Moving</td>
</tr>
<tr>
<td>6</td>
<td>Military</td>
</tr>
</tbody>
</table>

The SANDAG ABM assigns one of the activity types to each out-of-home location that a person travels to in the simulation, shown in Table F-4. The activity types are grouped according to whether the activity is mandatory, maintenance, or discretionary. The classification scheme of activities into the three categories helps differentiate the importance of the activities. Mandatory includes work and school activities. Maintenance includes household-related activity such as drop-off and pick-up of children, shopping, and medical appointments. Discretionary includes social and recreational activities. To determine which person-types can be used for generating each activity type, the model assigns eligibility requirements. For example, a full-time worker will generate mandatory work activities while a non-working adult, or senior, is eligible for non-mandatory activities. The classification scheme of each activity type reflects the relative importance or natural hierarchy of the activity, where work and school activities are typically the most inflexible in the person’s daily travel itinerary.

**Table F-4: Activity Types**

<table>
<thead>
<tr>
<th>Type</th>
<th>Purpose</th>
<th>Description</th>
<th>Classification</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Work</td>
<td>Working at regular workplace or work-related activities outside the home</td>
<td>Mandatory</td>
<td>Workers and students</td>
</tr>
<tr>
<td>2</td>
<td>University</td>
<td>College+</td>
<td>Mandatory</td>
<td>Age 18+</td>
</tr>
<tr>
<td>3</td>
<td>High School</td>
<td>Grades 9-12</td>
<td>Mandatory</td>
<td>Age 14-17</td>
</tr>
<tr>
<td>4</td>
<td>Grade School</td>
<td>Grades K-8</td>
<td>Mandatory</td>
<td>Age 5-13</td>
</tr>
<tr>
<td>5</td>
<td>Escorting</td>
<td>Pick-up/drop-off passengers (auto trips only)</td>
<td>Maintenance</td>
<td>Age 16+</td>
</tr>
<tr>
<td>6</td>
<td>Shopping</td>
<td>Shopping away from home</td>
<td>Maintenance</td>
<td>5+ (if joint travel, all persons)</td>
</tr>
<tr>
<td>7</td>
<td>Other Maintenance</td>
<td>Personal business/services and medical appointments</td>
<td>Maintenance</td>
<td>5+ (if joint travel, all persons)</td>
</tr>
<tr>
<td>8</td>
<td>Social/Recreational</td>
<td>Recreation, visiting friends/family</td>
<td>Discretionary</td>
<td>5+ (if joint travel, all persons)</td>
</tr>
<tr>
<td>9</td>
<td>Eat Out</td>
<td>Eating outside of home</td>
<td>Discretionary</td>
<td>5+ (if joint travel, all persons)</td>
</tr>
<tr>
<td>10</td>
<td>Other Discretionary</td>
<td>Volunteer work, religious activities</td>
<td>Discretionary</td>
<td>5+ (if joint travel, all persons)</td>
</tr>
</tbody>
</table>
The SANDAG ABM models a full travel day of activity broken into one-half hour intervals. These one-half hour increments begin at 3 a.m. and end at 3 a.m. the next day, though the hours between 1 a.m. and 5 a.m. are aggregated to reduce computational burden. The ABM ensures temporal integrity so that no activities are scheduled with conflicting time windows, with the exception of short activities/tours that are completed within a one-half hour increment. The ABM assigns auto and transit traffic at five discrete time-of-day periods aggregated from the half-hour intervals shown in Table F-5.

Table F-5: Time Periods for Level of Service Skims and Assignment

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Begin Time</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Early</td>
<td>3:00 a.m.</td>
<td>5:59 a.m.</td>
</tr>
<tr>
<td>2</td>
<td>A.M. Peak</td>
<td>6:00 a.m.</td>
<td>8:59 a.m.</td>
</tr>
<tr>
<td>3</td>
<td>Midday</td>
<td>9:00 a.m.</td>
<td>3:29 p.m.</td>
</tr>
<tr>
<td>4</td>
<td>P.M. Peak</td>
<td>3:30 p.m.</td>
<td>6:59 p.m.</td>
</tr>
<tr>
<td>5</td>
<td>Evening</td>
<td>7:00 p.m.</td>
<td>2:59 a.m.</td>
</tr>
</tbody>
</table>

The SANDAG ABM uses three-tier zone systems shown in Table F-6: Zone System. The MGRA master-geographic reference area is used for transit access and calculations, and location choice models; the Traffic Analysis Zone (TAZ) system is used for highway path building and assignment; and the pseudo-TAZ called Transit Access Point (TAP) is used for transit path building and assignment. The 23,000 MGRAs are roughly equivalent to census block groups. The ABM uses generalized transit stops as TAPs, and relies on the traffic assignment software to generate TAP-TAP Level of Service (LOS) matrices (also known as “skims”) such as in-vehicle time, first wait, transfer wait, and fare for transit calculation at the MGRA level. A custom-built software calculates walk access time from MGRA to TAP through paths from an all-street active transportation network including bike paths and walkways for non-motorized travel, and build paths following the Origin MGRA – Boarding TAP – Alighting TAP – Destination MGRA patterns. Figure F-2: Example MGRA - TAP Transit Accessibility shows a graphical depiction of MGRA – TAP transit paths. It displays potential walk paths from an origin MGRA through three potential boarding TAPs (two of which are local bus, and one of which is rail), with three potential alighting TAPs at the destination end.

Table F-6: Zone System

<table>
<thead>
<tr>
<th>Zone System</th>
<th>Description</th>
<th>Number of Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGRA</td>
<td>Master-Geographic Reference Area</td>
<td>23,000</td>
</tr>
<tr>
<td>TAZ</td>
<td>Traffic Analysis Zone</td>
<td>4,996</td>
</tr>
<tr>
<td>TAP</td>
<td>Transit Access Point</td>
<td>2,500</td>
</tr>
</tbody>
</table>
The ABM includes 26 modes available to residents, including auto by occupancy, toll/non-toll choice and lanes for high occupancy vehicle (HOV) or non-HOV, walk and bike modes, and walk and drive access to five different transit line-haul modes. Pay modes are those that involve paying a choice or “value” toll. Table F-7 lists the trip modes defined in the SANDAG ABM.

To model transit flow, the ABM uses five transit line-haul modes: (1) Commuter Rail (COASTER); (2) Light Rail Transit (LRT) (including Trolley, SPRINTER, and Streetcar); (3) Bus Rapid Transit (Rapid)/Rapid Bus; (4) Express Bus; and (5) Local Bus. The mode of access to transit includes walk, park & ride (PNR), and kiss & ride (KNR or drop-off).
### Table F-7: Trip Modes

<table>
<thead>
<tr>
<th>Number</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Drive Alone (Non-Toll)</td>
</tr>
<tr>
<td>2</td>
<td>Drive Alone (Toll)</td>
</tr>
<tr>
<td>3</td>
<td>Share Ride 2 Person (Non-Toll, Non-HOV)</td>
</tr>
<tr>
<td>4</td>
<td>Share Ride 2 Person (Non-Toll, HOV)</td>
</tr>
<tr>
<td>5</td>
<td>Share Ride 2 Person (Toll, HOV)</td>
</tr>
<tr>
<td>6</td>
<td>Share Ride 3+ Person (Non-Toll, Non-HOV)</td>
</tr>
<tr>
<td>7</td>
<td>Share Ride 3+ Person (Non-Toll, HOV)</td>
</tr>
<tr>
<td>8</td>
<td>Share Ride 3+ Person (Toll, HOV)</td>
</tr>
<tr>
<td>9</td>
<td>Walk-Local Bus</td>
</tr>
<tr>
<td>10</td>
<td>Walk-Express Bus</td>
</tr>
<tr>
<td>11</td>
<td>Walk-BRT</td>
</tr>
<tr>
<td>12</td>
<td>Walk-Light Rail</td>
</tr>
<tr>
<td>13</td>
<td>Walk-Heavy Rail</td>
</tr>
<tr>
<td>14</td>
<td>PNR-Local Bus</td>
</tr>
<tr>
<td>15</td>
<td>PNR-Express Bus</td>
</tr>
<tr>
<td>16</td>
<td>PNR-Bus Rapid Transit (BRT)/Rapid Bus</td>
</tr>
<tr>
<td>17</td>
<td>PNR-Light Rail</td>
</tr>
<tr>
<td>18</td>
<td>PNR-Heavy Rail</td>
</tr>
<tr>
<td>19</td>
<td>KNR-Local Bus</td>
</tr>
<tr>
<td>20</td>
<td>KNR-Express Bus</td>
</tr>
<tr>
<td>21</td>
<td>KNR-BRT</td>
</tr>
<tr>
<td>22</td>
<td>KNR-Light Rail</td>
</tr>
<tr>
<td>23</td>
<td>KNR-Heavy Rail</td>
</tr>
<tr>
<td>24</td>
<td>Walk</td>
</tr>
<tr>
<td>25</td>
<td>Bike</td>
</tr>
<tr>
<td>26</td>
<td>School Bus (only available for school purpose)</td>
</tr>
</tbody>
</table>

**ABM Model Flow**

To simulate San Diego residents and non-residents travel, and freight travel, the SANDAG ABM includes several models and steps.

Figure F-3 outlines the overall flow of the SANDAG ABM. It starts with building highway and transit networks in the traffic assignment software followed by highway assignment to create congested highway and transit travel times. A parallel step is to create a year-specific active transportation network and generate walking accessibility measures between MGRAs, between MGRA and TAP, and bike accessibility measures between
MGRAs and between TAZs. The congested highway and transit skims, and the walking and biking accessibility measures, are inputs to the simulated models. The congested highway skims are also inputs to the aggregate models. Once the simulated and aggregated models generate trips by residents or various travelers, the ABM aggregates the vehicle trips from MGRA to TAZ to TAZ matrices by time of day, by toll and non-toll, and by vehicle class, and assigns the vehicle trips to the highway network. The highway assignment generates the congested networks by time of day. The ABM then skims the congested networks to provide accessibility for the next iteration of the simulated and aggregated models. The process iterates three feedback loops. The last iteration assigns both highway and transit trips and creates skims for land use models. The outputs from the final step are used to generate input for EMFAC emissions modeling.

At the heart of the SANDAG ABM is the San Diego County residents’ travel module. It simulates San Diegan’s daily travel choices. In addition to the residents’ travel, there are trips made by visitors, commercial vehicles, and freight transportation. A number of special travel models (commercial vehicle model, truck model, air passenger model, external trip model, visitor model, and cross border model) account for these other sources of transportation demand. The models are run in parallel with the residents’ travel module. Trips generated from the simulated and aggregate models are summed up to an auto trip matrix and transit trip matrix by time of day by mode, and assigned to highway and transit networks.

After network assignment, the EMFAC model is used to generate emissions summaries based on the inputs generated by the post processing of highway assignment outputs.

