



**BOARD OF DIRECTORS  
MAY 24, 2013**

**AGENDA ITEM NO. 13-05-4  
ACTION REQUESTED - APPROVE**

**2012 REGIONAL TRANSPORTATION IMPROVEMENT  
PROGRAM: AMENDMENT NO. 2, INCLUDING THE  
AIR QUALITY CONFORMITY ANALYSIS AND  
REDETERMINATION OF THE 2050 REVENUE  
CONSTRAINED REGIONAL TRANSPORTATION PLAN**

File Number 1500300

**Introduction**

On September 28, 2012, the Board of Directors adopted the 2012 Regional Transportation Improvement Program (RTIP), including the regional emissions analysis. The 2012 RTIP is the multiyear program of proposed transportation projects in the San Diego region covering the period FY 2013 to FY 2017. The 2012 RTIP must conform to the State Implementation Plans (SIPs) for air quality. Conformity to the SIP means that transportation activities in the 2012 RTIP will not create new air quality violations, worsen existing violations, or delay the attainment of the national ambient air quality standards.

**Recommendation**

The Transportation Committee recommends that the Board of Directors adopt Resolution No. 2013-25 in substantially the same form as shown in Attachment 1, approving Amendment No. 2 to the 2012 RTIP (Attachment 2), including the air quality conformity analysis and redetermination of the 2050 Revenue Constrained Regional Transportation Plan.

On May 21, 2012, the U.S. Environmental Protection Agency (EPA) designated the San Diego air basin as a non-attainment area for the new 2008 Eight-Hour Ozone standard and classified it as a marginal area. SANDAG is required to conduct a conformity redetermination for the 2050 Regional Transportation Plan (RTP) and the 2012 RTIP for this new standard by July 20, 2013. Amendment No. 2 to the 2012 RTIP is being processed to meet this requirement. This report summarizes the new air quality conformity requirements, the projects included in this amendment, and the results of the review process.

On May 17, the Transportation Committee recommended Board of Directors approval of Amendment No. 2, including its air quality conformity analysis and redetermination for the 2050 RTP.

**Public Review**

On April 5, 2013, the Transportation Committee accepted for review and distribution the Draft 2012 RTIP, Amendment No. 2, including its air quality conformity analysis and the draft air quality conformity redetermination for the 2050 RTP for a 30-day public comment period, which closed May 6, 2013, and no comments were received.

The *TransNet* Independent Taxpayer Oversight Committee (ITOC) reviewed the 2012 RTIP Amendment No. 2 on April 10, 2013, focusing its review on the *TransNet* Program of Projects including compliance with the Ordinance and requirements of Board Policy No. 031: *TransNet* Ordinance and Expenditure Plan Rules. No comments were received.

## **Discussion**

### ***Air Quality Conformity Requirements***

#### *1997 Eight-Hour Ozone Standard*

On April 15, 2004, the U.S. EPA designated the San Diego air basin as non-attainment for the 1997 Eight-Hour Ozone Standard. This designation took effect on June 15, 2004. Several areas that are tribal lands in eastern San Diego County were excluded from the non-attainment designation. La Posta, Cuyapaipe, Manzanita, and Campo are attainment areas for the 1997 Eight-Hour Ozone standard.

Air quality data for 2009, 2010, and 2011 demonstrated that the San Diego air basin attained the 1997 Eight-Hour Ozone Standard. The San Diego County Air Pollution Control District 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. The U.S. EPA found the emission budgets in the plan adequate for use in transportation conformity effective April 4, 2013.

#### *New 2008 Eight-Hour Ozone Standard*

On May 21, 2012, the U.S. EPA designated the San Diego air basin as a non-attainment area for the new 2008 Eight-Hour Ozone standard and classified it as a marginal area with an attainment date of December 31, 2015. Tribal areas that were previously excluded are now included as part of the San Diego region non-attainment designation. This designation became effective on July 20, 2012. SANDAG is required to determine conformity to the new standard by July 20, 2013.

#### *Carbon Monoxide Standard*

The San Diego region also has been designated by the U.S. EPA as a federal maintenance area for the Carbon Monoxide (CO) standard. On November 8, 2004, CARB submitted the 2004 revision to the California SIP for CO to the U.S. EPA. Effective January 30, 2006, the U.S. EPA has approved this maintenance plan as an SIP revision. The U.S. EPA has approved a new model to forecast regional emissions (EMFAC2011) for conformity purposes effective March 6, 2013. EMFAC2011 was used to conduct this conformity analysis.

#### *San Diego Region Conformity Working Group*

With the development of the 2012 RTIP Amendment No. 2, member agencies were provided an opportunity to update their project open to traffic dates to ensure consistency with this air quality conformity analysis. The San Diego Region Conformity Working Group (CWG) received the draft regional emissions analysis for the 2012 RTIP Amendment No. 2 on February 26, 2013, and discussed it on March 6, 2013. A comment was raised from the CWG regarding listing projects for the year 2018 in the project table B.8 in Appendix B of the 2012 RTIP Amendment No. 2 (Attachment 2). After consultation with the U.S. EPA, this was deemed unnecessary since 2018 is not considered a

conformity analysis year. The tables in Attachment 2, Appendix B reflect this decision and on shows projects for years 2015, 2025, 2035, 2040, and 2050. This decision was accepted by the CWG.

### **2012 RTIP Amendment No. 2 Projects**

Attachment 2 provides an update to both the financial capacity and air quality conformity analyses for the 2012 RTIP Amendment No. 2 and conformity redetermination of the 2050 RTP, as well as individual project listings and public participation information. The following is a summary of changes for projects included in this amendment:

#### *California Department of Transportation*

- **SR 76 East (CAL29B)** – This amendment proposes to revise the open to traffic date to Phase 1 (interchange at SR 76 and I-15) from July 2014 to August 2013 and add a second phase (roadway from South Mission to Old Highway 395) to this project with a scheduled open to traffic date of December 2015. Total project remains at \$201,549,000.
- **I-5/Genesee Interchange and Widening (CAL75)** – This amendment proposes to revise the open to traffic date from June 2015 to February 2016. Total project remains at \$93,129,000.
- **I-5/I-8 Connector (CAL77)** – This amendment proposes to revise the open to traffic date from January 2016 to June 2015. Total project remains at \$23,905,000.

#### *City of Chula Vista*

- **Heritage Road Bridge (CHV69)** – This amendment proposes to add this capacity increasing bridge project to the 2012 RTIP. This project will widen and lengthen the bridge over Otay River along Heritage Road and is scheduled to be open to traffic March 2017. Total project is \$17,500,000.

#### *City of Escondido*

- The City of Escondido will be updating two of its projects with an open to traffic date that is consistent with the 2050 RTP, but that is beyond the current FY 2013–FY 2017 RTIP cycle. The open to traffic dates for these projects were originally scheduled during the 2018 analysis year and have been updated to 2025. The projects are **Felicita Avenue/Juniper Street (ESC08)** and **Ninth Avenue (ESC09)** and remain at \$3,830,000 and \$161,000, respectively.

#### *City of Oceanside*

- **SR 76 Widening at Rancho Del Oro Boulevard (O26)** – This amendment proposes to change this project from a capacity increasing project to a non-capacity increasing project as the City of Oceanside has decided that this project will not move beyond the engineering phase. Total project decreases to \$77,000.

#### *Various Agencies*

- **State Route 11 (V11)** – This amendment proposes to update the open to traffic date for Phases 2 and 3 from December 2016 to April 2017. The Phase 1 date remains December 2015. Each phase corresponds to a segment included in the project description. Total project remains at \$722,901,000.

## ***Fiscal Constraint Analysis***

Federal regulations require the 2012 RTIP to be a revenue-constrained document with programmed projects based upon available or committed funding and/or reasonable estimates of future funding. Chapter 2 of Attachment 2 provides updated program summaries including a comparison from the prior approved Amendment No. 1 to 2012 RTIP. The data for the current amendment includes changes made through Amendment No. 5, approved by the Board on April 26, 2013. Based upon the analysis, the projects contained within the 2012 RTIP, including Amendment No. 2, are reasonable when considering available funding sources.

## ***Air Quality Conformity Requirements for the 2012 RTIP***

On September 28, 2012, SANDAG found the 2012 RTIP in conformance with the Regional Air Quality Strategy/SIP for the San Diego region. All of the required regionally significant capacity increasing projects were included in the quantitative emissions analysis conducted for the 2050 San Diego Regional Transportation Plan: Our Region Our Future and the 2012 RTIP. The Federal Highway Administration and the Federal Transit Administration jointly approved the conformity determination for the 2012 RTIP and the conformity redetermination for the 2050 RTP on December 13, 2012.

Projects in RTIP Amendment No. 2 meet the conformity provisions of the Transportation Conformity Rule (40 CFR §93.122(g)). An additional air quality analysis was conducted for all capacity increasing projects in Amendment No. 2 through a quantitative emissions analysis included in Chapter 3 and Appendix B of Attachment 2. All other projects not included in the air quality conformity analysis are either non-capacity increasing or are exempt from the requirement to determine conformity according to the Transportation Conformity Rule (40 CFR §93.122 (b) and 93.122(c)). SANDAG followed interagency consultation procedures to determine which projects are exempt. Amendment No. 2 does not interfere with the timely implementation of Transportation Control Measures. The 2012 RTIP, including Amendment No. 2, remains in conformance with the SIPs.

The quantitative emissions analyses for 2012 RTIP Amendment No. 2 and for the conformity redetermination for the 2050 RTP indicate that they meet the air quality conformity requirements. The CWG reviewed the draft air quality conformity assessment on March 6, 2013.

## **Next Steps**

Pending Board approval on May 24, 2013, staff will submit Amendment No. 2, along with the air quality redetermination of the 2050 RTP, to the U.S. Department of Transportation for an anticipated federal approval date of July 2013.

GARY L. GALLEGOS

Executive Director

Attachments: 1. Resolution No. 2013-25

2. 2012 Regional Transportation Improvement Program, Amendment No. 2

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# **RESOLUTION**

## **NO. 2013-25**

### APPROVING AMENDMENT NO. 2 TO THE 2012 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM

WHEREAS, on September 28, 2012, SANDAG adopted the 2012 Regional Transportation Improvement Program (RTIP) and found the 2012 RTIP in conformance with the applicable State Implementation Plans (SIPs), and with the 2009 Regional Air Quality Strategy (RAQS), in accordance with California law; and

WHEREAS, on December 13, 2012, the United States Department of Transportation (USDOT) determined the 2012 RTIP and 2050 San Diego Regional Transportation Plan: *Our Region Our Future* (2050 RTP) in conformance to the applicable SIPs in accordance with the provisions of 40 Code of Federal Regulations (CFR) Parts 51 and 93; and

WHEREAS, this amendment is consistent with the metropolitan transportation planning regulations per 23 CFR Part 450; and

WHEREAS, this amendment is consistent with the 2050 RTP, and regionally significant capacity-increasing projects have been incorporated into the quantitative air quality emissions analysis and conformity findings conducted for the 2050 RTP and the 2012 RTIP; and

WHEREAS, Amendment No. 2 to the 2012 RTIP continues to provide for timely implementation of transportation control measures contained in the adopted RAQS/SIP for air quality and a quantitative emissions analysis demonstrates that the implementation of the RTIP projects and programs meet all the federally required emissions budget targets; and

WHEREAS, projects in Amendment No. 2 satisfy the transportation conformity provisions of 40 CFR 93.122(g) and all applicable transportation planning requirements per 23 CFR Part 450; and

WHEREAS, the 2012 RTIP Amendment No. 2 projects are fiscally constrained as shown in Tables 2-1a through 2-1c (Attachment 2); and

WHEREAS, Amendment No. 2 is consistent with the Public Participation Policy adopted by the SANDAG Board of Directors;

NOW THEREFORE

BE IT RESOLVED, that the SANDAG Board of Directors does hereby approve Amendment No. 2 to the 2012 RTIP; and

BE IT FURTHER RESOLVED, that SANDAG finds the 2012 RTIP, including Amendment No. 2, is consistent with the 2050 RTP, is in conformance with the applicable SIPs, and with the 2009 RAQS for the San Diego region, is consistent with SANDAG Intergovernmental Review Procedures, and is consistent with SANDAG Public Participation Policy, as amended.

BE IT FURTHER RESOLVED, that all regionally significant capacity-increasing projects included in Amendment No. 2 to the 2012 RTIP are included in the 2050 RTP.

PASSED AND ADOPTED this 24th day of May 2013.

\_\_\_\_\_  
CHAIRPERSON

ATTEST: \_\_\_\_\_

\_\_\_\_\_  
SECRETARY

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista, and County of San Diego.

ADVISORY MEMBERS: California Department of Transportation, Metropolitan Transit System, North County Transit District, Imperial County, U.S. Department of Defense, San Diego Unified Port District, San Diego County Water Authority, Southern California Tribal Chairmen's Association, and Mexico.

2012  
REGIONAL TRANSPORTATION  
IMPROVEMENT PROGRAM (RTIP)  
AMENDMENT NO. 2

May 24, 2013



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**Chapter 1**  
**EXECUTIVE SUMMARY**



# Chapter 1

## EXECUTIVE SUMMARY

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### OVERVIEW

The 2012 Regional/Federal Transportation Improvement Program (RTIP) is a multi-billion dollar, five-year program of major transportation projects funded by federal, state, *TransNet* local sales tax, and other local and private funding covering Fiscal Year (FY) 2012/2013 to FY 2016/2017. The 2012 RTIP, which includes the air quality emissions analysis for all regionally significant projects, requires approval by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The 2013 Federal State Transportation Improvement Program (FSTIP), which includes the SANDAG 2012 RTIP, received federal approval on December 14, 2012.

The 2012 RTIP is a prioritized program designed to implement the region's overall strategy for providing mobility and improving the efficiency and safety of the transportation system, while reducing transportation related air pollution in support of efforts to attain federal and state air quality standards for the region. The 2012 RTIP also incrementally implements the Regional Transportation Plan (RTP), the long-range transportation plan for the San Diego region. A summary of major transit, highway, local street and road, and other projects is provided in Table 1-1.

The 2012 RTIP, published in September 2012, fully documents the RTIP development process, project listings, financial capacity analysis, and the air quality conformity analysis. This report focuses on updated fiscal capacity analysis and new regional air quality emissions analysis for conformity purposes. Amendment No. 2 revises existing capacity increasing projects and reflects changes to project schedules which have been updated for consistency with the air quality analysis for the new 2008 Eight-Hour Ozone standard. Additionally, the U.S. Environmental Protection Agency (EPA) has approved a new model to forecast regional emissions (EMFAC2011) for conformity purposes effective March 6, 2013. The EMFAC2011 was used to conduct this conformity analysis. The Final 2012 RTIP document as well as all subsequent amendments are available on the SANDAG website at [www.sandag.org/2012rtip](http://www.sandag.org/2012rtip).