San Diego Residents Travel Module

The San Diego residents’ travel module is comprised of numerous interacting components called “sub-modules.” It starts with generating a representative population for the San Diego region. Once a representative population is created, the model predicts long-term and medium-term decisions such as a choice of work or school location and a household’s choice of number of cars to own. Next, each person’s day is scheduled, taking into account the priority of various activities and interaction among the household members. Once all journeys to and from home have been scheduled, the model predicts specific travel details such as mode, the number of stops to make, where to stop, and when to depart from each stop to continue the tour. The final step of the ABM is traffic assignment where trips are summarized by traffic analysis zones and assigned to the transportation network.
Figure F-3: SANDAG ABM Flow Chart

- **Import and Build Highway/Transit Networks**
- **Skims**
  - Highway Assignment
  - Highway/Transit Skimming
- **Build AT Network**
  - Create AT Accessibility
- **Aggregated Travel**
  - Commercial Travel Model
  - Heavy Truck Model
  - Internal-External Model
  - External-External Model
- **Simulated Travel**
  - San Diego Residents Travel
  - Internal-External Model
  - Cross Border Mexican Resident Model
  - Airport Model
  - Visitor Model
- **Aggregate Auto and Transit Trips**
- **Final Step**
  - Highway /Transit Assignment
  - Land-Use Skim
- **Feedback Loops**
The following section discusses the sub-modules, in the order that each sub-module is taken within the San Diego residents’ travel module.

Step 1: Population synthesis (build a representative population that looks like San Diego)
The first step is to create a ‘synthetic’ population of San Diego County. A synthetic population is a table that has a record for every individual and household, with the individual’s and the household’s characteristics. For example, if there are 41,000 18-year-old males in the region in 2050, there would be approximately 41,000 records in the table for males age 18, with each record also having other characteristics such as school enrollment and labor force participation status. Taken as a whole, this synthetic population represents the decision-makers whose travel choices the model will simulate in later steps. For each simulation year, a full population is synthesized to match the forecasted socio-economic and housing characteristics of each part of the region at the zonal level. These forecasts, a key ABM input, come from the land use model. Synthesis works by replicating a sample of census records (each containing complete household and individual characteristics) and placing them around the region in such a way that the forecasted characteristics of each zone are matched.

Step 2: Work and school location (assign a work location to workers and a school location to students)
The second step predicts where each individual will go to work or school, if applicable. The work and school location sub-module simulates each worker’s choice of work location, taking into account many factors, including ease-of-travel and the number of employees by occupation type in each location. The sub-module also simulates each student’s choice of school, taking into account factors that include the distance from home to school, school enrollment, and district boundaries. The results from this step affect later travel choices significantly because of the prominent role that workplace and school usually play in the itinerary of workers and students.

Step 3: Determine certain mobility characteristics of individuals and households
This step predicts the number of automobiles each household owns, whether each household owns a toll transponder, and whether worker parking costs are employer-reimbursed. The sub-module assigns each household zero cars, one car, two cars, three cars, or ‘four or more’ cars, taking into account a number of criteria, including household size, income, number of drivers, and how easy it is to reach destinations from the household’s place of residence. This step sets certain mobility characteristics that influence how people travel.

Step 4: Schedule the day
The fourth step begins by predicting a ‘daily activity’ pattern for each individual. A daily activity pattern is a theme that dictates an individual’s schedule. A ‘mandatory’ pattern means that an individual travels to work and/or school, and then schedules other activities around work/school. An ‘at-home’ pattern means that an individual’s daily schedule involves no travel in the region. A ‘non-mandatory’ pattern means that an individual’s daily schedule involves traveling, but only to destinations other than work or school. The pattern-type of other household members influences an individual’s daily pattern type. For example, if a child stays home from school, a working parent might be more likely to stay home from work as well.
Once the sub-module selects an individual’s daily activity pattern, it schedules the tours that he or she will take. Recall that a tour is a journey that begins and ends at home, and it can include stops at other destinations on the way to or from the primary destination. The ABM deals with three main categories of tours: (1) mandatory tours; (2) joint tours; and (3) non-mandatory tours. Mandatory tours have work or school as the primary destination. Joint tours involve out-of-home activities that multiple members of a household partake in together. Non-mandatory tours involve purposes other than work or school that an individual undertakes independent of other members of his or her household. The sub-module schedules each tour type by predicting how many tours of that type there are, who will participate in the tour, where the main destination is, and when to depart and arrive (see Figure F-4).

**Figure F-4: Predicting Tour Type Scheduling Details**

For individuals assigned a ‘mandatory’ activity pattern, the sub-module first assigns the number of work tours and/or school tours they will make. After the number of these mandatory tours has been determined, the sub-module selects the time of departure from and arrival back home for each tour.

After scheduling the mandatory tours, the sub-module calculates time remaining for other tours. Remaining intervals of time are called “residual time windows,” and other tours can only be scheduled in these open slots (see Figure F-5 for an example) to guarantee temporal consistency.

**Figure F-5: Tour Scheduling Windows**

In time remaining after mandatory tours are scheduled, the sub-module determines the number of joint tours to be made for each household. It only schedules joint tours in the time windows that overlap between individuals after it accounts for mandatory activities. After the number and purpose of these joint tours has
been determined, the sub-module decides which household members will participate in each joint tour and whether the joint tour must involve a combination of children and adults. The sub-module then chooses a specific destination for the tour and the specific times when tour participants will depart from and arrive back home together. Next, ‘non-mandatory’ tours are scheduled. For each household, the sub-module decides what other tours need to be made for the purpose of household ‘maintenance’ activities such as shopping. These tours are assigned to specific household members to carry out individually. For the person who is assigned each maintenance tour, the model selects a specific destination and schedules the tour to take place in a time window that mandatory tours and joint tours have left open. Finally, in what time remains, the model decides whether each individual will take non-mandatory ‘discretionary’ tours. These low-priority tours involve activities related to recreation, eating out, and social functions. Discretionary tours can only take place in time windows that remain after all other tours have been scheduled. The sub-module chooses a specific destination and departure/arrival combination for each discretionary tour a person makes.

Step 5: Make tour and trip-level decisions
The ABM then selects more detailed characteristics of each tour for every traveler. This step fills in travel details after the major aspects of the day have been scheduled. Tour characteristics that need to be determined include: primary mode of the tour, how many times to stop, where to stop, and when to depart from each stop to continue the tour. Figure F-6 includes the available modes and mode hierarchy. After tour characteristics are set, the sub-module determines the mode of each trip (conditional upon tour mode). Recall that trips are segments of tours that have a given origin and destination. If the trip mode involves an automobile and the destination is a parking-constrained area, then the model chooses a parking location for the traveler at the trip destination.

Figure F-6: Tour and Trip Modes

Step 6: Aggregating and assigning auto and transit trips
The previous step provided travel details for each person down to the trip level. In this final step, the model sums all trips taken by individuals in San Diego County along with trips generated by other models that
represent special categories of travel within the region that are not covered by the ABM. The model aggregates auto trips in TAZ to TAZ matrices by time of day and assigns trips to the highway network, and aggregates transit trips in TAP to TAP matrices by time of day and assigns to the transit network.

SANDAG loads traffic using the Multimodal Multiclass Assignment function of the traffic assignment software. Multiclass assignment allows SANDAG to assign the eight vehicle modes (drive alone non-toll; drive alone toll; share ride 2 non-toll non-HOV; share ride 2 non-toll HOV; share ride 2 toll HOV; share ride 3+ non-toll non-HOV; share ride 3+ non-toll HOV; and share ride 3+ toll HOV) plus the six-truck toll, and non-toll by truck class modes (light-heavy duty non-toll/toll; medium-heavy duty non-toll/toll; and heavy-heavy duty non-toll/toll) in one combined procedure.

The highway assignment model works by finding roads that provide the shortest travel impedance between each zone pair. Trips between zone pairs are then accumulated on road segments making up minimum paths. Highway impedances consider posted speed limits, signal delays, congestion delays, and costs. The model computes congestion delays for each segment based on the ratio of the traffic volume to roadway capacity. Motorists may choose different paths during peak hours, when congestion can be heavy, and off-peak hours, when roadways are typically free flowing. For this reason, traffic is assigned separately for five time periods (as defined in the Key Modeling Units section). Vehicle trip tables for each scenario reflect increased trip-making due to population growth and variations in travel patterns due to the alternative transportation facilities/networks proposed. Customized programs process outputs from highway assignment and generate total VMTs by vehicle class, and percentage of VMTs by speed bin and by vehicle class. This information is input to the EMFAC program to generate emissions summaries.

For transit assignment, traffic assignment software assigns TAP to TAP transit trips to the network. Altogether, 75 separate transit assignments are produced for five time periods: (1) walk; (2) park & ride; (3) kiss & ride; (4) auto access; and (5) line-haul modes. These individual assignments are summed to obtain total transit ridership forecasts.

**Model Inputs**

The SANDAG ABM utilizes a variety of data as inputs. Besides the growth forecast inputs (used to provide existing and planned land use and demographic characteristics) there are three major inputs: (1) highway networks used to describe existing and planned roadway facilities; (2) transit networks used to describe existing and planned public transit service; and (3) an active transportation network used to describe non-motorized bicycle and pedestrian facilities.

The regionally significant projects, and the years they are expected to open to traffic for each analysis year, are documented in Tables F-11 through F-13. The design concept and scope of projects allow adequate model representation to determine intersections with regionally significant facilities, route options, travel times, transit ridership, and land use. The VMT for non-regionally significant federal projects is also accounted for in the regional emissions analysis.
Highway Networks

The regional highway networks in the Regional Plan and draft 2018 RTIP include all roads classified by local jurisdictions in their general plan circulation elements. These roads include freeways, expressways, and the Regional Arterial System (RAS). The RAS consists of all conventional state highways, prime arterials, and selected major streets. In addition, some local streets are included in the networks for connectivity between TAZs.

The route improvements and additions in the Regional Plan and draft 2018 RTIP are developed to provide adequate travel service that is compatible with adopted regional policies for land use and population growth. All regionally significant projects are included in the quantitative emissions analysis. These include all state highways, all proposed national highway system routes, all regionally significant arterials, and all “other principal arterials” functionally classified by the Federal Highway Administration. These include both federal and non-federal regionally significant projects.

The networks also account for programs intended to improve the operation of the highway system, including HOV lanes, Managed Lanes, and ramp metering. Existing and proposed toll facilities also are modeled to reflect time, cost, and capacity effects of these facilities. State Route (SR) 125 South, SR 11, SR 241, and additional lanes on Interstate 15 (I-15) north of SR 78, and additional lanes on I-5 north of Vandegrift Boulevard, are modeled toll facilities included in the Revenue Constrained Plan for the San Diego region.

In addition, several Managed/HOV lanes are included in the Revenue Constrained Plan (Table F-12). Facilities with proposed Managed Lanes include Interstate 5 (I-5), I-15, I-805, SR 52, SR 54, SR 78, SR 94, and SR 125. Managed Lanes are defined as reversible HOV routes and HOV routes with two or more lanes in the peak direction. Additionally, one-lane HOV facilities that operate as two-person carpool lanes in the earlier years of the Regional Plan transition to Managed Lanes by 2035. It is assumed that the excess capacity not utilized by carpools and transit on these facilities would be managed so that single occupant vehicles could use these lanes under a pricing mechanism. Traffic flows would be managed so that the facility would operate at LOS D or better.

SANDAG maintains a master transportation network from which a specific year network, between the years 2010 and 2050, can be built. For air quality conformity analyses of the Regional Plan and draft 2018 RTIP, SANDAG built and verified four highway networks (2020, 2030, 2040, and 2050) from the master transportation network.

A list of the major highway and near-term regional arterial projects included in the conformity analysis, along with information on phasing for their implementation, are included in Tables F-11 and F-13. Locally funded, regionally significant projects have also been or are included in the air quality conformity analysis. These projects are funded with TransNet Extension funds – a 40-year, half-cent local sales tax extension approved by voters in 2004 – that expires in 2048; and other local revenue sources.
Transit Networks

SANDAG also maintains transit network datasets for existing and proposed transit systems. Most transit routes run over the same streets, freeways, HOV lanes, and ramps used in the highway networks. The only additional facilities that are added to the master transportation network for transit modeling purposes are:

- Rail lines used by commuter rail, Trolleys, Streetcars
- Streets used by buses that are not part of local general plan circulation elements

Rapid service has stop spacing similar to commuter rail stations and operating characteristics midway between rail and bus service. Rapid service is provided by advanced design buses operating on HOV lanes or Managed Lanes, some grade-separated transit ways, and surface streets with priority transit systems.

Bus speeds assumed in the transit networks are derived from modeled highway speeds and reflect the effects of congestion. Higher bus speeds may result for transit vehicles operating on highways with HOV lanes and HOV bypass lanes at ramp meters, compared to those routes that operate on highways where these facilities do not exist.

In addition to transit travel times, transit fares are required as input to the mode choice model. A customized procedure using the traffic assignment software replicates the San Diego region’s fare policies for riders (seniors, disabled, students), which differ among:

- Local Buses, which collect a flat fare of between $1 and $2.50 (depending on the type of service)
- Trolleys, which charge $2.50 for all trips
- SPRINTER, which charges $2
- Commuter rail (COASTER), which has a zone-based fare of between $4 and $5.50
- Proposed regional Rapid routes, which are assumed to charge $2.50 ($5 for Rapid BRT)
- Proposed Rapid Bus routes, which are assumed to charge $2.25

Fares are expressed in 2010 dollars and are assumed to remain constant in inflation-adjusted dollars over the forecast period.

Near-term transit route changes are drawn from the Coordinated Plan, which was produced in cooperation with the region’s transit agencies. Longer range improvements are proposed as a part of the Regional Plan development and other transit corridor studies. In addition to federal and state-funded projects, locally funded transit projects that are regionally significant have been included in the air quality conformity analysis of the Regional Plan and the draft 2018 RTIP. Once network coding is completed, the ABM is run for the applicable scenarios (2020, 2030, 2040, and 2050). There have been no transit fares or operating policy changes since the adoption of the 2050 Regional Transportation Plan.
**Active Transportation Networks**

SANDAG maintains an all-street active transportation network including existing and planned bike projects to support bike project evaluation and impact analysis. Based on the proposed bike projects in the regional bikeway system developed through Riding to 2050 - San Diego Regional Bike Plan, SANDAG generates year-specific active transportation networks and uses these networks to create accessibility measures from MGRA to MGRA for walking and biking and from TAZ to TAZ for biking modes. These active transportation accessibility measures are inputs to the SANDAG ABM to simulate people’s choice of travel mode and choice of bike routes.

The active transportation networks include five classification types for bike facilities in the regional bikeway system: (1) class I – bike path; (2) class II – bike lanes; (3) class III – bike routes; (4) class IV – bike boulevard; and; (5) class V – cycle track. Appendix U16 of San Diego Forward: The Regional Plan includes a detailed description of the bike facility classification system.

**Data Sources**

Besides network inputs, SANDAG relies on several survey data to estimate and calibrate the model parameters. The most important survey data is household travel survey data. The latest household travel survey conducted for SANDAG was the 2006 Household Travel Behavior Survey (TBS06). Since 1966, consistent with the state of the practice for the California Household Travel Survey, and National Household Travel Survey, SANDAG and Caltrans conduct a comprehensive travel survey of San Diego county every ten years. TBS06 surveyed 3,651 households in San Diego County. The survey asked all household members to record all trips for a specified 24-hour weekday period using a specially designed travel log.

Additional data needed for the mode choice components of the ABM come from a transit on-board survey. The most recent SANDAG survey of this kind is the 2009 Transit On-Board Survey (OBS09). OBS09 collected data on transit trip purpose, origin and destination address, access and egress mode to and from transit stops, the on/off stop for surveyed transit routes, number of transit routes used, and demographic information. The total number of OBS09 survey records is 42,854.

Population synthesis requires two types of data: (1) individual household and person census records from San Diego County; and (2) aggregate data pertaining to the socio-demographic characteristics of each zone in the region. The first type of data is available from the Public Use Micro-data Sample (PUMS), a representative sample of complete household and person records that is released with the Census and American Communities Survey. The second type of data is from the census for the base-year and from land use forecasts for future years.

Table F-8 lists data sources mentioned above, along with other necessary sources of data. Modeling parking location choice, and employer-reimbursement of parking cost, depends on parking survey data collected from 2010 into early 2011 as well as a parking supply inventory. The transponder ownership sub-model requires data on transponder users. Data needed for model validation and calibration include traffic counts, transit-boarding data, Census Transportation Planning Package (CTPP) data, and Caltrans Performance Measurement System (PeMS) and Highway Performance Monitoring System (HPMS) data.
Table F-8: ABM Input Data

<table>
<thead>
<tr>
<th>SANDAG Surveys</th>
<th>Outside Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Household Travel Behavior Survey (2006)</td>
<td>• San Diego International Airport Air Passenger Survey</td>
</tr>
<tr>
<td>• Interregional Travel Behavior Survey (2006)</td>
<td>• Traffic and Bicycle counts</td>
</tr>
<tr>
<td>• Transit On-Board Survey (2009)</td>
<td>• Census data</td>
</tr>
<tr>
<td>• Parking Inventory Survey (2010)</td>
<td>• Census Transportation Planning Package (CTPP)</td>
</tr>
<tr>
<td>• Parking Behavior Survey (2010)</td>
<td>• Public Use Micro-data Sample (PUMS)</td>
</tr>
<tr>
<td>• Border Crossing Survey (2011)</td>
<td>• American Communities Survey (ACS)</td>
</tr>
<tr>
<td>• Visitor Survey (2011)</td>
<td>• Census Transportation Planning Package (CTPP)</td>
</tr>
<tr>
<td>• Special Events Survey (2011)</td>
<td>• Public Use Micro-data Sample (PUMS)</td>
</tr>
<tr>
<td>• Commercial Vehicles Survey (2011)</td>
<td>• Transponder ownership data</td>
</tr>
<tr>
<td></td>
<td>• Caltrans’ Performance Measurement System (PeMS)</td>
</tr>
<tr>
<td></td>
<td>• Caltrans’ Highway Performance Monitoring System (HPMS)</td>
</tr>
</tbody>
</table>

Motor Vehicle Emissions Modeling

Emissions Model

On December 14, 2015, the U.S. EPA approved and made available EMFAC2014 for use in state implementation plan (SIP) development and transportation conformity in California. EMFAC2014 is the model that is currently approved for use in conformity determinations. EMFAC2014 v.1.0.7 represents ARB’s current understanding of motor vehicle travel activities and its associated emission levels. EMFAC2014 v.1.0.7 was used to project the regional emissions analysis for the draft 2018 RTIP and Regional Plan conformity redetermination.

Using EMFAC2014 v.1.0.7, projections of daily regional emissions were prepared for reactive organic gases (ROG) and nitrogen oxides (NOx).

The following process emissions are generated for each pollutant:

- All Pollutants – Running Exhaust, Idling Exhaust, Starting Exhaust, Total Exhaust
- ROG and total organic gasses – Diurnal Losses, Hot-Soak Losses, Running Losses, Resting Losses, Total Losses

EMFAC2014 models two fuels types: gasoline and diesel. Fifty-one vehicle classes are modeled in EMFAC2014, including the following vehicle class categories:

- Passenger cars
- Motor homes
- Medium-duty trucks
- Medium-heavy duty trucks
- School buses
- Motor coaches
- Motorcycles
- Light-duty trucks
- Light-heavy duty trucks
- Heavy-heavy duty trucks
- Urban buses
- Other bus types
Regional Emissions Forecasts

Regional transportation forecasts were initiated in May 2018. Output from the ABM was then reformatted and adjusted to be useful for emissions modeling.

Eight-Hour Ozone Standard

Effective December 4, 2017, the U.S. EPA found the motor vehicle emissions budgets for the Reasonable Further Progress milestone year of 2017 from the 2008 Eight-Hour Ozone Attainment Plan for San Diego County adequate for transportation conformity purposes for the 2008 ozone NAAQS. Beginning in May 2018, SANDAG prepared countywide forecasts of average weekday ROG and NOx emissions for 2020, 2030, 2040, and 2050 using the EMFAC2014 v.1.0.7 model. ROG and NOx emissions are based upon the summer season.

The analysis years were selected to comply with 40 CFR 93.106(a)(1) and 93.118(a) of the Transportation Conformity Rule. According to these sections of the Conformity Rule, the first horizon year (2020) must be within ten years from the base year used to validate the regional transportation model (2012), the last horizon year must be the last year of the transportation plan’s forecast period (2050), and the horizon years may be no more than ten years apart (2030 and 2040).

Emissions Modeling Results

An emissions budget is the part of the SIP that identifies emissions levels necessary for meeting emissions reduction milestones, attainment, or maintenance demonstrations.

To determine conformity of the draft 2018 RTIP and redetermine conformity of the Regional Plan, the plan must comply with the emission analysis described in the Regional Emissions Forecast section. Table F-9 shows that the projected ROG and NOx emissions from the draft 2018 RTIP and Regional Plan are below the ROG and NOx budgets.

Table F-9: Draft 2018 RTIP and Revenue Constrained Regional Plan Air Quality Conformity Analysis for 2008 Eight-Hour Ozone Standard

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Weekday Vehicle Starts (1,000s)</th>
<th>Average Weekday Vehicle Miles (1,000s)</th>
<th>ROG</th>
<th>NOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>15,270</td>
<td>85,185</td>
<td>23</td>
<td>18</td>
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Note: Emissions budgets from the 2008 Eight-Hour Ozone Attainment Plan for San Diego County (December 2016), which were found adequate for transportation conformity purposes by the U.S. EPA effective December 4, 2017, are used for all analysis years.
**Exempt Projects**

Section 93.126 of the Transportation Conformity Rule exempts certain highway and transit projects from the requirement to determine conformity. The categories of exempt projects include safety, mass transit, air quality (ridesharing and bicycle, and pedestrian facilities), and other (such as planning studies).