### Consistency with the 2050 RTP

On October 28, 2011, the SANDAG Board of Directors found the SANDAG 2050 revenue constrained RTP entitled, *2050 San Diego Regional Transportation Plan: Our Region. Our Future.* (2050 RTP), in conformance with federal air quality and planning regulations, and adopted the 2050 RTP. The FHWA and the FTA issued a finding of conformity for the 2050 RTP on December 2, 2011. The 2012 RTIP, including Amendment No. 2, is consistent with the 2050 RTP. As a financially-constrained document, the 2012 RTIP contains only those major transportation projects listed in the revenue-constrained plan of the 2050 RTP.

### Financial Capacity Analysis

Federal regulations require the 2012 RTIP to be a revenue-constrained document with programmed projects based upon available or committed funding and/or reasonable estimates of future funding. Funding assumptions are generally based upon: (1) authorized or appropriated levels of federal and state funding

from current legislation; (2) conservative projections of future federal and state funding based upon a continuation of current funding levels; (3) the most current revenue forecasts for the *TransNet* program; and (4) the planning and programming documents of the local transportation providers.

Chapter 4 of the Final 2012 RTIP discusses in detail the financial capacity analysis of major program areas including discussion of available revenues. Chapter 2 of this report provides updated program summaries. Table 1-3 includes the projects proposed for Amendment No. 2. Tables 2-1a to 2-1c demonstrate that the 2012 RTIP is fiscally constrained. Based upon this analysis, the projects contained within the 2012 RTIP, including the projects in Amendment No. 2, are reasonable when considering available funding sources.

## **Air Quality Conformity Determination**

Federal metropolitan planning and air quality regulations prescribe the process for determining air quality conformity. These regulations require that the proposed RTIP: (1) provide for the timely implementation of transportation control measures (TCMs); (2) include a quantitative emissions analysis of projects programmed in the RTIP, including all regionally significant projects; and (3) be within the region's emissions budgets (targets) included in the approved State Implementation Plan (SIP).

The 2012 RTIP Amendment No. 2 programs substantial funds for the implementation of the four TCMs. The four TCMs (identified as "T-tactics") were adopted in the 1982 Regional Air Quality Strategy (RAQS) and subsequent revisions, and were approved by the San Diego Air Pollution Control Board (APCB) and included in the 1982 SIP for air quality improvement. The four TCMs/T-tactics have been fully implemented. As shown in Table 1-2, the TCMs/T-tactic projects programmed for implementation total approximately \$5.2 billion, or approximately 41 percent of the total funds programmed. Included are \$35.4 million for Ridesharing, \$4.9 billion for Transit Improvements, \$95 million for Bicycle Facilities and Programs, and \$115 million for Traffic Flow Improvements. Based upon this analysis, the 2012 RTIP Amendment No. 2 provides for the expeditious implementation of the four existing TCMs in the 2009 RAQS, which remain the federally approved TCMs for the San Diego region.

Quantitative air quality emissions analyses were conducted for the years 2015, 2018 (for carbon monoxide only), 2020 (for reactive organic gases and nitrogen oxides only), 2025, 2035, and 2040 revenue constrained transportation scenarios, as shown in Chapter 3. A quantitative air quality emissions analysis was also conducted for the year 2050 for information purposes. A draft report that documents the results of this analysis was reviewed by the San Diego Region Conformity Working Group (CWG) on March 6, 2013. The Transportation Committee approved the release of the draft report for public comment on April 5, 2013. The 2012 RTIP Amendment No. 2 meets the conditions for determining conformity with the applicable SIP for air quality. Chapter 3 of this report summarizes the air quality conformity analysis conducted. A detailed description of the regional emissions analysis and modeling procedures conducted is included in Appendix B.

## **Public Participation**

It is the policy of SANDAG to engage public participation in the development of agency planning and programming activities. SANDAG has various working groups made up of stakeholders and other members of the public. The public is provided opportunities to participate at SANDAG Board and committee meetings, SANDAG public notices of document availability and public hearings, and through the SANDAG public communications program. In 2011, SANDAG held five public workshops and numerous public outreach events for the development of the 2050 RTP. The projects included in the 2012 RTIP were discussed as part of the extensive RTP public outreach efforts. Pursuant to 23 U.S.C. 134(i). At its meeting on April 5, 2013, the Transportation Committee accepted for review and distribution the Draft 2012 Regional Transportation Improvement Program, Amendment No. 2, including its air quality conformity analysis and the

draft air quality conformity redetermination of the 2050 Revenue Constrained Regional Transportation Plan for a 30-day public comment period, which is scheduled to close on May 6, 2013.

Examples of public outreach efforts and ongoing participation include:

**Independent Taxpayer Oversight Committee (ITOC):** In conformance with the regional transportation sales tax *TransNet* Ordinance, a citizen advisory committee, the ITOC, was established, which oversees projects funded through the *TransNet* program. As the document through which SANDAG identifies *TransNet* projects, the RTIP is reviewed by the ITOC, and their comments on the *TransNet* Program of Projects are conveyed to the SANDAG Transportation Committee, and ultimately to the Board of Directors.

**Social Equity:** For the development of the RTIP, SANDAG relied on the social equity analysis conducted through the development of the 2050 RTP. Included in the process of developing the RTP, SANDAG used performance measures to aid in making decisions intended to ensure compliance with Title VI requirements and environmental justice principles. This process included the creation of a Stakeholder's Working Group (SWG), citizen representatives and community based organization groups. For the 2012 RTIP, SANDAG conducted additional outreach to Low Income/Minority (LIM) areas and tribal organizations to solicit their input through additional electronic notifications. The social equity analysis conducted can be found in Chapter 4 of the 2050 RTP.

**Public Workshops/Outreach:** SANDAG provided information for the RTIP seeking comments during special workshops provided for the development of the 2050 RTP. SANDAG held five workshops in spring 2010 and five workshops in spring 2011. All workshops were conducted in an open house format where participants were invited to attend at any time during the workshop; review maps, displays, and information; ask questions of staff; complete comment cards; or speak to a bilingual English/Spanish transcriber to have their comments recorded. Various public involvement and outreach activities were conducted throughout the San Diego region, which included, but is not limited to, presenting information at city council meetings, community based organizations, and collaboration with regional partners. More information on the outreach efforts for the 2050 RTP can be found on the SANDAG website [www.sandag.org/2050RTP](http://www.sandag.org/2050RTP).

**Expansion of Electronic Notifications:** In addition to the current list of external industry professionals, SANDAG continually strives to expand the notifications to other citizen-involved working groups. SANDAG has established accounts on Facebook and Twitter to ensure maximum outreach.

Appendix A-8 in the 2012 RTIP describes the SANDAG public participation process and includes a copy of the latest Public Participation Policy, which contains the section specifically addressing the RTIP development and amendment process.

**Public Participation Plan (PPP):** The PPP reflects the SANDAG commitment to public participation and involvement to include all residents and stakeholders in the regional planning and decision-making process. The PPP was developed in accordance with guidelines established by the FHWA for metropolitan transportation planning (23 CFR 450.316). It fully complies with Title VI, related nondiscrimination requirements, and reflects the principles of social equity and environmental justice. Included in the PPP are procedures, strategies, and outcomes associated with the ten requirements listed in 23 CFR 450.316. The PPP also fulfills various state and federal public involvement requirements and is available on the SANDAG website at [www.sandag.org/ppp](http://www.sandag.org/ppp).

**Table 1-1**  
**2012 RTIP Amendment No. 2 – Program Summary**  
**Summary of Major Projects by Mode** (in \$000s)

DESCRIPTION	FEDERAL	STATE	TRANSNET	LOCAL/ PRIVATE	TOTAL
<b>Transit Projects</b>					
Blue Line (including vehicle purchase)	\$71,562	\$186,185	\$143,153	\$182,001	\$582,901
Mid-Coast	\$856,975	\$14,537	\$858,578	\$0	\$1,730,090
I-15 BRT	\$24,573	\$17,200	\$104,048	\$88	\$145,909
Mid-City Rapid Bus	\$22,699	\$0	\$21,827	\$0	\$44,526
SuperLoop	\$617	\$0	\$36,560	\$0	\$37,177
South Bay BRT	\$3,339	\$0	\$96,389	\$180	\$99,908
Other BRT	\$0	\$0	\$27,954	\$0	\$27,954
Coastal Corridor (LOSSAN)	\$160,986	\$57,650	\$144,996	\$4,351	\$367,982
Bus/Rail Infrastructure	\$240,298	\$66,622	\$53,334	\$80,997	\$441,251
Bus/Rail Intermodal Stations	\$23,754	\$130,218	\$52,151	\$15,373	\$221,495
Bus/Rail Vehicle Purchase	\$117,897	\$7,760	\$3,420	\$79,460	\$208,538
Other Bus/Rail (Operations/Planning)	\$412,694	\$4,919	\$357,331	\$238,779	\$1,013,723
<i>Subtotal Transit Projects</i>	<b>\$1,935,395</b>	<b>\$485,091</b>	<b>\$1,899,741</b>	<b>\$601,231</b>	<b>\$4,921,456</b>
<b>Highway Projects (Express/HOV lanes and DARs)</b>					
I-5 (HOV/Managed Lanes)	\$101,682	\$213,188	\$429,099	\$22,194	\$766,163
I-15 (Managed Lanes)	\$237,717	\$891,412	\$219,097	\$19,657	\$1,367,883
SR 52	\$67,931	\$291,769	\$162,101	\$1,000	\$522,801
SR 76 (East and Middle)	\$183,153	\$29,387	\$116,570	\$30,346	\$359,456
I-805 (HOV/Managed Lanes/DARs)	\$138,816	\$98,759	\$202,928	\$180	\$440,683
SR 905 (I-805 to Otay Mesa POE)	\$236,825	\$187,673	\$1,582	\$0	\$426,080
SR 78	\$1,904	\$18,463	\$21,529	\$14,954	\$56,850
SR 11	\$65,700	\$88,001	\$0	\$569,200	\$722,901
SR 241 TCA Toll	\$0	\$0	\$0	\$489,975	\$489,975
Highway Bridge Program/Other State Administered Programs	\$168,296	\$14,250	\$0	\$9,400	\$191,946
State Highway Operations Protection Program (SHOPP)	\$0	\$395,413	\$0	\$0	\$395,413
Other Highway Projects	\$1,763	\$71,687	\$7,643	\$5,310	\$86,403
<i>Subtotal Highway Projects</i>	<b>\$1,203,786</b>	<b>\$2,300,002</b>	<b>\$1,160,549</b>	<b>\$1,162,216</b>	<b>\$5,826,554</b>
<b>Local Streets &amp; Roads Projects</b>					
Highway Bridge Replacement/Rehabilitation	\$145,817	\$2,512	\$17,111	\$34,837	\$200,277
Regional Arterial System	\$23,697	\$0	\$147,076	\$208,421	\$379,194
Roadway Maintenance & Rehabilitation	\$2,452	\$0	\$137,455	\$43,374	\$183,281
Traffic Signal Projects	\$280	\$0	\$44,145	\$1,397	\$45,822
Other Local Street & Road	\$23,008	\$6,000	\$346,939	\$147,010	\$522,957
<i>Subtotal Local Streets &amp; Roads Projects</i>	<b>\$195,254</b>	<b>\$8,512</b>	<b>\$692,726</b>	<b>\$435,039</b>	<b>\$1,331,531</b>
<b>Other Projects</b>					
Bicycle/Pedestrian Projects	\$11,150	\$9,885	\$48,363	\$25,753	\$95,151
Miscellaneous*	\$941	\$9,050	\$8,626	\$50	\$18,666
TransNet Environmental Mitigation Program	\$0	\$0	\$329,762	\$0	\$329,762
Transportation Demand Management (TDM)	\$35,482	\$0	\$0	\$0	\$35,482
Transportation Enhancements (TE)	\$0	\$5,301	\$4,300	\$0	\$9,601
Transportation Management System/Intelligent Transportation System	\$22,515	\$14,476	\$29,567	\$1,475	\$68,033
<i>Subtotal Other Projects</i>	<b>\$70,087</b>	<b>\$38,712</b>	<b>\$420,618</b>	<b>\$27,278</b>	<b>\$556,696</b>
<b>GRAND TOTAL</b>	<b>\$3,404,523</b>	<b>\$2,832,317</b>	<b>\$4,173,635</b>	<b>\$2,225,763</b>	<b>\$12,636,237</b>

\*Includes SANDAG planning and various improvement projects



**Table 1-2**  
**2012 RTIP - SAN DIEGO REGION Amendment No. 2 (IN \$000s)**  
**Transportation Control Measures (T-Tactics) Project**

<b>RIDESHARING</b>	
Transportation Demand Management (TDM)	<u>\$35,482</u>
<i>Subtotal:</i>	<i>\$35,482</i>
<b>TRANSIT IMPROVEMENTS</b>	
Blue Line (including vehicle purchase)	\$582,901
Mid-Coast	\$1,730,090
I-15 BRT	\$145,909
Mid-City Rapid Bus	\$44,526
SuperLoop	\$37,177
South Bay BRT	\$99,908
Other BRT	\$27,954
Coastal Corridor (LOSSAN)	\$367,982
Bus/Rail Infrastructure	\$441,251
Bus/Rail Intermodal Stations	\$221,495
Bus/Rail Vehicle Purchase	\$208,538
Other Bus/Rail (Operations/Planning)	<u>\$1,013,723</u>
<i>Subtotal:</i>	<i>\$4,921,456</i>
<b>BICYCLE FACILITIES PROJECTS</b>	
Bicycle/Pedestrian Projects	<u>\$95,151</u>
<i>Subtotal:</i>	<i>\$95,151</i>
<b>TRAFFIC FLOW IMPROVEMENTS</b>	
Transportation Management System/Intelligent Transportation System	\$68,033
Traffic Management/Signal Projects	<u>\$47,376</u>
<i>Subtotal:</i>	<i>\$115,409</i>
<b>Total Transportation Tactics in 2012 RTIP:</b>	<b>\$5,167,498</b>
Total All Transportation Projects in 2012 RTIP:	\$12,636,237
Share of T-Tactics Projects in 2012 RTIP:	40.9%