Table F-10 illustrates the exempt projects considered in the draft 2018 RTIP and Revenue Constrained Regional Plan. This table shows short-term exempt projects. Additional unidentified projects could be funded with revenues expected to be available from the continuation of existing state and federal programs.

**Table F-10: Exempt Projects**

<table>
<thead>
<tr>
<th>Project/Program Description</th>
<th>Project/Program Description</th>
</tr>
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<tbody>
<tr>
<td><strong>Bikeway, Rail Trail, and Pedestrian Projects</strong></td>
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<tr>
<td>Bayshore Bikeway</td>
<td>Maple Street Pedestrian Plaza</td>
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<td>Bay-to-Ranch Bikeway</td>
<td>Mid-County Bikeway</td>
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<tr>
<td>Border Access Bicycle Corridor</td>
<td>Mira Mesa Bicycle Corridor</td>
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<tr>
<td>Camp Pendleton Trail</td>
<td>Mission Valley – Chula Vista Bicycle Corridor</td>
</tr>
<tr>
<td>Carlsbad – San Marcos Bicycle Corridor</td>
<td>National City – Highland Avenue Community Corridor</td>
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<tr>
<td>Central Coast Bicycle Corridor</td>
<td>North Park – Centre City Bicycle Corridor</td>
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<tr>
<td>Chula Vista Greenbelt</td>
<td>Oceanside – Bicycle Master Plan</td>
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<tr>
<td>City Heights – Old Town Bicycle Corridor</td>
<td>Otay Mesa Port of Entry Pedestrian/Bicycle Facilities</td>
</tr>
<tr>
<td>Clairemont – Centre City Bicycle Corridor</td>
<td>Park Boulevard Bicycle Connector</td>
</tr>
<tr>
<td>Coastal Rail Trail</td>
<td>Poway Bicycle Loop</td>
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<tr>
<td>East County Northern Bicycle Loop</td>
<td>San Diego Regional Bicycle Plan</td>
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<tr>
<td>East County Southern Bicycle Loop</td>
<td>San Diego River Multi-Use Bicycle and Pedestrian Path</td>
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<tr>
<td>El Camino Real Bicycle Corridor</td>
<td>San Luis Rey River Trail</td>
</tr>
<tr>
<td>Encinitas – San Marcos Bicycle Corridor</td>
<td>Santee – El Cajon Bicycle Corridor</td>
</tr>
<tr>
<td>Escondido Creek Bike Path Bridge and Bikeway</td>
<td>SR 52 Bikeway</td>
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<tr>
<td>Gilman Bicycle Connector</td>
<td>SR 56 Bikeway</td>
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<td>Sweetwater River Trail</td>
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<td>SR 15 Bikeway</td>
<td>Tecate International Border Crossing Pedestrian Facilities</td>
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<td>Interstate 805 Bicycle Corridor</td>
<td>Ted Williams Parkway Pedestrian Bridge at Shoal Creek</td>
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<td>Kearny Mesa – Beaches Bicycle Corridor</td>
<td>Third Avenue Bicycle and Pedestrian Access</td>
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<td>Kensington – Balboa Park Bicycle Corridor</td>
<td>Vista Way Bicycle Connector</td>
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<td>West Bernardo Bike Path</td>
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Draft 2018 Regional Transportation Improvement Program
Table F-10 (continued)
Exempt Projects

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<thead>
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<th>Project/Program Description</th>
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<tr>
<td><strong>Safety Improvement Program</strong></td>
<td><strong>Transportation Systems Management</strong></td>
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<tr>
<td>Bridge Rehabilitation/ Preservation/Retrofit</td>
<td>Traveler Information System</td>
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<tr>
<td>Collision Reduction</td>
<td>Bus on Shoulder Service</td>
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<tr>
<td>Emergency Response</td>
<td>Compass Card</td>
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<tr>
<td>Hazard Elimination/Safe Routes to School</td>
<td>FasTrak®</td>
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<td>Highway Maintenance</td>
<td>Freeway Service Patrol</td>
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<tr>
<td>Safety Improvement Program</td>
<td>Vehicle Automation</td>
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<tr>
<td>Roadway/Roadside Preservation</td>
<td>Regional Vanpool Program</td>
</tr>
<tr>
<td>Smart Growth Incentive Program</td>
<td>Multimodal Integration and Performance-Based Management</td>
</tr>
<tr>
<td>Safe Routes to Transit</td>
<td>Intelligent Transportation System for Transit</td>
</tr>
<tr>
<td>Safe Routes to School</td>
<td>ITS Operations</td>
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<td><strong>Transit Terminals</strong></td>
<td><strong>Joint Transportation Operations Center</strong></td>
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<tr>
<td>Airport Intermodal Transit Center/Terminal</td>
<td>Trolley Fiber Communication Network</td>
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<tr>
<td>San Ysidro Intermodal Transit Center/Terminal</td>
<td>Electronic Payment Systems and Universal Transportation Account</td>
</tr>
<tr>
<td></td>
<td>Various Traffic Signal Optimization/Prioritization</td>
</tr>
<tr>
<td></td>
<td>Transit Infrastructure Electrification</td>
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<td></td>
<td>Employer Services and Outreach</td>
</tr>
<tr>
<td></td>
<td>Commuter Services and Bike Program</td>
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<td></td>
<td>Mobility Hubs</td>
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<tr>
<td></td>
<td>Active Traffic and Demand Management</td>
</tr>
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<td></td>
<td>Shared Mobility Services</td>
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Implementation of Transportation Control Measures

There are four federally approved Transportation Control Measures (TCMs) that must be implemented in San Diego, which the SIP refers to as transportation tactics. They include: (1) ridesharing; (2) transit improvements; (3) traffic flow improvements; and (4) bicycle facilities and programs.

These TCMs were established in the 1982 SIP, which identified general objectives and implementing actions for each tactic. The TCMs have been fully implemented. Ridesharing, transit, bicycling, and traffic flow improvements continue to be funded, although the level of implementation established in the SIP has been surpassed.
Interagency Consultation Process and Public Input

The consultation process followed to prepare the Air Quality Conformity Analysis for the draft 2018 RTIP and Regional Plan complies with the San Diego Transportation Conformity Procedures adopted in July 1998. In turn, these procedures comply with federal requirements under 40 CFR 93. Interagency consultation involves SANDAG (as the MPO for San Diego County), the APCD, Caltrans, CARB, U.S. DOT, and U.S. EPA.

Consultation is a three-tier process that:

1. Formulates and reviews drafts through a conformity working group.

2. Provides local agencies and the public with opportunities for input through existing regional advisory committees and workshops.

3. Seeks comments from affected federal and state agencies through participation in the development of draft documents and circulation of supporting materials prior to formal adoption.

SANDAG consulted on the development of the Air Quality Conformity Analysis of the draft 2018 RTIP and Regional Plan conformity redetermination at meetings of the San Diego Region CWG, as follows:

- On February 7, 2018, SANDAG staff presented the schedule for the preparation of the draft 2018 RTIP and its air quality conformity analysis. Staff confirmed that a redetermination of conformity would be done for the Regional Plan, in conjunction with the draft 2018 RTIP for consistency purposes.

- On March 7, 2018, SANDAG staff presented information about the criteria and procedures to be followed for its conformity analysis. Staff presented information on the 2050 Regional Growth Forecast, Travel Demand Model, Transportation Control Measures, the Revenue Constrained financial assumptions, latest emissions model and emissions budgets, and public involvement and outreach.

- On March 29, 2018, SANDAG staff distributed the draft list of capacity increasing and non-capacity increasing projects to be included in the draft 2018 RTIP for interagency consultation. The project lists were discussed at the April 4, 2018, CWG meeting.

- On May 18, 2018, SANDAG released the draft air quality conformity analysis of the draft 2018 RTIP and Regional Plan to the CWG for a 30-day review-and-comment period. The draft air quality analysis will be discussed at the June 6, 2018, meeting of the CWG. The draft 2018 RTIP will be presented to the TransNet Independent Taxpayer Oversight Committee on July 10, 2018, for input.

- On July 20, 2018, the SANDAG Transportation Committee will be asked to recommend that the SANDAG Board release the draft 2018 RTIP and its conformity determination and the Regional Plan conformity redetermination for a 30-day public review period.

- On July 27, 2018, the SANDAG Board will be asked to release the draft 2018 RTIP and its conformity determination and the Regional Plan conformity redetermination for public comment. A public hearing is
anticipated to be scheduled for the September 7, 2018, Transportation Committee meeting to discuss the Final 2018 RTIP and its conformity determination and the Regional Plan conformity redetermination.

- On September 7, 2018, the SANDAG Transportation Committee will hold a public hearing and be asked to recommend that the SANDAG Board adopt the Final 2018 RTIP and its conformity determination and the Regional Plan conformity redetermination.

- On September 28, 2018, the SANDAG Board will be asked to adopt the Final 2018 RTIP and its conformity determination and the Regional Plan conformity redetermination.

Members of the public are welcomed to provide comments at meetings of the CWG, the Transportation Committee, and the SANDAG Board of Directors.
## Table F-11: Phased Highway Projects – Draft 2018 Regional Transportation Improvement Program

<table>
<thead>
<tr>
<th>Conformity Analysis Year</th>
<th>Freeway</th>
<th>From</th>
<th>To</th>
<th>Existing</th>
<th>With Improvements</th>
<th>Capital Cost ($2014); millions</th>
<th>Capital Cost ($YOE); millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managed Lanes / Toll Lanes</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
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<td>8F+2ML</td>
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<tr>
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<td>8F/14F+2ML</td>
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<td>Mexico</td>
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<td>$503</td>
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### Table F-11 (continued)
Phased Highway Projects – Draft 2018 Regional Transportation Improvement Program

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<th>Conformity Analysis Year</th>
<th>Freeway</th>
<th>From</th>
<th>To</th>
<th>Existing</th>
<th>With Improvements</th>
<th>Capital Cost ($2014); millions</th>
<th>Capital Cost ($YOE); millions</th>
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| **Highway Projects**          |         |               |               |          |                   |                                 |                                |
| 2025         | SR 67   | Mapleview St  | Gold Bar Ln   | 2C       | 4C                | $60                             | $79                            |
| 2025         | SR 76   | Mission       | I-15          | 2C       | 4C                | $305                            | $305                           |
| 2035         | SR 52   | Mast Blvd     | SR 125        | 4F       | 6F                | $76                             | $131                           |
| 2040         | SR 67   | Gold Bar Ln   | Scripps Poway | 2C/4C    | 4C                | $180                            | $357                           |
### Table F-11 (continued)
**Phased Highway Projects – Draft 2018 Regional Transportation Improvement Program**

<table>
<thead>
<tr>
<th>Year</th>
<th>Freeway</th>
<th>From</th>
<th>To</th>
<th>Existing</th>
<th>With Improvements</th>
<th>Capital Cost ($2014); millions</th>
<th>Capital Cost ($YOE); millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2040</td>
<td>SR 94</td>
<td>SR 125</td>
<td>Avocado Blvd</td>
<td>4F</td>
<td>6F</td>
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<td>$221</td>
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<td>2050</td>
<td>I-8</td>
<td>2nd St</td>
<td>Los Coches</td>
<td>4F/6F</td>
<td>6F</td>
<td>$35</td>
<td>$88</td>
</tr>
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<td>SR 52</td>
<td>I-5</td>
<td>I-805</td>
<td>4F</td>
<td>6F</td>
<td>$111</td>
<td>$276</td>
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<td>I-5</td>
<td>I-15</td>
<td>4F</td>
<td>6F</td>
<td>$141</td>
<td>$351</td>
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<tr>
<td>2050</td>
<td>SR 94</td>
<td>Avocado Blvd</td>
<td>Jamacha</td>
<td>4C</td>
<td>6C</td>
<td>$91</td>
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<tr>
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<td>SR 94</td>
<td>Jamacha</td>
<td>Steele Canyon Rd</td>
<td>2C/4C</td>
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<td>$40</td>
<td>$100</td>
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<td>SR 125</td>
<td>San Miguel Rd</td>
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<td>2050</td>
<td>SR 125</td>
<td>SR 905</td>
<td>San Miguel Rd</td>
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<td>8F</td>
<td>$323</td>
<td>$661</td>
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<tr>
<td>2050</td>
<td>SR 67</td>
<td>Scripps Poway</td>
<td>Dye Rd</td>
<td>2C/4C</td>
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<td>$396</td>
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### Operational Projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Freeway</th>
<th>From</th>
<th>To</th>
<th>Existing</th>
<th>With Improvements</th>
<th>Capital Cost ($2014); millions</th>
<th>Capital Cost ($YOE); millions</th>
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<td>2040</td>
<td>SR 76</td>
<td>I-15</td>
<td>Couser Canyon</td>
<td>2C/4C</td>
<td>4C/6C+ Operational</td>
<td>$131</td>
<td>$261</td>
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<tr>
<td>2050</td>
<td>I-5</td>
<td>I-15</td>
<td>I-8</td>
<td>8F</td>
<td>8F+ Operational</td>
<td>$1,177</td>
<td>$2,919</td>
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<tr>
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<td>I-8</td>
<td>I-5</td>
<td>SR 125</td>
<td>8F/10F</td>
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### Managed Lanes Connectors

<table>
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<th>To</th>
<th>Capital Cost ($2014); millions</th>
<th>Capital Cost ($YOE); millions</th>
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</thead>
<tbody>
<tr>
<td>2025</td>
<td>I-5</td>
<td>SR 78</td>
<td>South to East &amp; West to North, North to East and West to South</td>
<td>$253</td>
<td>$332</td>
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<tr>
<td>2025</td>
<td>I-5</td>
<td>I-805</td>
<td>North to North &amp; South to South</td>
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<td>$66</td>
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<tr>
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<td>I-15</td>
<td>SR 78</td>
<td>East to South &amp; North to West</td>
<td>$106</td>
<td>$139</td>
</tr>
<tr>
<td>2025</td>
<td>SR 15</td>
<td>I-805</td>
<td>North to North &amp; South to South</td>
<td>$81</td>
<td>$106</td>
</tr>
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<td>I-805</td>
<td>SR 94</td>
<td>North to West &amp; East to South</td>
<td>$101</td>
<td>$133</td>
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<tr>
<td>2035</td>
<td>SR 15</td>
<td>SR 94</td>
<td>South to West &amp; East to North</td>
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<tr>
<td>2040</td>
<td>I-805</td>
<td>SR 52</td>
<td>West to North &amp; South to East</td>
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<td>2050</td>
<td>I-15</td>
<td>SR 52</td>
<td>West to North &amp; South to East</td>
<td>$130</td>
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### Table F-11 (continued)
Phased Highway Projects – Draft 2018 Regional Transportation Improvement Program

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<th>Year</th>
<th>Freeway</th>
<th>From</th>
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<th>Capital Cost ($YOE); millions</th>
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<tr>
<td>2016</td>
<td>SR 11/SR 905</td>
<td>SR 125</td>
<td>EB SR 905 and WB SR 11 to NB SR 125, NB SR 905 to NB SR 125</td>
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<td>$28</td>
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<td>$358</td>
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<tr>
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<td>SR 11/SR 905</td>
<td>SR 125</td>
<td>SB 125 to WB SR 905, SB SR 125 to EB SR 11, SB SR 125 to SB SR 905</td>
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<td>$90</td>
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<td>SR 94</td>
<td>SR 125</td>
<td>South to East</td>
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<td>$88</td>
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<tr>
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<td>I-5</td>
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<td>SR 94</td>
<td>SR 125</td>
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<td>2050</td>
<td>I-15</td>
<td>SR 56</td>
<td>North to West</td>
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<td>$265</td>
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<td>Year</td>
<td>Service</td>
<td>Route</td>
<td>Description</td>
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<td>Capital Cost ($YOE); millions</td>
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<tr>
<td>2025</td>
<td>COASTER</td>
<td>398</td>
<td>Double tracking (20-minute peak frequencies and 120-minute off-peak frequencies and station/platform at Del Mar Fairgrounds)</td>
<td>$445</td>
<td>$445</td>
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<td>2025</td>
<td>SPRINT</td>
<td>399</td>
<td>SPRINT efficiency improvements (20-minute frequencies by 2025); double tracking Oceanside to Escondido for 10-minute frequencies and six rail grade separations at El Camino Real, Melrose Dr, Vista Village Dr/ Main St, North Dr, Civic Center, Auto Pkwy and Mission Ave</td>
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<td>$1339</td>
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<td>Mid-Coast Trolley Extension</td>
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<td>2025</td>
<td>Rapid</td>
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<td>North Park to Downtown San Diego via 30th St</td>
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<td>$52</td>
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<td>2025</td>
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<td>La Mesa to Ocean Beach via Mid-City, Hillcrest, Old Town</td>
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<td>120</td>
<td>Kearny Mesa to Downtown via Mission Valley</td>
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<td>2025</td>
<td>Rapid</td>
<td>SR 163 DARs</td>
<td>Kearny Mesa to Downtown via SR 163. Stations at Sharp/Children’s Hospital, University Ave, and Fashion Valley Transit Center</td>
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<td>$196</td>
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<td>2025</td>
<td>Rapid</td>
<td>550</td>
<td>SDSU to Palomar Station via East San Diego, Southeast San Diego, National City</td>
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<td>$78</td>
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<td>2025</td>
<td>Rapid</td>
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<td>South Bay Rapid (Otay Mesa to Downtown) and Otay Mesa ITC (formerly Route 628)</td>
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<td>H St Trolley Station to Millennia via H St Corridor, Southwestern College</td>
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<td>$49</td>
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<td>2025</td>
<td>Rapid</td>
<td>905</td>
<td>Extension of Iris Trolley Station to Otay Mesa Port of Entry (POE) route with new service to Otay Mesa East POE and Imperial Beach</td>
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<td>$2</td>
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<td>2025</td>
<td>Streetcar</td>
<td>554</td>
<td>Hillcrest/Balboa Park/Downtown San Diego Loop</td>
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<td>$38</td>
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<td>2025</td>
<td>Airport Express</td>
<td>--</td>
<td>Airport Express Routes</td>
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<td>Shuttle</td>
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<td>San Marcos Shuttle</td>
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<td>2025</td>
<td>Transit Lanes</td>
<td>SR 15 from I-805 to I-8</td>
<td>Transit Lane improvement for routes 235, 280/290, 653, and Airport Express Route to Tijuana International Airport. Existing facility at 8F, with improvement of 8F+2TL</td>
<td>$56</td>
<td>$56</td>
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<td>2025</td>
<td>Local Bus Routes - 15 minutes in key corridors</td>
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<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Conformity Analysis Year</td>
<td>Service</td>
<td>Route</td>
<td>Description</td>
<td>Capital Cost ($2014); millions</td>
<td>Capital Cost ($YOE); millions</td>
</tr>
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<td>--------------------------</td>
<td>---------</td>
<td>-------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>2035 COASTER</td>
<td>398</td>
<td></td>
<td>Double tracking (20-minute peak frequencies and 60-minute off-peak frequencies, grade separations at Leucadia Blvd, stations/platforms at Convention Center/Gaslamp Quarter, and extension to Camp Pendleton)</td>
<td>$900</td>
<td>$1,357</td>
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<td>2035 Trolley</td>
<td>510</td>
<td></td>
<td>Phase I - Blue Line Frequency Enhancements and rail grade separations at 28th St, 32nd St, E St, H St, Palomar St, and Blue/Orange Track Connection at 12th/Imperial</td>
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<td>$292</td>
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<td>2035 Trolley</td>
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<td>Orange Line Frequency Enhancements and four rail grade separations at Euclid Ave, Broadway/Lemon Grove Ave, Allison Ave/University Ave, Severin Dr</td>
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<td>$402</td>
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<td>UTC to COASTER Connection (extension of Route 510)</td>
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<td>562</td>
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<td>Phase I - San Ysidro to Kearny Mesa via Chula Vista via Highland Ave/4th Ave, National City, Southeast San Diego, Mid-City, and Mission Valley</td>
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<td>Spring Valley to SDSU via Southeast San Diego, Downtown, Hillcrest, Mid-City</td>
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<td>$173</td>
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<td>2035 Rapid</td>
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<td>Point Loma to Kearny Mesa via Old Town, Linda Vista</td>
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<td>30</td>
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<td>Old Town to Sorrento Mesa via Pacific Beach, La Jolla, UTC</td>
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<td>Fashion Valley to UTC/UC San Diego via Linda Vista and Clairemont</td>
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<td>2035 Rapid</td>
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<td>El Cajon Transit Center to San Diego International Airport ITC via SR 94, City College (peak only)</td>
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<td>$27</td>
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<td>2035 Rapid</td>
<td>473</td>
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<td>Phase I – Solana Beach to UTC/UC San Diego via Hwy 101 Coastal Communities, Carmel Valley</td>
<td>$43</td>
<td>$66</td>
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<td>2035 Rapid</td>
<td>635</td>
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<td>Eastlake to Palomar Trolley via Main St Corridor</td>
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<td>$98</td>
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<td>2035 Rapid</td>
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<td>Iris Trolley Station to Otay Mesa via Otay, Airway Dr, SR 905 Corridor</td>
<td>$38</td>
<td>$67</td>
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<td>640A/640B</td>
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<td>Route 640A: I-5 - San Ysidro to Old Town Transit Center via City College  640B: I-5 Iris Trolley/Palomar to Kearny Mesa via Chula Vista, National City and City College</td>
<td>$153</td>
<td>$206</td>
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### Table F-12 (continued)