**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

**Caltrans**

MPO ID: CAL29B		RTIP #:12-02									
Project Title:	SR 76 East							EA NO: 25711			
Project Description:	From Mission Rd. to I-15 - In and near Oceanside from Mission Rd to I-15, widen from 2 to 4 lanes. Toll Credits of \$4,986 will be used to match FY14 federal funds for the CON phase, Toll Credits of \$4,986 will be used to match FY15 federal funds for the CON phase, Toll Credits of \$782 will be used to match FY16 federal funds for the CON phase							RTP PG NO: A-6 SANDAG ID: 1207606			
Change Reason:	Revise open to traffic date.										
RT:76	Capacity Status:CI	Exempt Category:Non-Exempt									
Est Total Cost: <b>\$201,549</b>		Open to Traffic: Phase 1: Aug 2013			Phase 2: Dec 2015						
	TOTAL	PRIOR	12/13	13/14	14/15	15/16	16/17	PE	RW	CON	
RSTP	\$7,436	\$7,436						\$7,436			
RSTP - Conversion	\$83,000			\$38,487	\$38,487	\$6,026				\$83,000	
TPFP	\$300			\$300						\$300	
Prop 1B - CMIA	\$29,387	\$29,387								\$29,387	
TransNet - MC	\$51,426	\$14,303	\$18,155	\$5,331	\$7,791	\$5,828	\$18	\$22,225	\$16,276	\$12,925	
TransNet - MC AC	\$0		\$113,000	\$(38,487)	\$(38,487)	\$(6,026)	\$(30,000)				
Local Funds	\$30,000						\$30,000			\$30,000	
TOTAL	\$201,549	\$51,126	\$131,155	\$5,631	\$7,791	\$5,828	\$18	\$29,661	\$16,276	\$155,612	
PROJECT LAST AMENDED 12-01											
	TOTAL	PRIOR	12/13	13/14	14/15	15/16	16/17	PE	RW	CON	
RSTP	\$7,436	\$7,436						\$7,436			
RSTP - Conversion	\$83,000			\$38,487	\$38,487	\$6,026				\$83,000	
TPFP	\$300			\$300						\$300	
Prop 1B - CMIA	\$29,387	\$29,387								\$29,387	
TransNet - MC	\$51,426	\$14,303	\$18,155	\$5,331	\$7,791	\$5,828	\$18	\$22,225	\$16,276	\$12,925	
TransNet - MC AC	\$0		\$113,000	\$(38,487)	\$(38,487)	\$(6,026)	\$(30,000)				
Local Funds	\$30,000						\$30,000			\$30,000	
TOTAL	\$201,549	\$51,126	\$131,155	\$5,631	\$7,791	\$5,828	\$18	\$29,661	\$16,276	\$155,612	

**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

**Caltrans**

MPO ID: CAL75		RTIP #:12-02								
Project Title:	I-5 Genesee Interchange and Widening							EA NO: 02233, 0223U, 06500		
Project Description:	From Genesee Avenue to Sorrento Valley Overhead - reconstruct I-5 Genesee Bridge and interchange including ramps, retaining walls; add type 1 bicycle facility between Voigt and Sorrento Valley Road							PPNO: 0129P		
								RTP PG NO: A-33		
								SANDAG ID: 1200506		
								EARMARK NO: 3086		
Change Reason:	Revise open to traffic date.									
RT:5	Capacity Status:CI	Exempt Category:Non-Exempt								
Est Total Cost: <b>\$93,129</b>		Open to Traffic: Feb 2016								
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
HPP	\$1,600		\$1,600							\$1,600
RSTP	\$32,487		\$32,487							\$32,487
SHOPP (AC)-Mobility	\$12,987		\$12,987					\$2,467	\$500	\$10,020
TransNet - MC	\$24,845	\$54	\$1,787	\$3,352	\$7,207	\$9,707	\$2,738	\$950	\$2,500	\$21,395
Local Funds	\$21,210	\$18,710	\$2,500					\$13,610	\$5,100	\$2,500
TOTAL	\$93,129	\$18,764	\$51,361	\$3,352	\$7,207	\$9,707	\$2,738	\$17,027	\$8,100	\$68,002
PROJECT LAST AMENDED 12-01										
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
HPP	\$1,600		\$1,600							\$1,600
RSTP	\$32,487		\$32,487							\$32,487
SHOPP (AC)-Mobility	\$12,987		\$12,987					\$2,467	\$500	\$10,020
TransNet - MC	\$24,845	\$54	\$1,787	\$3,352	\$7,207	\$9,707	\$2,738	\$950	\$2,500	\$21,395
Local Funds	\$21,210	\$18,710	\$2,500					\$13,610	\$5,100	\$2,500
TOTAL	\$93,129	\$18,764	\$51,361	\$3,352	\$7,207	\$9,707	\$2,738	\$17,027	\$8,100	\$68,002

**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

**Caltrans**

MPO ID: CAL77								RTIP #:12-02			
Project Title:	I-5/I-8 Connector						EA NO: 00270				
Project Description:	On I-5 from 0.1 km south of junction with I-8 and on the right lanes through the Sea World Drive interchange, On I-8 from I-8/I-5 separation to 0.6 km east of Morena Blvd. undercrossing - construction of auxiliary lanes and widening of connectors. Toll Credits of \$40 will be used to match FY11 federal funds for the PE phase, Toll Credits of \$482 will be used to match FY12 federal funds for the PE phase, Toll Credits of \$792 will be used to match FY13 federal funds for the CON phase						SANDAG ID: 1200505 EARMARK NO: CA643/3120				
Change Reason:	Revise open to traffic date.										
RT:5	Capacity Status:CI	Exempt Category:Non-Exempt									
Est Total Cost: <b>\$23,905</b>		Open to Traffic: Jun 2015									
	TOTAL	PRIOR	12/13	13/14	14/15	15/16	16/17	PE	RW	CON	
HPP	\$4,800	\$1,926	\$2,874					\$1,926		\$2,874	
IM	\$1,025	\$360	\$665					\$360		\$665	
SHOPP (AC)-Mobility	\$14,220			\$14,220				\$2,452	\$1,140	\$10,628	
TransNet - MC	\$3,860	\$14	\$615	\$2,226	\$996	\$9				\$3,860	
TOTAL	\$23,905	\$2,300	\$4,154	\$16,446	\$996	\$9		\$4,738	\$1,140	\$18,027	
PROJECT LAST AMENDED 12-00											
	TOTAL	PRIOR	12/13	13/14	14/15	15/16	16/17	PE	RW	CON	
HPP	\$4,800	\$1,926	\$2,874					\$1,926		\$2,874	
IM	\$1,025	\$360	\$665					\$360		\$665	
SHOPP (AC)-Mobility	\$14,220			\$14,220				\$2,452	\$1,140	\$10,628	
TransNet - MC	\$3,860	\$14	\$615	\$2,226	\$996	\$9				\$3,860	
TOTAL	\$23,905	\$2,300	\$4,154	\$16,446	\$996	\$9		\$4,738	\$1,140	\$18,027	

**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

**Chula Vista, City of**

<b>MPO ID: CHV69</b>			<b>RTIP #:12-02</b>							
Project Title:	Heritage Road Bridge									
Project Description:	Heritage Road from Main Street/ Nirvana Ave. to Entertainment Circle - Widen and lengthen bridge over Otay River from four lane to six lane bridge that accommodates shoulders, sidewalk and median. Project is on Heritage Road from the intersection of Main Street and Nirvana Ave. to Entertainment Circle.									
Change Reason:	New project									
	Capacity Status:CI	Exempt Category:Non-Exempt								
Est Total Cost: <b>\$17,500</b>			Open to Traffic: Mar 2017							
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
HBP	\$15,492			\$345			\$15,147		\$345	\$15,147
Local Funds	\$2,008			\$45			\$1,963		\$45	\$1,963
<b>TOTAL</b>	<b>\$17,500</b>			<b>\$390</b>			<b>\$17,110</b>		<b>\$390</b>	<b>\$17,110</b>

**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

**Escondido, City of**

MPO ID: ESC08		RTIP #:12-02								
Project Title:	Felicitia Ave/Juniper Street									
Project Description:	From Escondido Boulevard to Juniper Street and from Juniper Street to Chestnut Street - Widen from 2 to 4 lanes with left turn pockets, raised medians on Felicitia; new traffic signals at Juniper and Chestnut, Juniper and 13th Ave., modifications to installed signal at Juniper and 15th, modify traffic signal at Juniper and Felicitia – Included in 2012 RTIP for Air Quality purposes only.									
Change Reason:	Carry over from 10-30									
Capacity Status:CI		Exempt Category:Non-Exempt								
Est Total Cost: <b>\$3,830</b>		Open to Traffic: May 2020								
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
TransNet - L (Cash)	\$330	\$330							\$330	
Local Funds	\$3,500	\$3,500							\$3,500	
<b>TOTAL</b>	<b>\$3,830</b>	<b>\$3,830</b>							<b>\$3,830</b>	
PROJECT LAST AMENDED 10-30										
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
TransNet - L (Cash)	\$330	\$330							\$330	
Local Funds	\$3,500	\$3,500							\$3,500	
<b>TOTAL</b>	<b>\$3,830</b>	<b>\$3,830</b>							<b>\$3,830</b>	

MPO ID: ESC09		RTIP #:12-02								
Project Title:	Ninth Avenue							TransNet - LSI: CR		
Project Description:	Ninth Avenue from La Terraza to Spruce - widen from 2 to 4 lanes with raised median and modify traffic signals at Ninth Ave and Tulip Street - design phase – Included in 2012 RTIP for Air Quality purposes only									
Change Reason:	Carry over from 10-30									
Capacity Status:CI		Exempt Category:Non-Exempt								
Est Total Cost: <b>\$161</b>		Open to Traffic: May 2020								
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
TransNet - LSI Carry Over	\$161	\$161						\$161		
<b>TOTAL</b>	<b>\$161</b>	<b>\$161</b>						<b>\$161</b>		
PROJECT LAST AMENDED 10-30										
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
TransNet - LSI Carry Over	\$161	\$161						\$161		
<b>TOTAL</b>	<b>\$161</b>	<b>\$161</b>						<b>\$161</b>		

**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

Oceanside, City of

**COMPLETED**

MPO ID: O26		RTIP #:12-02									
Project Title:	SR76 Widening at Rancho del Oro Boulevard							RAS (TA 4-69)			
Project Description:	From W. of Rancho del Oro to East of Rancho del Oro - future widening of SR76 for one additional lane width 1500 feet west and east of Rancho del Oro Boulevard							TransNet - LSI: CR			
Change Reason:	Complete project										
Capacity Status:NCI		Exempt Category:Other - Engineering studies									
Est Total Cost: <b>\$77</b>											
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>	
TransNet - LSI	\$8		\$8					\$8			
TransNet - LSI (Cash)	\$19		\$19					\$19			
TransNet - LSI Carry Over	\$50	\$50						\$50			
<b>TOTAL</b>	<b>\$77</b>	<b>\$50</b>	<b>\$27</b>					<b>\$77</b>			
PROJECT LAST AMENDED 12-00											
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>	
TransNet - LSI Carry Over	\$50	\$50						\$50			
Local Funds	\$200		\$150		\$50			\$200			
<b>TOTAL</b>	<b>\$250</b>	<b>\$50</b>	<b>\$150</b>		<b>\$50</b>			<b>\$250</b>			

**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

**Various Agencies**

MPO ID: V11		RTIP #:12-02								
Project Title:	State Route 11							EA NO: 05631		
Project Description:	From Border of Mexico east of SR 905/Otay Mesa Border Crossing to future SR 125/905 junction - Construction of four-lane toll highway facility, CVEF and POE in three segments: Segment 1: SR-11/905 to Enrico Fermi; Segment 2: SR-11 from Enrico Fermi to Siempre Viva; Segment 3: POE from Siempre Viva to Mexico Border; Segment 1 is fully funded through Construction phase . Toll Credits of \$3,213 will be used to match FY12 federal funds for the PE phase, Toll Credits of \$4,366 will be used to match FY12 federal funds for the ROW phase, Toll Credits of \$194 will be used to match FY14 federal funds for the CON phase							PPNO: 0999 RTP PG NO: A-6; B-5 EARMARK NO: CA393/740		
Change Reason:	Revise open to traffic date									
RT:11	Capacity Status:CI	Exempt Category:Non-Exempt								
Est Total Cost: <b>\$722,901</b>		Open to Traffic: Phase 1: Dec 2015			Phase 2: Apr 2017		Phase 3: Apr 2017			
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
CBI	\$64,900	\$63,400		\$1,500				\$29,700	\$33,700	\$1,500
HPP	\$800	\$800						\$800		
Prop 1B - TCIF	\$75,000			\$75,000						\$75,000
STIP-IIP NHS	\$6,882	\$6,882						\$6,882		
STIP-IIP Prior State Cash	\$5,200	\$5,200						\$5,200		
STIP-IIP State Cash	\$919	\$919						\$919		
Local Funds	\$569,200	\$108,300		\$460,900				\$14,400	\$93,900	\$460,900
<b>TOTAL</b>	<b>\$722,901</b>	<b>\$185,501</b>		<b>\$537,400</b>				<b>\$57,901</b>	<b>\$127,600</b>	<b>\$537,400</b>
PROJECT LAST AMENDED 12-00										
	<b>TOTAL</b>	<b>PRIOR</b>	<b>12/13</b>	<b>13/14</b>	<b>14/15</b>	<b>15/16</b>	<b>16/17</b>	<b>PE</b>	<b>RW</b>	<b>CON</b>
CBI	\$64,900	\$63,400		\$1,500				\$29,700	\$33,700	\$1,500
HPP	\$800	\$800						\$800		
Prop 1B - TCIF	\$75,000			\$75,000						\$75,000
STIP-IIP NHS	\$6,882	\$6,882						\$6,882		
STIP-IIP Prior State Cash	\$5,200	\$5,200						\$5,200		
STIP-IIP State Cash	\$919	\$919						\$919		
Local Funds	\$569,200	\$108,300		\$460,900				\$14,400	\$93,900	\$460,900
<b>TOTAL</b>	<b>\$722,901</b>	<b>\$185,501</b>		<b>\$537,400</b>				<b>\$57,901</b>	<b>\$127,600</b>	<b>\$537,400</b>



**Table 1-3**  
**2012 Regional Transportation Improvement Program**  
**Amendment No. 2**  
**San Diego Region (in \$000s)**

**RTIP Fund Types**

<b><i>Federal Funding</i></b>	
BIP/CBI	Border Infrastructure Program/Corridors and Borders Infrastructure Program
DEMO-Sec 117/STP	Surface Transportation Program under FHWA Administrative Program (congressionally directed appropriations)
HBP	Highway Bridge Program under SAFETEA-LU
HBRR	Highway Bridge Repair and Rehabilitation under TEA-21
HPP	High Priority Program under SAFETEA-LU
IM	Interstate Maintenance Discretionary
NHS	National Highway System (administered by Caltrans)
RSTP	Regional Surface Transportation Program
TE	Transportation Enhancement Program
TPFP	Truck Parking Facilities Program (Federal Discretionary)
CMAQ/RSTP Conversion	Reimbursement of advanced federal funds which have been advanced with local funds in earlier years
<b><i>State Funding</i></b>	
CMIA	Corridor Mobility Improvement Account (State Prop. 1B)
SHOPP	State Highway Operation & Protection Program
STA	State Transit Assistance
STIP-IIP	State Transportation Improvement Program - Interregional Program
STIP-RIP	State Transportation Improvement Program - Regional Improvement Program
TCIF	Trade Corridor Improvement Fund (State Prop. 1B)
STIP/SHOPP Prior	Funds which were allocated by the CTC from a previous fund cycle
TSM	Transportation Systems Management
<b><i>Local Funding</i></b>	
Local Funds AC	Local Funds - Advanced Construction; mechanism to advance local funds to be reimbursed at a later fiscal year with federal/state funds
TransNet-L	Prop. A Local Transportation Sales Tax - Local Streets & Roads
TransNet-L (Cash)	TransNet - L funds which agencies have received payment, but have not spent
TransNet-LSI	Prop. A Extension Local Transportation Sales Tax - Local System Improvements
TransNet-LSI Carry Over	TransNet - LSI funds previously programmed but not requested/paid in year of allocation
TransNet-LSI (Cash)	TransNet - LSI funds which agencies have received payment, but have not spent
TransNet-MC	Prop. A Extension Local Transportation Sales Tax - Major Corridors
TransNet-MC AC	TransNet - Major Corridors - Advanced Construction; mechanism to advance TransNet funds to be reimbursed at a later fiscal year with federal/state funds



**Chapter 2**  
**FINANCIAL CAPACITY ANALYSIS**



## Chapter 2

### FINANCIAL CAPACITY ANALYSIS

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This chapter provides an update to the analysis of the financial capacity of the region's programmed transportation projects. Financial capacity is measured by a comparison of the total cost of the proposed projects against the available revenues and a test of the reasonableness of the revenue assumptions.

An overview of the program and available revenues by funding sources is provided for all projects included in Chapter 4 of the 2012 RTIP. The assumptions used in the forecasts of available funding are based upon information in the 2012 State Transportation Improvement Program (STIP) adopted by the California Transportation Commission (CTC) in August 2011, forecasts provided by the California Department of Transportation, and other forecasts of ongoing transportation funding programs. For the local transportation sales tax program (*TransNet*), the forecast was updated which takes into account the recent economic trend.

#### PROGRAM AND REVENUES

Table 2-1a summarizes the revenues available by major funding source (i.e., federal, state, and local), Table 2-1b summarizes the funds programmed based on available revenues, and Table 2-1c provides the revenue versus programmed summary, which shows remaining revenues available. Tables 2-1a to 2-1c include all costs and revenues for all projects in the 2012 RTIP, including Amendment No. 2.



**Table 2-1a: Revenues**  
**2012 Regional Transportation Improvement Program**  
**San Diego Region - Amendment No. 2 (\$000's)\***

	2012/13		2013/14		2014/15		2015/16		2016/17		TOTAL
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	Prior	Current	
<b>LOCAL</b>											
<b>Sales Tax</b>											
-- City	\$742,101	\$747,088	\$637,872	\$645,480	\$460,917	\$462,374	\$374,612	\$381,068	\$847,219	\$846,117	\$3,082,127
-- County	\$742,101	\$747,088	\$637,872	\$645,480	\$460,917	\$462,374	\$374,612	\$381,068	\$847,219	\$846,117	\$3,082,127
<b>Other Local Funds</b>	\$91,913	\$106,019	\$637,340	\$637,365	\$164,496	\$164,266	\$189,454	\$189,510	\$52,110	\$54,399	\$1,151,559
-- County General Funds	\$63,132	\$77,238	\$31,686	\$31,711	\$35,958	\$35,728	\$54,836	\$54,892	\$21,560	\$23,849	\$223,418
-- City General Funds	\$28,781	\$28,781	\$605,654	\$605,654	\$128,538	\$128,538	\$134,618	\$134,618	\$30,550	\$30,550	\$928,141
-- Street Taxes and Developer Fees	\$113,148	\$108,391	\$123,057	\$139,874	\$74,433	\$86,849	\$30,644	\$84,639		\$86,951	\$506,703
Other	\$947,162	\$961,498	\$1,398,269	\$1,422,719	\$699,846	\$713,489	\$594,710	\$655,216	\$899,329	\$987,467	\$4,740,389
<b>Local Total</b>	\$206,934	\$199,293	\$99,674	\$99,674	\$130,654	\$119,357	\$21,266	\$21,266			\$439,590
<b>State Highway Operations and Protection Program</b>	\$206,934	\$199,293	\$99,674	\$99,674	\$130,654	\$119,357	\$21,266	\$21,266			\$439,590
SHOPP (Including Augmentation)	\$206,934	\$199,293	\$99,674	\$99,674	\$130,654	\$119,357	\$21,266	\$21,266			\$439,590
<b>State Transportation Improvement Program</b>	\$12,788	\$10,866	\$854	\$854	\$107,966	\$109,888	\$854	\$854	\$46,294	\$46,294	\$168,756
STIP (Including Augmentation)	\$4,051	\$4,051	\$854	\$854	\$107,966	\$107,966	\$854	\$854	\$46,294	\$46,294	\$160,019
Transportation Enhancement	\$8,737	\$6,815				\$1,922					\$8,737
Proposition 1 A	\$62,855	\$65,188	\$2,333								\$65,188
Proposition 1 B	\$115,800	\$109,941	\$97,853	\$77,779		\$21,317		\$21,317	\$2,120	\$4,900	\$235,255
GARVEE Bonds (Includes Debt Service Payments)	\$21,835	\$21,835	\$21,835	\$21,835	\$21,835	\$21,835					\$65,505
Traffic Congestion Relief Program (TCRP)		\$55,775	\$55,775	\$55,775							\$55,775
State Transit Assistance (e.g., population/revenue based, Prop 42)		\$24,623		\$6,395							\$31,018
Other	\$2,947	\$2,947	\$2,951	\$2,951	\$2,896	\$2,896	\$2,896	\$2,896	\$2,896	\$2,896	\$14,586
<b>State Total</b>	\$423,159	\$434,694	\$281,275	\$265,264	\$263,351	\$275,293	\$3,750	\$46,333	\$51,310	\$54,090	\$1,075,673
5307 - Urbanized Area Formula Program	\$60,829	\$59,335	\$63,262	\$59,929	\$65,793	\$60,528	\$68,426	\$61,133		\$61,745	\$302,670
5308 - Clean Fuel Formula Program											
5309a - Fixed Guideway Modernization	\$19,580		\$20,363		\$21,177		\$22,024				
5309b - New and Small Starts (Capital Investment Grants)									\$842,208	\$842,208	\$842,208
5309c - Bus and Bus Related Grants	\$15,000	\$2,000									\$2,000
5310 - Elderly & Persons with Disabilities Formula Program											
5311 - Nonurbanized Area Formula Program	\$369	\$987	\$380	\$506	\$392	\$506		\$506		\$506	\$3,011
5312 - National Research and Technology Program	\$50	\$50									\$50
5311f - Intercity Bus											
5316 - Job Access and Reverse Commute Program	\$1,666	\$3,115									\$3,115
5317 - New Freedom	\$94	\$1,227	\$252	\$252							\$1,479
5337 - State of Good Repair		\$29,345		\$29,312		\$29,278		\$29,983		\$29,252	\$147,170
5339 - Bus and Bus Facilities Program		\$4,871		\$4,919		\$4,969		\$5,018		\$5,068	\$19,777
Other											
<b>Federal Transit Total</b>	\$97,589	\$100,930	\$84,257	\$94,918	\$87,362	\$95,281	\$90,450	\$96,640	\$842,208	\$938,778	\$1,321,480
Bridge Discretionary Program											
Congestion Mitigation and Air Quality (CMAQ)	\$16,296	\$11,575	\$36,443	\$36,443	\$28,547	\$28,547	\$36,443	\$36,443	\$36,443	\$36,443	\$149,451
Coordinated Border Infrastructure (SAFETEA-LU Sec.1303)			\$1,500	\$1,500							\$1,500
High Priority Projects (HPP) and Demo	\$29,521	\$24,121	\$1,147	\$9,386	\$1,436	\$1,436					\$34,942
Highway Bridge Program (HBP)	\$26,282	\$26,282	\$2,644	\$2,989	\$35,179	\$35,179	\$14,804	\$14,804	\$195,501	\$210,648	\$289,902
Highway Safety Improvement Program (HSIP)	\$983	\$983	\$6,075	\$5,866	\$3,495	\$3,495	\$1,479	\$1,479			\$11,823
Public Lands Highway	\$500	\$500									\$500
Recreational Trails	\$744	\$744									\$744
Safe Routes to School (SRTS) (SAFETEA-LU)			\$1,235	\$1,235			\$4,937	\$4,937			\$6,172
Surface Transportation Program (Regional)	\$39,211	\$36,955	\$39,211	\$39,211	\$39,211	\$39,211	\$39,211	\$39,211	\$39,211	\$39,211	\$193,800
Transportation and Community and System Preservation Program	\$1,087	\$1,087	\$179	\$179							\$1,266
Other	\$2,943	\$2,943	\$494	\$494							\$3,437
<b>Federal Highway Total</b>	\$117,568	\$105,190	\$88,928	\$97,303	\$107,868	\$107,868	\$96,874	\$96,874	\$271,155	\$286,303	\$693,538
<b>Federal Total</b>	\$215,157	\$206,121	\$173,185	\$192,221	\$195,230	\$203,149	\$187,324	\$193,514	\$1,113,363	\$1,225,081	\$2,015,018
<b>REVENUES TOTAL</b>	\$1,585,478	\$1,602,312	\$1,852,729	\$1,880,203	\$1,158,427	\$1,191,931	\$785,784	\$895,063	\$2,064,002	\$2,266,637	\$7,831,079

Note: Highlighted sections refer to changes from prior amendment  
 \*Current Program includes changes through Amendment No. 5

**Table 2-1b: Program  
2012 Regional Transportation Improvement Program  
San Diego Region - Amendment No. 2 (\$000's)\***

	2012/13		2013/14		2014/15		2015/16		2016/17		TOTAL
	Prior	Current	Prior	Current	Prior	Current	Prior	Current	Prior	Current	
<b>LOCAL</b>											
<b>Local Total</b>	\$911,129	\$927,603	\$1,375,990	\$1,401,549	\$669,597	\$686,208	\$575,789	\$634,420	\$879,061	\$967,484	\$4,617,264
<b>STATE</b>											
<b>State Highway Operations and Protection Program</b>	\$206,934	\$199,293	\$99,674	\$99,674	\$130,654	\$119,357		\$21,266			\$439,590
SHOPP (Including Augmentation)	\$206,934	\$199,293	\$99,674	\$99,674	\$130,654	\$119,357		\$21,266			\$439,590
<b>State Transportation Improvement Program</b>	\$12,788	\$10,866	\$854	\$854	\$107,966	\$109,888	\$854	\$854	\$46,294	\$46,294	\$168,756
STIP (Including Augmentation)	\$4,051	\$4,051	\$854	\$854	\$107,966	\$107,966	\$854	\$854	\$46,294	\$46,294	\$160,019
Transportation Enhancement	\$8,737	\$6,815				\$1,922					\$8,737
Proposition 1 A	\$62,855	\$65,188	\$2,333								\$65,188
Proposition 1 B	\$115,800	\$109,941	\$97,853	\$77,779	\$21,317	\$21,317		\$21,317	\$2,120	\$4,900	\$235,255
GARVEE Bonds (Includes Debt Service Payments)	\$21,835	\$21,835	\$21,835	\$21,835	\$21,835	\$21,835					\$65,505
Traffic Congestion Relief Program (TCRP)			\$55,775	\$55,775							\$55,775
State Transit Assistance (STA)(e.g., population/revenue based, Prop 42)		\$24,623		\$6,395							\$31,018
Other	\$2,947	\$2,947	\$2,951	\$2,951	\$2,896	\$2,896	\$2,896	\$2,896	\$2,896	\$2,896	\$14,586
<b>State Total</b>	\$423,159	\$434,694	\$281,275	\$265,264	\$263,351	\$275,293	\$3,750	\$46,333	\$51,310	\$54,090	\$1,075,673
5307 - Urbanized Area Formula Program	\$60,821	\$58,930	\$63,262	\$58,373	\$65,793	\$59,525	\$62,887	\$60,236		\$56,913	\$293,977
5308 - Clean Fuel Formula Program											
5309a - Fixed Guideway Modernization	\$19,580		\$20,363		\$21,177		\$22,024				\$842,208
5309b - New and Small Starts (Capital Investment Grants)									\$842,208		\$842,208
5309c - Bus and Bus Related Grants	\$15,000	\$2,000									\$2,000
5310 - Elderly & Persons with Disabilities Formula Program											
5311 - Nonurbanized Area Formula Program	\$369	\$987	\$380	\$506	\$392	\$506		\$506		\$506	\$3,011
5312 - National Research and Technology Program	\$50	\$50									\$50
5316 - Job Access and Reverse Commute Program	\$1,666	\$3,115									\$3,115
5317 - New Freedom	\$94	\$1,227	\$252	\$252							\$1,479
5337 - State of Good Repair		\$29,345		\$29,312		\$29,278		\$29,983		\$29,252	\$147,170
5339 - Bus and Bus Facilities Program		\$4,871		\$4,919		\$4,969		\$5,018		\$5,068	\$24,845
Other											
<b>Federal Transit Total</b>	\$97,580	\$100,525	\$84,257	\$93,362	\$87,362	\$94,278	\$84,911	\$95,743	\$842,208	\$933,946	\$1,317,854
Congestion Mitigation and Air Quality (CMAQ)	\$16,296	\$11,575	\$15,304	\$20,024	\$7,182	\$7,182	\$7,500	\$7,500	\$8,000	\$8,000	\$54,281
Coordinated Border Infrastructure (SAFETEA-LU Sec.1303)			\$1,500	\$1,500							\$1,500
High Priority Projects (HPP) and Demo	\$29,521	\$24,121	\$1,147	\$9,386	\$1,436	\$1,436					\$34,942
Highway Bridge Program (HBP)	\$26,282	\$26,282	\$2,644	\$2,989	\$35,179	\$35,179	\$14,804	\$14,804	\$195,501	\$210,648	\$289,902
Highway Safety Improvement Program (HSIP)	\$983	\$983	\$6,075	\$5,866	\$3,495	\$3,495	\$1,479	\$1,479			\$11,823
Public Lands Highway	\$500	\$500									\$500
Recreational Trails	\$744	\$744									\$744
Safe Routes to School (SRTS) (SAFETEA-LU)			\$1,235	\$1,235			\$4,937	\$4,937			\$6,172
Surface Transportation Program (Regional)	\$39,211	\$36,955	\$39,211	\$39,211	\$39,211	\$39,211	\$10,750	\$30,463	\$724	\$724	\$146,565
Transportation and Community and System Preservation Program	\$1,087	\$1,087	\$179	\$179							\$1,266
Transportation Improvements (TI)											
Other	\$2,943	\$2,943	\$494	\$494							\$3,437
<b>Federal Highway Total</b>	\$117,567	\$105,190	\$67,789	\$80,883	\$86,503	\$86,503	\$39,470	\$59,183	\$204,225	\$219,372	\$551,133
<b>PROGRAM TOTAL</b>	\$1,549,435	\$1,568,013	\$1,809,311	\$1,841,058	\$1,106,813	\$1,142,283	\$703,920	\$835,679	\$1,976,804	\$2,174,892	\$7,561,924