**Phased Transit Services – Draft 2018 Regional Transportation Improvement Program**

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<th>Route</th>
<th>Description</th>
<th>Capital Cost ($2014); millions</th>
<th>Capital Cost ($YOE); millions</th>
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<tbody>
<tr>
<td>2035</td>
<td>Rapid</td>
<td>688/689/690</td>
<td>Route 688: San Ysidro to Sorrento Mesa via I-805/I-15/SR-52 Corridors (Peak Only)</td>
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<td>$653</td>
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<td></td>
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<td></td>
<td>Route 689: Otay Mesa Port of Entry (POE) to UTC/Torrey Pines via Otay Ranch/ Millennia, I-805 Corridor (Peak Only)</td>
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<td></td>
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<td>Route 690: Mid-City to Sorrento Mesa via I-805 Corridor (Peak Only)</td>
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<td>2035</td>
<td>Rapid</td>
<td>910</td>
<td>Coronado to Downtown via Coronado Bridge</td>
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<td>Streetcar</td>
<td>553</td>
<td>Downtown San Diego: Little Italy to East Village¹</td>
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<td>Streetcar</td>
<td>555</td>
<td>30th St to Downtown San Diego via North Park/Golden Hill¹</td>
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<td>$45</td>
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<td></td>
<td>Local Bus Routes - 10 minutes in key corridors</td>
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<td>588</td>
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<td>Phase II - Blue Line rail grade separations at Taylor St and Ash St</td>
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<td>Trolley</td>
<td>563</td>
<td>Pacific Beach to Balboa and Grossmont to Kearny Mesa</td>
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<td>$1,229</td>
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<td>Solana Beach to Sabre Springs Rapid station via Carmel Valley</td>
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<td>Carlsbad to Escondido Transit Center via Palomar Airport Rd</td>
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<td>Phase II - Oceanside to Solana Beach via Hwy 101 Coastal Communities</td>
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<td>Camp Pendleton to Carlsbad Village via College Blvd, Plaza Camino Real</td>
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<td>Temecula (peak only) Extension of Escondido to Downtown Rapid (formerly Route 610)</td>
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<td>$198</td>
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<td>Rapid</td>
<td>636</td>
<td>SDSU to Spring Valley via East San Diego, Lemon Grove, Skyline</td>
<td>$39</td>
<td>$79</td>
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<td>2040</td>
<td>Rapid</td>
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<td>North Park to 32nd St Trolley Station via Golden Hill</td>
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<td>$66</td>
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<td>2040</td>
<td>Rapid</td>
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<td>Chula Vista to Palomar Airport Rd Business Park via I-805/I-5 (peak only)</td>
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<td>$166</td>
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<td>Rapid</td>
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<td>Mid-City to Palomar Airport Rd via Kearny Mesa/I-805/I-5 (peak only)</td>
<td>$10</td>
<td>$21</td>
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<td>Conformity Analysis Year</td>
<td>Service</td>
<td>Route</td>
<td>Description</td>
<td>Capital Cost ($2014); millions</td>
<td>Capital Cost ($YOE); millions</td>
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<tr>
<td>2040</td>
<td>Streetcar</td>
<td>565</td>
<td>Mission Beach to La Jolla via Pacific Beach</td>
<td>$25</td>
<td>$50</td>
</tr>
<tr>
<td>2050</td>
<td>COASTER</td>
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<td>COASTER double tracking (completes double tracking; includes Del Mar Tunnel) and grade separations</td>
<td>$1,365</td>
<td>$3,372</td>
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<td>SPRINT  E</td>
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<td>Branch Extension to Westfield North County</td>
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<td>$437</td>
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<td>Green Line Frequency Enhancements</td>
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<td>Trolley</td>
<td>560</td>
<td>SDSU to Downtown via El Cajon Blvd/Mid-City (transition of Mid-City Rapid to Trolley)</td>
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<td>$5,005</td>
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<tr>
<td>2050</td>
<td>Trolley</td>
<td>562</td>
<td>Phase II - Kearny Mesa to Carmel Valley</td>
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<td>$1,443</td>
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<tr>
<td>2050</td>
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<td>Phase II - Balboa to Kearny Mesa</td>
<td>$689</td>
<td>$1,708</td>
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<td>Rapid</td>
<td>471</td>
<td>Downtown Escondido to East Escondido</td>
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<td>$80</td>
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<td>Rapid</td>
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<td>Oceanside to Vista via Mission Ave/Santa Fe Rd Corridor</td>
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<td>$127</td>
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<td>El Cajon to UTC via Santee, SR 52, I-805</td>
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<td>2050</td>
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<td>El Cajon to Sorrento Mesa via SR 52, Kearny Mesa</td>
<td>$12</td>
<td>$29</td>
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Notes:  
1. Streetcar cost is representative of 10 percent of the total capital cost.  
2. Implementation of these services is dependent upon funding from aviation and other private sources.  
3. Capital cost to be funded by the City of San Marcos.
<table>
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<tr>
<th>Conformity Analysis Year</th>
<th>SANDAG ID</th>
<th>Lead Agency</th>
<th>Project Title</th>
<th>Project Description</th>
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</thead>
<tbody>
<tr>
<td>2020</td>
<td>CB04A</td>
<td>Carlsbad</td>
<td>El Camino Real Widening - Tamarack Ave to Chestnut Ave</td>
<td>In Carlsbad, widen El Camino Real to prime arterial standards with three travel lanes, bike lanes, and sidewalks in each direction including intersection improvements at Tamarack Avenue and Chestnut Avenue</td>
</tr>
<tr>
<td>2020</td>
<td>CB04B</td>
<td>Carlsbad</td>
<td>El Camino Real and Cannon Rd</td>
<td>In Carlsbad, along the eastside of El Camino Real just south of Cannon Road, widen to prime arterial standards with three through lanes, a right turn lane, and a sidewalk approaching the intersection</td>
</tr>
<tr>
<td>2020</td>
<td>CB13</td>
<td>Carlsbad</td>
<td>Poinsettia Ln Reach E - Cassia Dr to Skimmer Ct</td>
<td>In Carlsbad, from Cassia Drive to Skimmer Court, construct a new 4-lane roadway with median, bike lanes, and sidewalks/trails to major arterial standards</td>
</tr>
<tr>
<td>2025</td>
<td>CB22</td>
<td>Carlsbad</td>
<td>Avenida Encinas, widen from Palomar Airport Rd to EWPCF</td>
<td>In Carlsbad, Avenida Encinas from Palomar Airport Road southerly to existing improvements adjacent to the Embarcadero Lane, roadway widening to secondary arterial standards</td>
</tr>
<tr>
<td>2025</td>
<td>CB31</td>
<td>Carlsbad</td>
<td>El Camino Real – La Costa Ave to Arenal Rd</td>
<td>In Carlsbad, along El Camino Real from 700 feet north of La Costa Avenue to Arenal Road, widening along the southbound side of the roadway to provide three travel lanes and a bike lane in accordance with prime arterial standards</td>
</tr>
<tr>
<td>2025</td>
<td>CB32</td>
<td>Carlsbad</td>
<td>El Camino Real Widening - Cassia to Camino Vida Roble</td>
<td>In Carlsbad, widen El Camino Real from 900 feet north of Cassia Road to Camino Vida Roble, along the northbound side of the roadway to provide three travel lanes and a bike lane in accordance with prime arterial standards</td>
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<tr>
<td>2025</td>
<td>CB34</td>
<td>Carlsbad</td>
<td>Palomar Airport Rd - Palomar Airport Rd to Paseo Del Norte</td>
<td>In Carlsbad, widening along eastbound Palomar Airport Road to provide a dedicated right turn lane to southbound Paseo Del Norte</td>
</tr>
<tr>
<td>2025</td>
<td>CB35</td>
<td>Carlsbad</td>
<td>Palomar Airport Rd - Palomar Airport Rd to Paseo Del Norte</td>
<td>In Carlsbad, lengthen the left turn pocket along eastbound Palomar Airport Road to northbound Paseo Del Norte</td>
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<tr>
<td>2025</td>
<td>CHV08</td>
<td>Chula Vista</td>
<td>Willow St Bridge Project - Bonita Rd to Sweetwater Rd</td>
<td>Replace 2-lane bridge with 4-lane bridge (Phase II)</td>
</tr>
<tr>
<td>2025</td>
<td>CHV69</td>
<td>Chula Vista</td>
<td>Heritage Rd Bridge</td>
<td>Heritage Road from Main Street/Nirvana Avenue to Entertainment Circle, widen and lengthen bridge over Otay River from 4-lane to 6-lane bridge that accommodates shoulders, sidewalk, and median; project is on Heritage Road from the intersection of Main Street and Nirvana Avenue to Entertainment Circle</td>
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## Table F-13 (continued)
**Phased Arterial Projects – Draft 2018 Regional Transportation Improvement Program**

<table>
<thead>
<tr>
<th>Conformity Analysis Year</th>
<th>SANDAG ID</th>
<th>Lead Agency</th>
<th>Project Title</th>
<th>Project Description</th>
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<tr>
<td>2025</td>
<td>CNTY14A</td>
<td>San Diego County</td>
<td>South Santa Fe Ave South</td>
<td>South Santa Fe from 700 feet south of Woodland Drive to Smilax Road, widening of South Santa Fe Avenue to a 5-lane major road with a center left turn lane, curb, gutter, sidewalk, bike lanes, and drainage improvements from 700 feet south of Woodland Drive to Smilax Road</td>
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<tr>
<td>2025</td>
<td>CNTY21</td>
<td>San Diego County</td>
<td>Bradley Ave Overpass at SR 67</td>
<td>Widen Bradley Avenue from Magnolia Avenue to Mollison Avenue; widen from 2 lanes to 4 lanes plus sidewalks. Replace 2-lane bridge over SR 67 with a 6-lane bridge which accommodates turn pockets</td>
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<tr>
<td>2025</td>
<td>CNTY24</td>
<td>San Diego County</td>
<td>Cole Grade Rd</td>
<td>Cole Grade Road from north of Horse Creek Trail to south of Pauma Heights Road, widen to accommodate 14-foot traffic lane in both directions, 12-foot center 2-way left turn, 6-foot bike lane and 10-foot pathway</td>
</tr>
<tr>
<td>2025</td>
<td>CNTY34</td>
<td>San Diego County</td>
<td>Dye Rd Extension</td>
<td>Dye Road to San Vicente Road - in Ramona, study, design, and construct a 2-lane community collector road with intermittent turn lanes, bike lanes, curb, gutter, and pathway/walkway</td>
</tr>
<tr>
<td>2025</td>
<td>CNTY35</td>
<td>San Diego County</td>
<td>Ramona St Extension</td>
<td>From Boundary Avenue to Warnock Drive - in the community of Ramona, construct new road extension, 2 lanes with intermittent turn lanes, bike lanes, and walkway/pathway</td>
</tr>
<tr>
<td>2025</td>
<td>CNTY88</td>
<td>San Diego County</td>
<td>Ashwood Street Corridor Improvements – Mapleview to Willow</td>
<td>Ashwood Street/Wildcat Canyon Road from Mapleview Street to 1100 feet north of Willow Road in Lakeside-traffic signal improvements at Mapleview and Ashwood; traffic signal installation at Willow and Ashwood/Wildcat Canyon; and the addition of turn lanes, addition of a passing lane in a non-urbanized area, bike lanes, and pedestrian facilities</td>
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<tr>
<td>2025</td>
<td>ESC02A</td>
<td>Escondido</td>
<td>East Valley/Valley Center</td>
<td>Widen roadway from 4 to 6 lanes with raised medians and left turn pockets; modify signal at Lake Wohlford and Valley Center Road; widen bridge over Escondido Creek</td>
</tr>
<tr>
<td>2025</td>
<td>ESC04</td>
<td>Escondido</td>
<td>Citracado Pkwy II</td>
<td>West Valley to Harmony Grove, widen from 2 to 4 lanes with raised medians; construct bridge over Escondido Creek</td>
</tr>
<tr>
<td>2025</td>
<td>ESC06</td>
<td>Escondido</td>
<td>El Norte Pkwy Bridge at Escondido Creek - Kaile Ln to Key Lime Way</td>
<td>Construct missing 2-lane bridge at Escondido Creek</td>
</tr>
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### Table F-13 (continued)

#### Phased Arterial Projects – Draft 2018 Regional Transportation Improvement Program

<table>
<thead>
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<td>2025</td>
<td>ESC08</td>
<td>Escondido</td>
<td>Felicita Ave/Juniper St - from Escondido Blvd to Juniper St and from Juniper St to Chestnut St</td>
<td>Widen from 2 to 4 lanes with left turn pockets, raised medians on Felicita; new traffic signals at Juniper and Chestnut, Juniper, and 13th Avenue, Juniper and 15th Avenue; modify traffic signal at Juniper and Felicita</td>
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<tr>
<td>2025</td>
<td>ESC09</td>
<td>Escondido</td>
<td>Ninth Ave – La Terraza Blvd to Spruce St</td>
<td>Widen from 2 to 4 lanes with raised median and modify traffic signals at Ninth Avenue and Tulip Street - design phase</td>
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<tr>
<td>2025</td>
<td>ESC24</td>
<td>Escondido</td>
<td>Centre City Pkwy</td>
<td>Mission Road to SR 78, widen 4 lanes to 6 lanes with intersection improvements</td>
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<tr>
<td>2025</td>
<td>NC01</td>
<td>National City</td>
<td>Plaza Blvd Widening</td>
<td>Plaza Boulevard from Highland Avenue to N Avenue, widen from 2 to 3 lanes including a new traffic lane in each direction, new sidewalks, sidewalk widening, traffic signal upgrades, and interconnection at Plaza Boulevard</td>
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<tr>
<td>2025</td>
<td>O06</td>
<td>Oceanside</td>
<td>Melrose Dr Extension</td>
<td>Melrose Drive from North Santa Fe Avenue to Spur Avenue - in Oceanside, future construction of Melrose Drive; 4-lane arterial highway with medians, sidewalks, and bike lanes between North Santa Fe Avenue and Spur Avenue</td>
</tr>
<tr>
<td>2025</td>
<td>O22</td>
<td>Oceanside</td>
<td>College Blvd - Vista Way to Old Grove Rd</td>
<td>In Oceanside, widen from the existing 4 lanes to 6 lanes with bike lanes and raised median</td>
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<tr>
<td>2025</td>
<td>SD34</td>
<td>San Diego</td>
<td>El Camino Real</td>
<td>In San Diego on El Camino Real from San Dieguito Road to Via de la Valle, reconstruct and widen from 2 to 4 lanes and extend transition lane and additional grading to avoid biological impacts (CIP 52-479.0)</td>
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<tr>
<td>2025</td>
<td>SD70</td>
<td>San Diego</td>
<td>West Mission Bay Dr Bridge</td>
<td>In San Diego, replace bridge and increase from 4- to 6-lane bridge including Class II bike lane (52-643/S00871)</td>
</tr>
<tr>
<td>2025</td>
<td>SD83</td>
<td>San Diego</td>
<td>SR 163/Friars Rd Interchange Modification</td>
<td>Friars Road from Avenida de las Tiendas to Mission Center Road, widen and improve Friars Road and overcrossing; reconstruct interchange including improvements to ramp intersections (Phase I). Construct new connector roadways and structures (Phase II). Construct auxiliary lanes along northbound and southbound SR 163 (Phase III)</td>
</tr>
<tr>
<td>2030</td>
<td>NC01</td>
<td>National City</td>
<td>Plaza Blvd Widening</td>
<td>Plaza Boulevard from I-805 to Euclid Avenue, widen from 2 to 3 lanes, including a new traffic lane in each direction, new sidewalks, sidewalk widening, traffic signal upgrades, and interconnection at Plaza Boulevard</td>
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</table>
## Table F-13 (continued)
### Phased Arterial Projects – Draft 2018 Regional Transportation Improvement Program

<table>
<thead>
<tr>
<th>Conformity Analysis Year</th>
<th>SANDAG ID</th>
<th>Lead Agency</th>
<th>Project Title</th>
<th>Project Description</th>
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<tr>
<td>2025</td>
<td>SD102A</td>
<td>San Diego</td>
<td>Otay Truck Route Widening</td>
<td>On Otay Truck Route in San Diego from Drucker Lane to La Media, add one lane (total 3 lanes) for trucks; from Britannia to La Media, add one lane for trucks and one lane for emergency vehicles (border patrol/fire department access); along Britannia from Britannia Court to the Otay Truck Route - add one lane for trucks</td>
</tr>
<tr>
<td>2025</td>
<td>SD189</td>
<td>San Diego</td>
<td>Sea World Dr Widening and I-5 Interchange Improvements</td>
<td>In San Diego, replace existing 4-lane bridge with an 8-lane bridge with new on/off ramps; widen approach ways to add right turn lanes to improve access to Interstate 5 (CIP 52-706.0)</td>
</tr>
<tr>
<td>2025</td>
<td>SD190</td>
<td>San Diego</td>
<td>Palm Ave/I-805 Interchange</td>
<td>Improvements to the Palm Avenue Bridge over I-805; including repairs to the bridge approaches; a new Project Study Report (PSR) and Preliminary Environmental Assessment Report (PEAR). Phase II of the project will include widening of the bridge, realignment of existing ramps, possible addition of northbound looping entrance ramp, restriping of traffic lanes, and signal modifications</td>
</tr>
<tr>
<td>2025</td>
<td>SM19</td>
<td>San Marcos</td>
<td>Grand Ave Bridge and Street Improvements</td>
<td>From Discovery Street to San Marcos Boulevard, construct 4-lane arterial bridge and a 6-lane arterial street from Craven to Grand Avenue</td>
</tr>
<tr>
<td>2025</td>
<td>SM22</td>
<td>San Marcos</td>
<td>South Santa Fe - Bosstick to Smilax</td>
<td>From Bosstick to Smilax, realign and signalize the South Santa Fe/Smilax intersection (Phase I)</td>
</tr>
<tr>
<td>2025</td>
<td>SM24</td>
<td>San Marcos</td>
<td>Woodland Pkwy Interchange Improvements</td>
<td>From La Moree Road to Rancheros Drive, modify existing ramps at Woodland Parkway and Barham Drive; widen and realign SR 78 undercrossing and associated work</td>
</tr>
<tr>
<td>2025</td>
<td>SM31</td>
<td>San Marcos</td>
<td>Discovery St Improvements</td>
<td>From Via Vera Cruz to Bent Avenue/Craven Road, widen roadway to 4-lane secondary arterial</td>
</tr>
<tr>
<td>2025</td>
<td>SM32</td>
<td>San Marcos</td>
<td>Via Vera Cruz Bridge and Street Improvements</td>
<td>From San Marcos Boulevard to Discovery Street, widen to 4-lane secondary arterial and construct a bridge at San Marcos Creek</td>
</tr>
<tr>
<td>Conformity Analysis Year</td>
<td>SANDAG ID</td>
<td>Lead Agency</td>
<td>Project Title</td>
<td>Project Description</td>
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<td>---------------------</td>
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<tr>
<td>2025 SM42</td>
<td>San Marcos</td>
<td>Street Improvements: Discovery St - Craven Rd to West of Twin Oaks Valley Rd</td>
<td>In the City of San Marcos, on Discovery Street from Craven Road to west of Twin Oaks Valley Road, construct approximately 5,100 lineal feet of a new 6-lane roadway.</td>
<td></td>
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<tr>
<td>2025 SM43</td>
<td>San Marcos</td>
<td>Street Improvements and Widening on Barham Dr</td>
<td>Twin Oaks Valley Road to La Moree Road in the City of San Marcos, on Barham Drive between Twin Oaks Valley Road and La Moree Road, widen and reconstruct the north side of Barham Drive to a 6-lane prime arterial and associated work.</td>
<td></td>
</tr>
<tr>
<td>2025 SM48</td>
<td>San Marcos</td>
<td>Creekside Dr</td>
<td>Construct approximately 3,000 feet of a 2-lane collector road from Via Vera Cruz to Grand Avenue in the City of San Marcos. The road will include two 12-foot lanes, diagonal parking on the north side, and parallel parking on the south side. In addition, the project also will include a 10-foot bike trail meandering along the south side.</td>
<td></td>
</tr>
<tr>
<td>2025 SM55</td>
<td>San Marcos</td>
<td>Borden Rd Widening and Improvements</td>
<td>Borden Road from Vineyard to Richland, widening of Borden Road will add an additional roadway capacity to accommodate increase in traffic volumes.</td>
<td></td>
</tr>
<tr>
<td>2035 SD81</td>
<td>San Diego</td>
<td>Genesee Ave - Nobel Dr to SR 52</td>
<td>In San Diego, future widening to 6-lane major street north of Decoro Street and to a 6-lane primary arterial south of Decoro Street and included Class II bicycle lanes (CIP 52-458.0).</td>
<td></td>
</tr>
<tr>
<td>2035 SD190</td>
<td>San Diego</td>
<td>Palm Avenue/Interstate I-805 Interchange</td>
<td>Phase III will provide the ultimate build-out of the project which will incorporate improvements of Phase II plus the northbound and southbound entrance ramps (CIP 52-640.0).</td>
<td></td>
</tr>
<tr>
<td>2035 SM10</td>
<td>San Marcos</td>
<td>SR 78/Smilax</td>
<td>Construct new interchange at Smilax Road interchange and SR 78 improvements.</td>
<td></td>
</tr>
</tbody>
</table>