Note: Highlighted sections refer to changes from prior amendment  
\*Current Program includes changes through Amendment No. 5



**Table 2-1c: Revenues vs. Program  
2012 Regional Transportation Improvement Program  
San Diego Region - Amendment No. 2 (\$000's)\***

	Funding Source	2012/13		2013/14		2014/15		2015/16		2016/17		TOTAL
		Prior	Current	Prior	Current	Prior	Current	Prior	Current	Prior	Current	
LOCAL												
	Local Total	\$36,033	\$33,895	\$22,279	\$21,170	\$30,249	\$27,281	\$18,921	\$20,796	\$20,268	\$19,982	\$123,124
STATE	State Highway Operations and Protection Program SHOPP (Including Augmentation)											
	State Transportation Improvement Program											
	STIP (Including Augmentation)											
	Transportation Enhancement											
	STIP Prior											
	Transportation Enhancement											
	Proposition 1 A											
	Proposition 1 B											
	GARVEE Bonds (Includes Debt Service Payments)											
	Highway Maintenance (HM)											
	Traffic Congestion Relief Program (TCRP)											
	State Transit Assistance (STA)(e.g., population/revenue based, Prop 42)											
	Other											
	<b>State Total</b>	\$8	\$405	\$1,556	\$1,003	\$5,539	\$897	\$4,832	\$8,693			
FEDERAL TRANSIT	5307 - Urbanized Area Formula Program											
	5308 - Clean Fuel Formula Program											
	5309a - Fixed Guideway Modernization											
	5309b - New and Small Starts (Capital Investment Grants)											
	5309c - Bus and Bus Related Grants											
	5310 - Elderly & Persons with Disabilities Formula Program											
	5311 - Nonurbanized Area Formula Program											
	5312 - National Research and Technology Program											
	5316 - Job Access and Reverse Commute Program											
	5317 - New Freedom											
	5337 - State of Good Repair											
	5339 - Bus and Bus Facilities Program											
	Other											
	<b>Federal Transit Total</b>	\$8	\$405	\$1,556	\$1,003	\$5,539	\$897	\$4,832	\$8,693			
FEDERAL HIGHWAY	Bridge Discretionary Program											
	Congestion Mitigation and Air Quality (CMAQ)											
	High Priority Projects (HPP) and Demo			\$21,139	\$16,419	\$21,365	\$21,365	\$28,943	\$28,943	\$28,443	\$28,443	\$95,170
	High Risk Rural Road (HRRR)											
	Highway Bridge Program (HBP)											
	Highway Safety Improvement Program (HSIP)											
	Recreational Trails											
	Safe Routes to School (SRTS) (SAFETEA-LU)											
	Surface Transportation Program (Regional)											
	Transportation and Community and System Preservation Program											
	Other							\$28,461	\$8,748	\$38,487	\$38,487	\$47,235
	<b>Federal Highway Total</b>			\$21,139	\$16,419	\$21,365	\$21,365	\$57,404	\$37,691	\$66,930	\$66,930	\$142,405
FRA	Passenger Rail Investment and Improvement Act of 2008 (PRIIA)											
	Other											
	<b>Federal Railroad Administration Total</b>											
	<b>REVENUES - PROGRAM TOTAL</b>	\$8	\$405	\$21,139	\$17,975	\$21,365	\$22,368	\$62,943	\$38,588	\$66,930	\$71,763	\$151,099
	<b>REVENUES - PROGRAM TOTAL</b>	\$36,041	\$34,300	\$43,418	\$39,145	\$51,614	\$49,649	\$81,864	\$59,384	\$87,198	\$91,745	\$274,223

Note: Highlighted sections refer to changes from prior amendment  
\*Current Program includes changes made through Amendment No. 5



**Chapter 3**  
**AIR QUALITY CONFORMITY ANALYSIS**



## Chapter 3

### AIR QUALITY CONFORMITY ANALYSIS

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On April 15, 2004, the U.S. Environmental Protection Agency (EPA) designated the San Diego air basin as non-attainment for the 1997 Eight-Hour Ozone Standard. This designation took effect on June 15, 2004. Several areas that are tribal lands in eastern San Diego County were excluded from the non-attainment designation.

In cooperation with SANDAG and the California Air Resources Board (CARB) the San Diego County Air Pollution Control District (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.

The air basin was initially classified as a basic non-attainment area under Subpart 1 of the Clean Air Act and the maximum statutory attainment date for the Eight-Hour Ozone Standard was set as June 15, 2009. However, on April 27, 2012, in response to a court decision, U.S. EPA ruled that the San Diego basic non-attainment area be reclassified as a Subpart 2 moderate non-attainment 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 and APCD prepared a Maintenance Plan, with a request for re-designation to attainment/maintenance. On December 6, 2012, the CARB approved the *Re-designation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County* for submittal to U.S. EPA as a State Implementation Plan (SIP) revision. On December 20, 2012, the U.S. EPA initiated its adequacy review of the plan and posted the document for a 30-day public review period that closed January 22, 2013. The U.S. EPA found the emissions budgets adequate for use in conformity determinations effective April 4, 2013, while final approval of the plan has yet to occur.

On May 21, 2012, the U.S. EPA designated the San Diego air basin as a non-attainment area for the new 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 is required to determine conformity to the new standard by July 20, 2013. The U.S. EPA final rule also provides for the revocation of the 1997 Eight-Hour Ozone NAAQS for transportation conformity purposes to become effective on July 20, 2013. For this non-attainment designation, tribal areas that were previously excluded are now included as part of the San Diego region non-attainment designation.<sup>1</sup>

On October 28, 2011, the SANDAG Board made a finding of conformity of the *2050 San Diego Regional Transportation Plan: Our Region. Our Future.* (2050 RTP) and the 2010 Regional Transportation Improvement

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<sup>1</sup> One small portion (approximately 119 acres) of the Pechanga Band of Luiseno Indians purchased within the north portion of San Diego County piece of tribal land was excluded from the San Diego region 2008 Eight-Hour ozone standard non-attainment designation. All other tribal lands within San Diego County were included in the designation.

Program (2010 RTIP) Amendment No. 13 and adopted the plan. The U.S. Department of Transportation (DOT), in consultation with U.S. EPA, made its conformity determination on December 2, 2011.

On September 28, 2012, the SANDAG Board of Directors adopted the final 2012 RTIP and its conformity determination and re-determination of conformity for the 2050 RTP. The U.S. DOT, in consultation with U.S. EPA, made its conformity determination on December 13, 2012.

The San Diego region also has been designated by the U.S. EPA as a federal maintenance area for the Carbon Monoxide (CO) standard. On November 8, 2004, CARB submitted the 2004 revision to the California SIP for CO to the U.S. EPA. Effective January 30, 2006, the U.S. EPA has approved this maintenance plan as a SIP revision.

### **Demonstration of Fiscal Constraint**

The 2012 RTIP, including Amendment No. 2 is consistent with the 2050 RTP. As a financially constrained document, the 2012 RTIP contains only those major transportation projects listed in the revenue constrained 2050 RTP. Chapter 4 of the 2012 RTIP includes detailed discussion on fiscal constraint and overall financial capacity to carry out projects included in the RTIP.

### **Development of Transportation Control Measures**

In 1982, SANDAG adopted four Transportation Tactics as elements of the 1982 Revised Regional Air Quality Strategy (RAQS). These Transportation Tactics are ridesharing, transit improvements, traffic flow improvements, and bicycle facilities and programs.

These four Transportation Tactics were subsequently approved by the San Diego Air Pollution Control Board (APCB) and are included in the 1982 SIP for Air Quality as Transportation Control Measures (TCMs). The U.S. EPA approved this SIP revision for the San Diego Air Basin in 1983. The four 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.

The California Clean Air Act required the preparation of a 1991 RAQS, including TCMs. During 1991 and 1992, SANDAG, in cooperation with local agencies, transit agencies, and the APCD developed a TCM Plan. SANDAG approved the TCM Plan on March 27, 1992.

On June 30, 1992, the APCD amended the TCM Plan and adopted the 1991 RAQS, including the amended TCM Plan. TCMs included in the 1991 RAQS include the four Transportation Tactics described above, as well as a transportation demand management (TDM) program, vanpools, high-occupancy vehicle (HOV) lanes, and park-and-ride facilities. On November 12, 1992, the CARB gave approval to the 1991 RAQS, including the TCMs.

The 1995 Triennial RAQS Update subsequently deleted the Employee Commute Travel Reduction Program contained in the TDM program because the program was no longer required under federal law. Assembly Bill 3048 (Statutes of 1996, Chapter 777) eliminated all state requirements for mandatory trip reduction programs. As a result, the Student Travel Reduction Program, the Non-Commute Travel Reduction Program, and the Goods Movement/Truck Operation Program proposed in the 1991 RAQS were no longer statutorily mandated and were deleted from the RAQS in 1998. The 2001, 2004, and 2009 Triennial RAQS Revisions did not make changes to measures related to mobile sources or the TCM Plan.

## Air Quality Conformity Requirements

SANDAG, as the Metropolitan Planning Organization (MPO), and the U.S. DOT must make a determination that the 2012 RTIP and the 2050 RTP conform to the applicable SIP. 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 (NAAQS).

Based upon the U.S. EPA's Transportation Conformity Rule, as amended, conformity of transportation plans and programs, including the 2012 RTIP Amendment No. 2, is determined according to the 1990 Clean Air Act Amendments [Section 176(c)(3)(A)] if the following is demonstrated:

- The 2012 RTIP Amendment No. 2 provides for the timely implementation of the Transportation Tactics contained in the 1991 RAQS. These tactics are also included as TCMs in the 1982 SIP, but have been fully implemented.
- A quantitative analysis is conducted on the cumulative emissions of projects programmed within the 2012 RTIP as amended, including all regionally significant, capacity-increasing projects. Further, implementation of the projects and programs must meet the motor vehicle emissions budget developed by local and state air quality agencies and approved by the U.S. EPA. The 2012 RTIP Amendment No. 2 must meet the applicable emission budgets prescribed in the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*, which were found adequate for transportation conformity purposes by the U.S. EPA, effective April 4, 2013. Also, the 2012 Amendment No. 2 must meet the CO emissions budget established in the CO Maintenance Plan (approved by the U.S. EPA in January 2006).
- In addition to the required emissions tests, consultation with transportation and air quality agencies is required. The consultation process followed, to prepare the air quality conformity analysis, complies with the San Diego Transportation Conformity Procedures adopted in July 1998.
- Interagency consultation involves SANDAG, APCD, Caltrans, CARB, the U.S. DOT, and the U.S. EPA, which form the San Diego Region Conformity Working Group (CWG).

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; and
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 with the CWG for the preparation of the new air quality analysis of the 2012 RTIP Amendment No. 2. Conformity of the San Diego 2050 RTP also is being redetermined for consistency purposes and to demonstrate conformity to the 2008 Eight-Hour Ozone standard. On March 6, 2013, the U.S. EPA has approved a new model to forecast regional emissions, Emissions FACtors 2011 (EMFAC2011) for conformity purposes; this model was used to conduct this conformity analysis.

The schedule for the development of the 2012 RTIP Amendment No. 2 was presented to the CWG on December 5, 2012, and criteria and procedures for determining conformity were presented to the CWG on

February 6, 2013. In addition, the draft list of capacity increasing and non-capacity increasing projects was discussed at the February 6, 2013, CWG meeting.

The quantitative emissions analyses for the 2012 RTIP Amendment No. 2 conformity determination and 2050 RTP redetermination were initiated on February 7, 2013, and the results distributed on February 26, 2013, to the CWG for an initial review and comment period. The CWG reviewed the draft air quality conformity analysis at its March 6, 2013, meeting. The 2012 RTIP Amendment No. 2, and its conformity analysis and the 2050 RTP conformity redetermination was released for public review and a 30-day comment period on April 5, 2013. The results of the regional emissions analysis indicate that the 2012 RTIP as amended and 2050 RTP meet the air quality conformity requirements.

The SANDAG Board of Directors will be asked to make a conformity finding for the 2012 RTIP Amendment No. 2 and redetermination of conformity for the 2050 RTP, and approve the final 2012 RTIP Amendment No. 2 at its May 24, 2013, meeting. The following sections provide a summary of the air quality conformity analysis of the 2012 RTIP Amendment No. 2 and 2050 RTP in relation to the above conformity requirements.

The first requirement of the air quality conformity finding is to provide for the expeditious implementation of adopted TCMs, which are also the Transportation Tactics included in the 1991 RAQS. These tactics are ridesharing, transit improvements, traffic flow improvements, and bicycle facilities and programs.

The 1982 SIP established the TCMs, which identified general objectives and implementing actions for each tactic. Due to substantial investments since 1982, SANDAG has fully implemented the TCMs. Ridesharing, transit, bicycling, and traffic flow improvements continue to be funded, although the level of implementation established in the SIP has been surpassed. No TCMs have been removed or substituted from the SIP.

The 2012 RTIP makes substantial progress in programming funds for implementation of the four adopted Transportation Tactics for the San Diego region contained in the 2009 RAQS. As shown in Table 3-1, the TCMs/T-tactic projects programmed for implementation total approximately \$5.2 billion, or approximately 40 percent of the total funds programmed. Included are \$35.4 million for Ridesharing, \$4.9 billion for Transit Improvements, \$95 million for Bicycle Facilities and Programs, and \$115 million for Traffic Flow Improvements. Based upon this analysis, the 2012 RTIP Amendment No. 2 continues to provide for the expeditious implementation of the four Transportation Tactics approved in the 1991 RAQS.

### **Quantitative Emissions Analysis**

The second requirement of the conformity finding is to conduct a quantitative emissions analysis for the 2012 RTIP, as amended. The emissions analysis must show that implementation of the 2012 RTIP, as amended, and 2050 RTP meet the emissions budgets established in the 2004 CO Maintenance Plan and in the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*

A quantitative emissions analysis was conducted according to the requirements established in the Transportation Conformity Rule under Section 93.122(b). Motor vehicle emissions forecasts were produced for the following analysis years: 2015, 2018 (interpolated), 2020 (interpolated), 2025, 2035, 2040, and 2050 (for informational purposes). SANDAG's regional growth forecasts and transportation models, as well as CARB's emissions model, were used to generate the emissions forecasts. Transportation forecasts were developed using the TransCAD 5.0 transportation planning computer package. The four-step transportation modeling process includes trip generation, trip distribution, mode split, and trip assignment.



The emissions analysis was conducted using the latest EMFAC2011 model. Using EMFAC2011, the emissions data for 2040 and 2050 were prepared using 2035 emissions factors, as emission factors for 2040 and 2050 are not available from CARB.

The 2012 RTIP Amendment No. 2 and 2050 RTP air quality conformity analysis was conducted for the years 2012-2040. Emissions data for 2050 is included for informational purposes only.

All of the proposed capacity-increasing improvements identified in the 2012 RTIP Amendment No. 2 that are on the Regional Arterial System (as defined in the RTP) or the FHWA functional classification system (other principal arterials and higher classifications) were modeled.

### **Emissions Budget Analysis**

Table 3-2 provides a summary of the results of the quantitative emissions analysis conducted for the 2012 RTIP Amendment No. 2 and 2050 RTP using budgets from the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*. Table 3-2 demonstrates that the 2012 RTIP, as amended, and the 2050 RTP meet the budgets for the 2008 Eight-Hour Ozone Standard. Projected reactive organic gas (ROG) and nitrogen oxide (NOx) emissions for 2015, 2020, 2025, 2035, and 2040 are below the established SIP budgets. The analysis for 2050 is presented for informational purposes.

Table 3-3 shows that projected CO emissions from the 2012 RTIP, as amended and the 2050 RTP are below the 2003 CO budget of 730 tons per day.

**Table 3-1**  
**2012 RTIP - Amendment No. 2 (in \$000s)**  
**Transportation Control Measures (T-Tactics) Projects**

<b>RIDESHARING</b>	
Transportation Demand Management (TDM)	<u>\$35,482</u>
<i>Subtotal:</i>	<i>\$35,482</i>
<b>TRANSIT IMPROVEMENTS</b>	
Blue Line (including vehicle purchase)	\$582,901
Mid-Coast	\$1,730,090
I-15 BRT	\$145,909
Mid-City Rapid Bus	\$44,526
SuperLoop	\$37,177
South Bay BRT	\$99,908
Other BRT	\$27,954
Coastal Corridor (LOSSAN)	\$367,982
Bus/Rail Infrastructure	\$441,251
Bus/Rail Intermodal Stations	\$221,495
Bus/Rail Vehicle Purchase	\$208,538
Other Bus/Rail (Operations/Planning)	<u>\$1,013,723</u>
<i>Subtotal:</i>	<i>\$4,921,456</i>
<b>BICYCLE FACILITIES PROJECTS</b>	
Bicycle/Pedestrian Projects	<u>\$95,151</u>
<i>Subtotal:</i>	<i>\$95,151</i>
<b>TRAFFIC FLOW IMPROVEMENTS</b>	
Transportation Management System/Intelligent Transportation System	\$68,033
Traffic Management/Signal Projects	<u>\$47,376</u>
<i>Subtotal:</i>	<i>\$115,409</i>
<b>Total Transportation Tactics in 2012 RTIP:</b>	<b>\$5,167,498</b>
Total All Transportation Projects in 2012 RTIP:	\$12,636,237
Share of T-Tactics Projects in 2012 RTIP:	40.9%

**Table 3-2  
2012 RTIP Amendment No. 2 and 2050 Regional Transportation Plan  
Air Quality Conformity Analysis for 2008 Eight-Hour Ozone Standard**

Year	Average Weekday Vehicle Starts (1,000s)	Average Weekday Vehicle Miles (1,000s)	ROG		NOx	
			SIP Emissions Budget Tons/Day	ROG Emissions Tons/Day	SIP Emissions Budget Tons/Day	NOx Emissions Tons/Day
2015	14,274	84,365	53	23	98	37
2020	15,056	89,372	23	19	38	29
2025	15,838	94,378	21	16	30	20
2035	17,155	102,501	21	14	30	18
2040 <sup>(1)</sup>	17,891	106,906	21	15	30	19
2050 <sup>(2)</sup>	19,595	117,087	21	16	30	21

- (1) The emissions data for 2040 and 2050 was prepared using 2035 emission factors, as emission factors for 2040 and 2050 are not available from CARB. Also, adjustment factors are not available for these later years. Modeled emission results for 2040 and 2050 likely are overestimated due to these two factors.
- (2) The air quality conformity analysis was conducted for the years 2013 – 2040. Emissions data for 2050 is included for informational purposes only.
- Note: Emissions budgets from *Eight-Hour Ozone Redesignation Request and Maintenance Plan for San Diego County*, were found adequate for transportation conformity purposes by the U.S. EPA, effective April 4, 2013.

**Table 3-3  
2012 RTIP Amendment No. 2 and 2050 Regional Transportation Plan  
Air Quality Conformity Analysis for Carbon Monoxide**

Year	Average Weekday Vehicle Starts (1,000s)	Average Weekday Vehicle Miles (1,000s)	CO	
			SIP Emissions Budget Tons/Day	CO Emissions Tons/Day
2015	14,274	84,365	730	256
2018	14,743	87,369	730	223
2025	15,838	94,378	730	147
2035	17,155	102,501	730	134
2040 <sup>(1)</sup>	17,891	106,906	730	140
2050 <sup>(2)</sup>	19,595	117,087	730	153

- (1) The emissions data for 2040 and 2050 was prepared using 2035 emission factors, as emission factors for 2040 and 2050 are not available from CARB. Modeled emission results for 2040 and 2050 likely are over estimated due to this factor.
- (2) The air quality conformity analysis was conducted for the years 2013 – 2040. Emissions data for 2050 is included for informational purposes only.

Note: Emissions budgets for the San Diego region from 2004 Revision to California State Implementation Plan for Carbon Monoxide, Updated Maintenance Plan for Ten Federal Planning Areas (Approved as SIP revision in January 2006).

**Conclusion**

Based upon an evaluation of projects and funds programmed and a quantitative emissions analysis, the 2012 RTIP, as amended, and 2050 RTP meet the U.S. EPA transportation conformity regulations contained within the federal guidelines published on August 15, 1997, and subsequent amendments, as well as the requirements of the federal Clean Air Act amendments of 1990.

## **APPENDICES**



## **Appendix A**

# **PROJECTS EXEMPT FROM AIR QUALITY CONFORMITY DETERMINATION**





## APPENDIX A

### PROJECTS EXEMPT FROM AIR QUALITY CONFORMITY DETERMINATION\*

<b>SAFETY</b>	
<ul style="list-style-type: none"> <li>- Railroad/highway crossing.</li> <li>- Safer non-federal-aid systems roads.</li> <li>- Increasing sight distance.</li> <li>- Traffic control devices and operating assistance other than signalization projects.</li> <li>- Pavement resurfacing and/or rehabilitation.</li> <li>- Emergency relief (23 U.S.C. 125).</li> <li>- Skid treatments.</li> <li>- Adding medians.</li> <li>- Lighting improvements.</li> <li>- Emergency truck pullovers.</li> </ul>	<ul style="list-style-type: none"> <li>- Projects that correct, improve, or eliminate a hazardous location or feature.</li> <li>- Shoulder improvements.</li> <li>- Highway Safety Improvement Program implementation.</li> <li>- Railroad/highway crossing warning devices.</li> <li>- Guardrails, median barriers, crash cushions.</li> <li>- Pavement marking.</li> <li>- Fencing.</li> <li>- Safety roadside rest areas.</li> <li>- Truck climbing lanes outside the urbanized area.</li> <li>- Widening narrow pavements or reconstructing bridges (no additional travel lanes).</li> </ul>
<b>MASS TRANSIT</b>	
<ul style="list-style-type: none"> <li>- Operating assistance to transit agencies.</li> <li>- Rehabilitation of transit vehicles.</li> <li>- Purchase of operating equipment for vehicles (e.g., radios, fareboxes, lifts, etc.).</li> <li>- Construction of small passenger shelters and information kiosks.</li> <li>- Rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way.</li> <li>- Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of fleet.</li> </ul>	<ul style="list-style-type: none"> <li>- Purchase of support vehicles.</li> <li>- Purchase of office, shop, and operating equipment for existing facilities.</li> <li>- Construction or renovation of power, signal, and communications systems.</li> <li>- Reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals, and ancillary structures).</li> <li>- Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR part 771.</li> </ul>
<b>AIR QUALITY</b>	
<ul style="list-style-type: none"> <li>- Continuation of ride-sharing and van-pooling promotion activities at current levels.</li> </ul>	<ul style="list-style-type: none"> <li>- Bicycle and pedestrian facilities.</li> </ul>
<b>OTHER</b>	
<ul style="list-style-type: none"> <li>- Specific activities which do not involve or directly lead to construction, such as:  <ul style="list-style-type: none"> <li>Planning and technical studies.</li> <li>Grants for training and research programs.</li> <li>Planning activities conducted pursuant to titles 23 and 49 U.S.C.</li> <li>Federal-aid systems revisions.</li> </ul> </li> <li>- Sign removal.</li> <li>- Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities).</li> </ul>	<ul style="list-style-type: none"> <li>- Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action.</li> <li>- Noise attenuation.</li> <li>- Emergency or hardship advance land acquisitions (23 CFR 710.204(d)).</li> <li>- Acquisition of scenic easements.</li> <li>- Plantings, landscaping, etc.</li> <li>- Directional and informational signs.</li> <li>- Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes.</li> </ul>
<b>ALL PROJECTS</b>	
<ul style="list-style-type: none"> <li>- Intersection channelization projects.</li> <li>- Interchange reconfiguration projects.</li> <li>- Truck size and weight inspection stations.</li> </ul>	<ul style="list-style-type: none"> <li>- Intersection signalization projects at individual intersections.</li> <li>- Changes in vertical and horizontal alignment.</li> <li>- Bus terminal and transfer points.</li> </ul>

\*Source: Part II Environmental Protection Agency 40 CFR Parts 51 & 93 Transportation Conformity Rule, as amended, January 24, 2008.



**Appendix B**

**REGIONAL EMISSIONS ANALYSIS  
AND MODELING PROCEDURES**



## Appendix B

# REGIONAL EMISSIONS ANALYSIS AND MODELING PROCEDURES

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### BACKGROUND

The federal Clean Air Act (CAA), which was last amended in 1990, requires the U.S. Environmental Protection Agency (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 non-attainment areas.

The U.S. EPA requires that each state containing non-attainment 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.

SANDAG and the U.S. Department of Transportation (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 October 28, 2011, the SANDAG Board made a finding of conformity of the *2050 San Diego Regional Transportation Plan: Our Region, Our Future* (2050 RTP) and the 2010 RTIP Amendment No. 13 and adopted the plan. The U.S. DOT, in consultation with U.S. EPA, made its conformity determination on December 2, 2011.

On September 28, 2012, the SANDAG Board of Directors adopted the final 2012 RTIP and its conformity determination and redetermination of conformity for the 2050 RTP. The U.S. DOT, in consultation with U.S. EPA, made its conformity determination on December 13, 2012.

The San Diego region attained the federal One-Hour Ozone Standard in 2001. The U.S. EPA redesignated the San Diego air basin as attainment/maintenance and approved the One-Hour Ozone Maintenance Plan as a SIP revision, effective on July 28, 2003. On June 15, 2005, the U.S. EPA revoked the federal One-Hour Ozone Standard after the 1997 Eight-Hour Ozone Standard became applicable for conformity.

On April 15, 2004, the EPA designated the San Diego air basin as non-attainment 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 non-attainment designation. As shown in Figure B.1, La Posta Areas #1 and #2, Cuyapaipe, Manzanita, and Campo Areas #1 and #2 are attainment areas for the 1997 Eight-Hour Ozone NAAQS.

The air basin initially was classified as a basic non-attainment 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, U.S. EPA ruled that the San Diego basic non-attainment area be reclassified as a Subpart 2 moderate non-attainment 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 re-designation 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 U.S. EPA as a SIP revision. On December 20, 2012, the U.S. EPA initiated its adequacy review of the plan and posted the document for a 30-day public review period that closed January 22, 2013. U.S. EPA found the emission budgets in the plan adequate for use in transportation conformity effective April 4, 2013. U.S. EPA final approval of the plan has yet to occur.

On May 21, 2012, the U.S. EPA designated the San Diego air basin as a non-attainment area for the new 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 is required to determine conformity to the new standard by July 20, 2013. In addition, the U.S. EPA has approved a new model to forecast regional emissions Emissions FACTors 2011 (EMFAC2011) for conformity purposes effective March 6, 2013. EMFAC2011 was used to conduct this conformity analysis. The U.S. EPA final rule also provides for the revocation of the 1997 Eight-Hour Ozone NAAQS for transportation conformity purposes to become effective on July 20, 2013. For this non-attainment designation, tribal areas that were previously excluded are now included as part of the San Diego region non-attainment designation.<sup>1</sup>

The San Diego region also has been designated by the U.S. EPA as a federal maintenance area for the Carbon Monoxide (CO) standard. On November 8, 2004, CARB submitted the 2004 revision to the California SIP for CO to the U.S. EPA. Effective January 30, 2006, the U.S. EPA has approved this maintenance plan as a SIP revision.

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<sup>1</sup> One small portion (approximately 119 acres) of the Pechanga Band of Luiseno Indians purchased within the north portion of San Diego County piece of tribal land was excluded from the San Diego region 2008 Eight-Hour Ozone standard non-attainment designation. All other tribal lands within San Diego County were included in the designation.