**Endnotes**

1. San Diego Forward: The Regional Plan Appendix T: SANDAG Travel Demand Model and Forecasting Documentation includes additional detail regarding the overall model structure.
2. Full-time employment is defined in the SANDAG 2006 household survey as at least 30 hours/week. Part-time is less than 30 hours/week on a regular basis.
3. GP: general purpose lanes of a freeway.
4. Projects listed are included in the San Diego Forward: The Regional Plan and Sustainable Communities Strategy.
5. Projects listed are included in the San Diego Forward: The Regional Plan and Sustainable Communities Strategy.
<table>
<thead>
<tr>
<th>State or Tribe</th>
<th>Area Name</th>
<th>Counties or Areas of Indian Country (p) - partial</th>
<th>Designation</th>
<th>Classification</th>
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<td>Butte County, CA</td>
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<td>Calaveras County, CA</td>
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<td>Los Angeles-San Bernardino Counties (West Mojave Desert), CA</td>
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<td>Nevada Count (Western part), CA</td>
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<td>Riverside County (Coachella Valley), CA</td>
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<td>San Diego County, CA</td>
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<td>San Francisco Bay Area, CA</td>
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<td>Fresno Kern (p) Kings Madera Merced San Joaquin Stanislaus Tulare</td>
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<td>San Luis Obispo (Eastern part), CA</td>
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<td>Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE</td>
<td>New Castle</td>
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<td>District of Columbia</td>
<td>Washington, DC-MD-VA</td>
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<td>Madison, St. Clair</td>
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<td>Marginal</td>
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<td>Indiana</td>
<td>Chicago, IL-IN-WI</td>
<td>Lake (p)</td>
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<tr>
<td>Louisville, KY-IN</td>
<td>Clark, Floyd</td>
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<td>Marginal</td>
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<td>Kentucky</td>
<td>Louisville, KY-IN</td>
<td>Bullitt, Jefferson, Oldham</td>
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<td>Cincinnati, OH-KY</td>
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<td>Columbus, OH</td>
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<td>Delaware, Fairfield, Franklin, Licking</td>
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<td>Salt Lake, Davis, Weber (p), Tooele (p)</td>
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<td>Utah (p)</td>
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<td>Uinta Basin</td>
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<td></td>
<td>Duchesne (p), Uintah (p)</td>
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| Virginia                     | Washington, DC-MD-VA | Arlington  
Fairfax  
Loudoun  
Prince William  
Alexandria City  
Fairfax City  
Falls Church City  
Manassas City  
Manassas Park City | Nonattainment | Marginal |
<table>
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<tr>
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<td>Chicago, IL-IN-WI</td>
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<td>Door (p)</td>
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<tr>
<td>Manitowoc County, WI</td>
<td>Manitowoc (p)</td>
<td>Nonattainment</td>
</tr>
<tr>
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<td>Sheboygan (p)</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>Milwaukee, WI</td>
<td>Milwaukee (p)</td>
<td>Nonattainment</td>
</tr>
<tr>
<td></td>
<td>Ozaukee (p)</td>
<td></td>
</tr>
</tbody>
</table>
| 22 states                   | 51 nonattainment areas | 159 whole counties  
parts of 41 counties  
2 tribal areas |                           |
Subject: Interim Guidance on Conformity Requirements for the 1997 Ozone NAAQS

From: Walter C. Waidelich, Jr.
FHWA Executive Director – HOA-3
Matthew J. Welbes
FTA Executive Director – TOA-3

Date: April 23, 2018

In Reply Refer To:
HCC-30
TCC-Helen Serassio

To: FHWA Division Administrators and FTA Regional Administrators

This guidance provides important information regarding transportation conformity requirements for certain pending planning and project development actions in programs administered by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The U.S. Court of Appeals for the D.C. Circuit recently issued a decision in South Coast Air Quality Management District v. EPA, No. 15-1115, which struck down portions of the 2008 Ozone NAAQS SIP Requirements Rule concerning the ozone National Ambient Air Quality Standards (NAAQS). These portions of the 2008 Ozone NAAQS SIP Requirements Rule addressed implementation requirements for the 2008 ozone NAAQS as well as the anti-backsliding requirements associated with the revocation of the 1997 ozone NAAQS. The impact of the decision addresses two groups of ozone areas described in the decision:

Areas that were maintenance areas for the 1997 ozone NAAQS at the time of revocation and are designated as attainment for the 2008 Ozone NAAQS. These areas have not been required to make transportation conformity determinations for any ozone NAAQS since the 1997 ozone NAAQS were revoked in April 2015 by EPA’s Rule.

Areas that were designated as nonattainment for the 1997 ozone NAAQS at the time of revocation and are designated as attainment for the 2008 Ozone NAAQS. These areas have not been required to make transportation conformity determinations for any ozone NAAQS since the 1997 ozone NAAQS were revoked in April 2015 by EPA’s Rule.

Based on the information in EPA’s Greenbook,¹ we have identified 82 such areas encompassing as many as 228 counties in 24 States that are potentially affected by the

Court’s decision. Please refer to 40 CFR Part 81 and/or EPA’s Greenbook for a full description and maps of these 1997 ozone areas.

While we are waiting for guidance from EPA clarifying the possible impacts, all routine planning and project development actions may proceed throughout the country, except for the following actions within the identified areas that should be considered “on-hold” for now:

- New Metropolitan Long Range Plan and Transportation Improvement Programs (TIP), updates and amendments that include the addition of a project that is not exempt from transportation conformity may not proceed until transportation conformity with the 1997 ozone NAAQS is determined. Exempt projects are listed in 40 CFR 93.126 and 93.127. Administrative modifications to Metropolitan Plans and TIPs may proceed because, by definition in 23 CFR 450.104, those actions do not require a conformity determination.

- Statewide Transportation Improvement Program (STIP) approvals and amendments that include TIPs or non-exempt projects from the 82 identified areas may not proceed, unless the TIP or project is determined to conform with the 1997 ozone NAAQS or is limited to projects that are exempt from transportation conformity. Exempt projects are listed in 40 CFR 93.126 and 93.127. Partial STIP approvals, i.e., those limited to other areas of the state may proceed as described in 23 CFR 450.220(b)(1)(iii).

- Within the 82 identified areas, NEPA approvals for FHWA/FTA projects (40 CFR 93.101) may not proceed unless the existing Metropolitan Plan and TIP include the project. For projects that already completed NEPA, there is no need to delay further action, including: grant obligations; approvals of plans, specifications and estimates; and authorizations to begin construction.

If your office receives questions from a state or local transportation partner related to the impacts of this court decision on proposed planning actions or project approvals beyond what is described above, the most appropriate response is that FHWA and FTA, in coordination with OST and EPA, are reviewing the decision and evaluating next steps, and that we will provide updates as soon as possible. You should not speculate regarding the next steps that may be under review.

For technical assistance, please contact at FHWA Cecilia Ho (202-366-9862), Karen Perritt (202-366-9066) or David Kall (202-366-6276), and at FTA Dwayne Weeks (202-493-0316) or Megan Blum (202-366-0463). You may also contact Gloria Shepherd, Associate Administrator for the FHWA’s Office of Planning, Environment and Realty (202-366-0116), or Sherry Riklin, Acting Associate Administrator for FTA’s Office of Planning and Environment (202-366-5407) with any questions.

Thank you for your immediate attention to this guidance.

---

2 The 82 areas are set forth in the tables below. We have requested confirmation of the affected counties and States from EPA and are awaiting its response.
1997 Ozone Areas Not Covered in Full by the 2008 Ozone Standard, by State (24) and 1997 Ozone Area Name (82)

<table>
<thead>
<tr>
<th>State</th>
<th>1997 Ozone NAAQS Area Name</th>
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</thead>
<tbody>
<tr>
<td>AL</td>
<td>Birmingham, AL</td>
</tr>
<tr>
<td>CA</td>
<td>Amador and Calaveras Cos. (Central Mountain Cos.), CA</td>
</tr>
<tr>
<td>CA</td>
<td>Mariposa and Tuolumne Cos (Southern Mtn), CA</td>
</tr>
<tr>
<td>CA</td>
<td>Sutter Co (Sutter Buttes), CA</td>
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<td>DE</td>
<td>Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE</td>
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<tr>
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<td>Atlanta, GA</td>
</tr>
<tr>
<td>GA</td>
<td>Macon, GA</td>
</tr>
<tr>
<td>GA</td>
<td>Murray Co (Chattahoochee Nat Forest), GA</td>
</tr>
<tr>
<td>IL</td>
<td>St. Louis, MO-IL</td>
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<td>Huntington-Ashland, WV-KY</td>
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<td>MD</td>
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<td>WV</td>
<td>Wheeling, WV-OH</td>
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</tbody>
</table>
Ms. DeLanie Hardy
Executive Director
Association of Metropolitan Planning Organizations
444 North Capitol Street, N.W.
Washington, D.C. 20001

Dear Ms. Hardy:

Thank you for your March 16, 2018 letter to U.S. Environmental Protection Agency (EPA) Administrator Scott Pruitt, regarding our response to the recent decision by the District of Columbia Circuit Court of Appeals on the South Coast Air Quality Management District v. EPA et al litigation. In your letter, you raised several issues as well as concerns regarding the potential impacts of the decision on transportation planning.

On April 23, 2018, the Department of Justice filed a motion with the Circuit Court seeking rehearing on various aspects of the decision including portions of the decision that address transportation conformity requirements in certain former nonattainment and maintenance areas for the 1997 ozone national ambient air quality standard (NAAQS). Your letter was included as part of the court filing in order to illustrate the potential impacts of the decision on the planning process.

We believe that there are a number of areas which can continue to make transportation conformity determinations for ozone. Based on our review of the decision, we have concluded that the decision does not affect transportation conformity requirements for areas that are designated as nonattainment or maintenance for the 2008 ozone NAAQS. In other words, transportation conformity determinations for the 2008 ozone NAAQS should continue to be made as they have been prior to the decision. For example:

- Areas such as Houston, Dallas, the South Coast, and other 2008 ozone NAAQS nonattainment or maintenance areas may continue to satisfy transportation conformity requirements for ozone by demonstrating conformity for the 2008 ozone NAAQS as they have been doing.
- In addition, there are some 2008 ozone NAAQS areas, such as Atlanta, where a portion of the former 1997 ozone NAAQS nonattainment or maintenance area is not covered by a 2008 ozone NAAQS nonattainment or maintenance area. We believe that such areas can fulfill transportation conformity requirements for the 2008 ozone NAAQS by continuing to demonstrate conformity for the 2008 ozone NAAQS nonattainment or maintenance area as they have been doing. In addition to determining conformity for the 2008 ozone NAAQS nonattainment or maintenance area, such
areas could also determine conformity for the entire former 1997 ozone NAAQS nonattainment or maintenance area. Determining conformity for both ozone NAAQS in this way is an acceptable approach for complying with the decision at this time.

We anticipate issuing transportation conformity guidance on the court decision in the near future consistent with the information in this letter, and we are considering your suggestions for additional guidance. We also continue to work with our counterparts in the U.S. Department of Transportation to assist areas with transportation conformity implementation.

If you have questions, please contact Meg Patulski at (734) 214-4842 or patulski.meg@epa.gov.

Sincerely,

[Signature]

Karl Simon, Director
Transportation and Climate Division
Office of Transportation and Air Quality