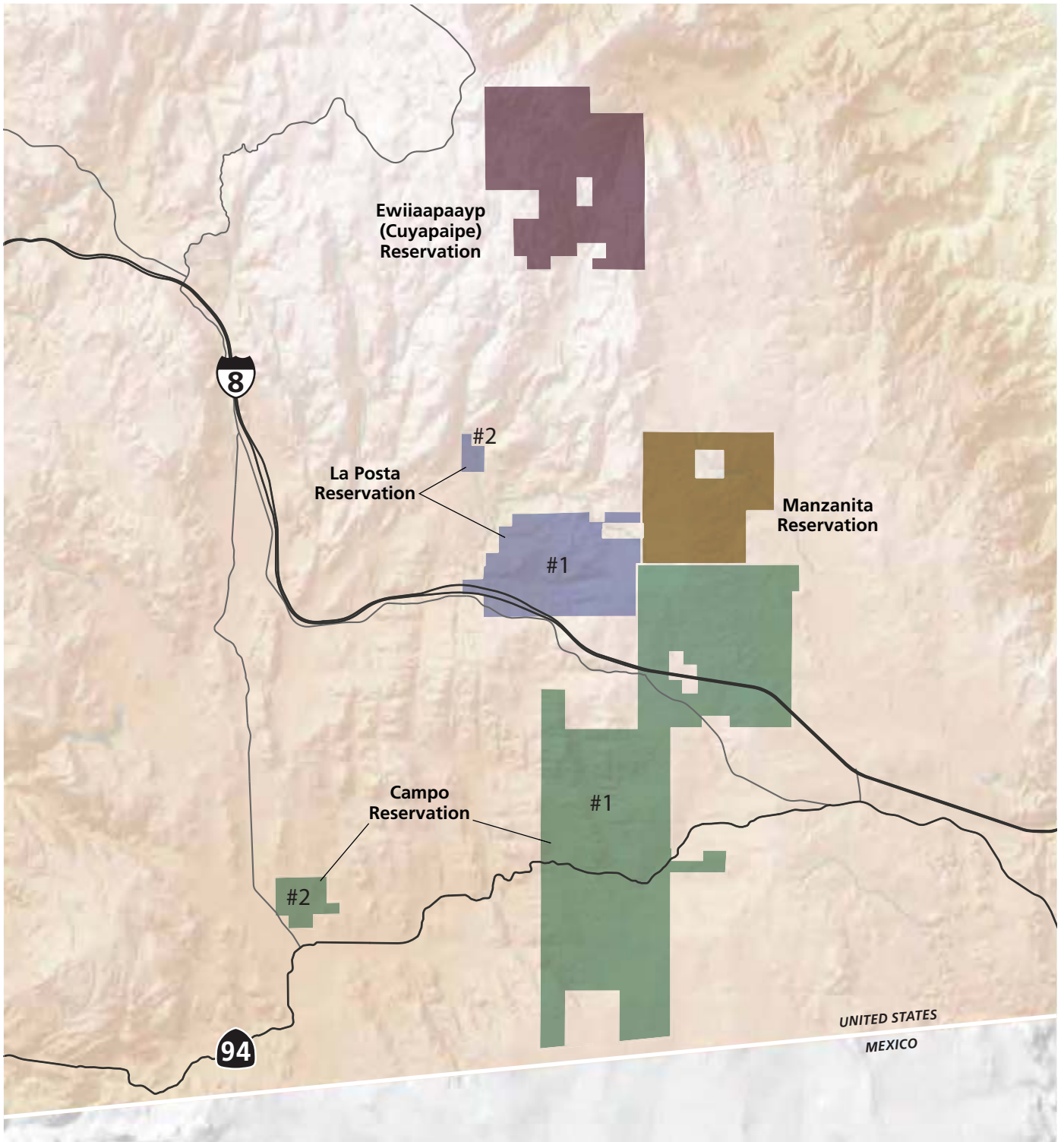
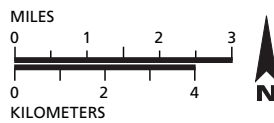


Figure B.1  
**Eastern San Diego County  
 Attainment Areas  
 for the Eight-Hour Ozone  
 NAAQS**

October 2011

Data Source: US EPA, Region 9 GIS Center  
 1997 Eight-Hour Ozone Standard



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## TRANSPORTATION CONFORMITY: MODELING PROCEDURES

### Introduction

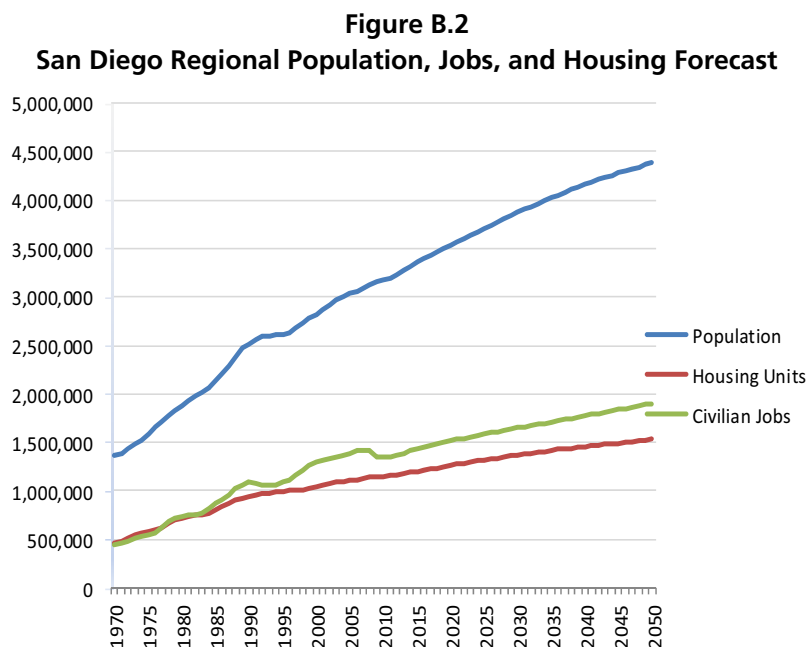
The 2012 RTIP Amendment No. 2 is consistent with the 2050 RTP. As a financially constrained plan, the 2012 RTIP, as amended, only contains major transportation projects listed in the Revenue Constrained 2050 RTP that are being implemented in the five-year 2012 RTIP period. Chapter 4 of the 2012 RTIP includes a detailed discussion on fiscal constraint. Conformity of the 2050 RTP expires on December 2, 2015; Tables B.2 and B.4 include the conformity analysis for both the 2012 RTIP, as amended, and the conformity redetermination for the 2050 RTP.

### 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 recent is the 2050 Regional Growth Forecast, which was adopted by the SANDAG Board on October 28, 2011, and was utilized in the development of the 2050 RTP and the 2012 RTIP, as amended.

The forecast process relies upon three integrated forecasting models. The first one, the Demographic and Economic Forecasting Model (DEFM), provides a detailed econometric and demographic forecast for the entire region. The second one, the Interregional Commuting Model, provides a forecast of commuting between the San Diego region, Orange County, southwest Riverside County, Imperial County, and Tijuana/Northern Baja California/Mexico. The third one, the Urban Development Model, allocates the results of the first two models to subregional areas based upon the current plans and policies of the jurisdictions.

On February 6, 2013, SANDAG consulted with the San Diego Region Conformity Working Group (CWG) on the use of the 2050 Regional Growth Forecast for the air quality conformity analysis of the 2012 RTIP, as amended, and 2050 RTP 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 B.2 and Table B.1 show the regional population, jobs, and housing growth forecast for the San Diego region through 2050.



Source: 2050 Regional Growth Forecast, SANDAG, October 2011

**Table B.1  
San Diego Regional Population and Employment Forecast**

<b>2050 Regional Growth Forecast</b>		
<b>Year</b>	<b>Population</b>	<b>Civilian Employment</b>
2008	3,131,552	1,411,811
2020	3,535,000	1,515,346
2030	3,870,000	1,648,361
2040	4,163,688	1,773,399
2050	4,384,867	1,898,769

Source: 2050 Regional Growth Forecast, SANDAG, October 2011

The 2050 Regional Growth Forecast is based largely upon the adopted general plans and community plans and policies of the 18 cities and, in some cases, includes draft plans which are nearing completion. Because many of the local general plans have horizon years of 2030 – twenty 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. For the unincorporated area, the forecast is based upon the County’s Referral Alternative draft of the General Plan update, with additional constraints included for sensitive habitat areas.

**Transportation Modeling**

SANDAG follows a widely used, four-step transportation modeling process of trip generation, trip distribution, mode choice, and assignment to forecast travel activity in the San Diego region. After a first pass through the four steps, a feedback process is used to pass congested travel conditions back into trip distribution and through to assignment. After several feedback iterations, a final pass is made through the mode choice and assignment steps to reflect congested travel conditions in mode decision making. Travel model results then are combined with additional post-process input and output functions to form the complete modeling chain. A truck model is run parallel to the four-step model and truck origin-destination trip tables are merged with vehicle trip tables for highway assignment and air quality procedures.

The estimates of regional transportation-related emissions meet the requirements established in the Transportation Conformity Rule, Sections 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 of travel.

TransCAD 5.0 is the transportation planning computer package used by SANDAG to provide a framework for performing much of the computer processing involved with modeling and is used for the trip distribution and assignment steps. Another software package used extensively in the modeling process is ArcInfo. This geographic information system (GIS) maintains, manipulates, and displays transportation, land use, and demographic data. SANDAG has written numerous programs that provide a linkage between TransCAD and ArcInfo. Other custom programs perform some modeling functions such as trip generation and mode choice.

A number of data files and surveys are used to calibrate the transportation models. These include:

- 1991 San Diego Visitor Survey
- 1995 San Diego Region Travel Behavior Study
- 2000 Census Transportation Planning Package
- 2000 Market Research Survey
- 2001 Caltrans Statewide Travel Survey
- 2001-2003 San Diego Regional Transit Survey
- 2002 Freight Analysis Framework
- 2006 San Diego Household Travel Study
- 2010 Freight Gateway Study
- External Trip Surveys (2006 Interregional Travel Behavior Study)
- Traffic Generation Studies

In addition to model parameters derived from these surveys, there are three major inputs to the transportation models:

- Growth forecast inputs used to describe existing and planned land use patterns and demographic characteristics
- Highway networks used to describe existing roadway facilities and planned improvements to the roadway system
- Transit networks used to describe existing and planned public transit service

### **Highway Networks**

The regional highway networks in the 2012 RTIP, as amended, and 2050 RTP 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 zones.

The route improvements and additions in the 2012 RTIP, as amended, and 2050 RTP 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.

The networks also account for programs intended to improve the operation of the highway system, including high occupancy vehicle (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, and 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. Facilities with proposed or existing 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 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 level of service D or better.

Based upon the networks and programs described above, the transportation forecasts of the 2012 RTIP, as amended, and 2050 RTP differentiate between eight highway modes:

- Drive alone non-toll
- Drive alone toll
- Shared-ride non HOV/non-toll
- Shared-ride HOV/non-toll
- Shared-ride HOV/Toll
- Light-heavy-duty
- Medium-heavy-duty
- Heavy-heavy-duty

SANDAG maintains a master highway network from which a specific year network, between the years 2008 (the 2050 Regional Growth Forecast base year) and 2050, can be built. Four networks were built and verified (2015, 2025, 2035, and 2040) for air quality conformity analyses of the 2012 RTIP, as amended, and 2050 RTP. Reactive organic gasses (ROG) and nitrogen oxides (NOx) data were interpolated for 2020 and CO data was interpolated for 2018. A network also was built and verified for the year 2050 for an air quality analysis for informational purposes.

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, is included in Tables B.6 and B.8. Locally funded, regionally significant projects also have been included in the air quality conformity analysis. These projects are funded with *TransNet* funds, a 20-year, half-cent local sales tax for transportation that expired in 2008; *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. As a result, the only additional facilities that are added to the transportation coverage for transit modeling purposes are:

- Trolley and commuter rail lines
- Streets used by buses that are not part of local general plan circulation elements.

Seven transit modes group routes with similar operating characteristics. They are:

- Commuter Rail
- Trolley/Light Rail
- Bus Rapid Transit (BRT)
- Rapid Bus

- Limited-Express Bus
- Express Bus
- Local Bus

BRT service would have stations similar to commuter rail and light rail, and operating characteristics midway between rail and bus service. BRT service would be provided by advanced design buses operating on HOV lanes or Managed Lanes, some grade-separated transit ways, and surface streets with priority transit systems. Once TransCAD transit networks have been built, TransCAD finds minimum time paths between transit access points (TAPs). TAPs are selected transit stops that are used to represent walk and auto access to the transit system.

The following four sets of paths are created for modes:

- A.M. Peak-period local bus
- A.M. Peak-period premium service
- Mid-day local bus
- Mid-day premium service

Bus speeds assumed in the transit networks are derived from modeled highway speeds and reflect the effects of congestion. Regional and express transit routes on surface streets are assumed to operate out of congestion due to priority transit treatments. 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. TransCAD procedures replicate the San Diego region's complicated fare policies which differ among:

- Buses which collect a flat fare of between \$1 and \$4, 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 \$5 and \$6.50
- Proposed regional BRT routes, which are assumed to charge \$4
- Proposed Rapid Bus routes, which are assumed to charge \$2.50

Fares are expressed in 1999 dollars (consistent with household incomes from the 2050 Regional Growth Forecast) 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 RTP 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 2012 RTIP, as amended, and 2050 RTP. These transit projects also are funded with *TransNet* funds or other local revenue sources. Once network coding is completed, the transportation models are run for the applicable scenarios (2015, 2025, 2035, 2040, and 2050 (for informational purposes)). A list of major regional transit projects included in the analysis and their implementation phasing are provided in Table B.7.

## Trip Generation

A trip generation analysis is the first step in the transportation modeling process. Average weekday trip ends, by all forms of transportation and starting and ending in each zone, are estimated for ten trip types.

- Home-to-work
- Home-to-college
- Home-to-school
- Home-to-shop
- Home-to-other
- Work-to-other
- Other-other
- Serve passenger
- Visitor
- Airport

The model computes person trips, which account for all forms of transportation including automobiles, trucks, taxicabs, motorcycles, public transit, bicycling, and walking.

The trip generation model works by applying trip rates to zone-level growth forecasts. The model calculates each of the trip ends separately as trip productions and attractions. Trip production rates are expressed as trips per household, while trip production rates vary by trip type and structure type. Trip attractions are expressed as trips per acre of nonresidential land use or trips per household. Trip attraction rates vary by trip type and land use category. The 2050 Regional Growth Forecast was used to produce trip generation forecasts for the years 2015, 2025, 2035, 2040, and 2050. Trip generation rates were established by utilizing data from traffic generator studies, as well as expanding rates from the 1995 San Diego Region Travel Behavior Study, the 2006 San Diego Household Travel Study, and the 2001 Caltrans Statewide Travel Survey.

The model reduces future year person-trips by a small amount to reflect increased use of teleworking and e-commerce. Reduction factors of 1, 3, or 5 percent were applied to selected trip purposes and land uses. Telework reduction factors depend on the likelihood the land use type would have employee categories that could feasibly telecommute. Reduction factors start in year 2020.

The truck model follows a process similar to the one followed by the person model. The model computes truck vehicle trips for heavy-duty trucks, including light heavy-duty, medium heavy-duty, and heavy heavy-duty trucks. The truck classifications correspond to the CARB truck classifications used in the air quality model EMFAC2011. Trip production and attraction rates are expressed as trips per employee and the rates vary by employee industry category.

## Trip Distribution

After trip generation analysis is completed, trip movements between zones are determined using a form of the trip distribution models known as the doubly-constrained, gamma-function gravity model. Inputs to the trip distribution model include zone-level trip generation forecasts by trip type, zone-to-zone impedances, and gamma function parameters by trip type and 4D category. 4D index categories attempt to define locations by their density, diversity, distance, and urban design characteristics. A high 4D index value represents areas that would be considered smart growth and would result in shortened trip lengths. In this way, the model is designed to reflect changing trip patterns in response to the types of new development in land use scenarios. The model also modifies trip patterns as new roadways are added.

A truck trip distribution analysis is performed in a similar manner, but is used to distribute vehicle trips rather than person trips by purpose, as in the person model. The truck model also uses different distribution parameters by vehicle type, which are not segmented by 4D category.

The model is calibrated to match observed trip length frequencies from the 2006 Household Travel Study and the 2001 Caltrans Statewide Travel Survey. Zone-to-zone impedances are a composite measure of peak and off-peak travel times and costs by highway, transit, and non-motorized modes.

## **Mode Choice**

At this point in the modeling process, total person-trip movements between zones are split into different forms of transportation by highway, transit, and non-motorized modes (bicycling and walking). Highway modes include drive-alone non-toll, drive-alone toll, shared-ride non HOV/non-toll, shared-ride HOV/non-toll, and shared-ride HOV/toll. Nine transit modes differentiate transit trips by three ride modes (rail, BRT, and bus) and three access modes (walk, drive, and drop-off). The mode choice model is designed to link mode use to demographic assumptions, highway network conditions, transit system configuration, land use alternatives, parking costs, transit fares, and auto operating costs. Trips between zone pairs are allocated to modes based on the cost and time of traveling by a particular mode, compared with the cost and time of traveling by other modes. For example, vehicle trips on a congested route would be more likely to be diverted to light rail than vehicle trips on an uncongested freeway.

Income level also is considered, because lower-income households tend to own fewer automobiles, and therefore make more trips by transit and carpooling. People in higher-income households tend to choose modes based upon time and convenience rather than cost. The mode choice model is calibrated using the 1995 San Diego Region Travel Behavior Study and the 2006 Household Travel Study trip tables by mode and income and 2001-2003 Regional Transit Survey transit trip characteristics. Regional-level Census 2000 work-trip mode shares also were used to fine tune mode-share estimates.

Highway and transit travel times reflect highway congestion effects from the final iteration of the feedback loop. The model produces a.m. peak, p.m. peak, and off-peak period trip tables for vehicles and transit riders. The a.m. peak period is from 6 to 9 a.m. and the p.m. peak period is from 3 to 6 p.m. The off-peak period covers the remaining 18 hours of the day.

## **Highway and Transit Assignment**

Highway assignment produces traffic-volume estimates for all roadway segments in the system. These traffic volumes are an important input to emissions modeling. Similarly, transit trips are assigned to transit routes and segments.

### *Highway*

SANDAG loads traffic using the TransCAD Multimodal Multiclass Assignment function. Before loading the traffic onto the network, the three truck modes are combined with the five passenger vehicle modes. Multi-class assignment allows SANDAG to assign the eight vehicle modes (as defined in the highway network section) 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 a.m. peak, p.m. peak, and off-peak periods. 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.

Model accuracy is assessed by comparing model estimated traffic volumes with actual traffic counts obtained through the SANDAG traffic monitoring program and Highway Performance Monitoring System estimates of Vehicle Miles of Travel (VMT).

After completing the highway assignments, additional processing is needed. Adjustments are made for calibration error volume, HOV/managed lane volume, bus volumes, hourly distribution factors, Level of Service, and travel time.

### *Transit*

For transit assignment, TransCAD software assigns TAP-to-TAP transit trips to the network. Eight separate transit assignments are produced for peak and off-peak periods; walk and auto access; and local bus and premium service. These individual assignments are summed to obtain total transit ridership forecasts.

Before assigning transit trips, external transit trips coming into San Diego from outside the region need to be added to the internal transit trips estimated by the mode choice model. Currently, few transit trips enter from the north or east; however, over 20,000 transit trips cross the United States-Mexico border each day. To account for these trips, an external transit trip table for the base year is developed from on-board transit ridership surveys and factored to future years based upon border crossing trends.

For accuracy, transit ridership forecasts from the transit assignment model are compared with transit counts from the SANDAG transit passenger counting program to determine whether transit modeling parameters need to be adjusted.

Some of these comparisons of model-estimated boardings with actual boardings include:

- System-level boardings, which may reveal transfer rate problems and lead to changes to the transfer wait time factor in the mode choice model
- Boardings by mode, which may reveal modal biases and lead to changes in mode choice modal constants
- Boardings by frequency of service, which may show biases that lead to changes in the first wait factor in the mode choice model
- A Centre City screenline crossings, which may lead to changes in parking costs, and boardings by stop location, which may indicate problems with specific generators such as a university

### **Post-TransCAD Processing**

Standard TransCAD output needs to be reformatted and adjusted to be useful for emissions modeling. Several routines and computer programs have been written to accomplish the following major functions:

- Correcting link-specific traffic volume forecasts for calibration errors
- Adding in estimated travel on roads not in the transportation modeling process
- Computing link speeds based upon corrected link volumes, highway capacity manual relationships between congestion, and speed (or signal delay)
- Splitting link volumes into heavy-duty truck and other traffic to obtain speed distributions by vehicle class



- Preparing a data set that contains total VMT and VMT by speed category by time of day for each vehicle class

## **Motor Vehicle Emissions Modeling**

### *Emissions Model*

In September 2011, CARB released EMFAC2011 and the U.S. EPA approved this emissions model for use in conformity determinations on March 6, 2013. EMFAC2011 is an integrated model that combines emission rate data with vehicle activity to calculate regional emissions. EMFAC2011 reflects recent CARB rulemakings for on-road diesel fleet rules, Pavley Clean Car Standards, and the Low Carbon Fuel Standard (LCFS). EMFAC2011 is made up of three modules: EMFAC2011-SG (scenario air quality assessment); EMFAC2011-LDV (passenger vehicle emissions); and EMFAC2011-HD (diesel trucks and buses). As noted in CARB's EMFAC2011 Technical Documentation, EMFAC2011-SG takes the output from EMFAC2011-LDV and EMFAC2011-HD and applies scaling factors to estimate emissions consistent with regional vehicle miles of travel (VMT) and speeds. Scaling factors are based on changes in total VMT, VMT distribution by vehicle class, and speed distribution. The SG module reports total emissions as tons per average weekday for each pollutant by vehicle class, and the total vehicle fleet for years between 1990 and 2035.

Using EMFAC2011-SG, projections of daily regional emissions we prepared for ROG, NOx, and CO.

The following process emissions are generated for each pollutant.

- All Pollutants – Running Exhaust, Idling Exhaust, Starting Exhaust, Total Exhaust.
- ROG and total organic gasses (TOG) – Diurnal Losses, Hot-Soak Losses, Running Losses, Resting Losses, Total Losses
- PM10 and PM2.5 – Break wear, Tire wear, Total Wear

EMFAC2011 models two fuels; gasoline and diesel. Forty-two vehicle classes are modeled in EMFAC2011, including the following vehicle class categories:

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

The air quality analysis of the 2012 RTIP Amendment No. 2 and 2050 RTP conformity redetermination was conducted using EMFAC2011-SG.

## **Regional Emissions Forecasts**

Regional transportation forecasts were initiated in February 7, 2013. Output from the TransCAD model was then reformatted and adjusted to be useful for emissions modeling.

### *Eight-Hour Ozone Standard*

Effective April 4, 2013, the U.S. EPA found the Eight-Hour Ozone budgets included in the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County* adequate for transportation conformity purposes. Beginning in February 2013, SANDAG prepared countywide forecasts of average weekday ROG and NOx emissions for 2015, 2020 (interpolated), 2025, 2035, 2040, and 2050 (for informational purposes), using the EMFAC2011 model. ROG and NOx emissions are based upon the summer season.

The analysis years were selected to comply with 40 CFR Sections 93.106(a)(1) and 93.118(a) of the Transportation Conformity Rule and the approved methodology for conducting the air quality conformity analyses for the 2012 RTIP, as amended, and 2050 RTP, which shortened the conformity horizon to 2040 and requires an informational analysis of the plan horizon year (2050). According to these sections of the Conformity Rule, the first horizon year (2015) must be within ten years from the base year used to validate the regional transportation model (2008), the last horizon year must be the last year of the transportation plan's forecast period, or in the case of the 2012 RTIP, as amended, and 2050 RTP, the last year of the conformity determination (2040), and the horizon years may be no more than ten years apart (2025 and 2035), ROG and NOx data for the year 2020 were interpolated and included to demonstrate conformity to the budgets included in the Maintenance Plan.

### *CO Standard*

CO regional emissions were projected for 2015, 2018 (interpolated), 2025, 2035, 2040, and 2050 (for informational purposes) for the conformity determination of the 2012 RTIP Amendment No. 2 and 2050 RTP conformity redetermination. CO emissions are based upon the winter season.

### *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 2012 RTIP Amendment No. 2 and redetermine conformity of the 2050 RTP, the plan must comply with the emission analysis described in the Regional Emissions Forecast section. Table B.2 shows that the projected ROG and NOx emissions from the 2012 RTIP, as amended, and 2050 RTP are below the ROG and NOx budgets.

Table B.2  
 2012 RTIP Amendment No. 2 and 2050 Revenue Constrained RTP  
 Air Quality Conformity Analysis for 2008 Eight-Hour Ozone Standard

Year	Average Weekday Vehicle Starts (1,000s)	Average Weekday Vehicle Miles (1,000s)	ROG		NOx	
			SIP Emissions Budget Tons/Day	ROG Emissions Tons/Day	SIP Emissions Budget Tons/Day	NOx Emissions Tons/Day
2015	14,274	84,365	53	23	98	37
2020	15,056	89,372	23	19	38	29
2025	15,838	94,378	21	16	30	20
2035	17,155	102,501	21	14	30	18
2040 <sup>(1)</sup>	17,891	106,906	21	15	30	19
2050 <sup>(2)</sup>	19,595	117,087	21	16	30	21

(1) The emissions data for 2040 and 2050 was prepared using 2035 emission factors, as emission factors for 2040 and 2050 are not available from CARB. Also, adjustment factors are not available for these later years. Modeled emission results for 2040 and 2050 likely are overestimated due to these two factors.

(2) The air quality conformity analysis was conducted for the years 2013 – 2040. Emissions data for 2050 is included for informational purposes only

Note: Emissions budgets are from the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*, which were found adequate for transportation conformity purposes by the U.S. EPA, effective April 4, 2013.

Adjustment factors for ROG and NOx were provided by CARB to account for regulations and minor technical improvements not yet included in the California Emissions Forecasting System inventories at the time of EMFAC2011 development. Table B.3 includes the adjustment factors by category and analysis year. Adjustment factors were provided for the years 2015, 2020, and 2025. Factors for later years were not available from CARB and, therefore, the adjustment factors for 2025 were carried over into later years.

Table B.3  
EMFAC2011 Adjustment Factors

Category	ROG Adjustment Factor (tons/day)					NOx Adjustment Factor (tons/day)				
	2015	2020	2025	2035	2040	2015	2020	2025	2035	2040
AB 1493	0.12	0.22	0.35	0.35	0.35	0.01	0.01	0.02	0.02	0.02
Moyer	-		-	-	-	-	-	-	-	-
Reformulated Gasoline	0.97	0.72	0.54	0.54	0.54	-	-	-	-	-
Prop 1B	-	-	-	-	-	0.71	-	-	-	-
Smog Check	1.05	0.87	0.50	0.50	0.50	0.54	0.38	0.20	0.20	0.20
Advanced Clean Cars	0.04	0.21	0.39	0.39	0.39	0.08	0.24	0.94	0.94	0.94
<b>Total*</b>	<b>2.17</b>	<b>2.03</b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>	<b>1.33</b>	<b>0.63</b>	<b>1.16</b>	<b>1.16</b>	<b>1.16</b>

Note: Adjustment factors were provided by CARB. The tons listed are subtracted from the EMFAC2011 output of tons per day for ROG and NOx. Adjustment factors were not available for years 2035 and 2040 and therefore reflect 2025 adjustments for those years.

\* Totals represent unrounded adjustment factors.

Table B.4 shows that projected CO emissions from the 2012 RTIP Amendment No. 2 and 2050 RTP are below the 2003 CO budget of 730 tons per day.

Table B.4  
2012 RTIP Amendment No. 2 and 2050 Revenue Constrained RTP  
Air Quality Conformity Analysis for Carbon Monoxide Standard

Year	Average Weekday Vehicle Starts (1,000s)	Average Weekday Vehicle Miles (1,000s)	CO	
			SIP Emissions Budget Tons/Day	CO Emissions Tons/Day
2015	14,274	84,365	730	256
2018	14,742	87,369	730	223
2025	15,838	94,378	730	147
2035	17,155	102,501	730	134
2040 <sup>(1)</sup>	17,891	106,906	730	140
2050 <sup>(2)</sup>	19,595	117,087	730	153

(1) The emissions data for 2040 and 2050 was prepared using 2035 emission factors, as emission factors for 2040 and 2050 are not available from CARB. Modeled emission results for 2040 and 2050 likely are overestimated due to this factor.

(2) The air quality conformity analysis was conducted for the years 2013 – 2040. Emissions data for 2050 is included for informational purposes only.

Note: Emissions budgets for the San Diego region from *2004 Revision to California State Implementation Plan for Carbon Monoxide, Updated Maintenance Plan for Ten Federal Planning Areas* (Approved as SIP revision in January 2006). Emissions results do not reflect CARB adjustment factors.

### 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 B.5 illustrates the exempt projects considered in the 2012 RTIP, as amended, and 2050 Revenue Constrained RTP. 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 B.5  
Exempt Projects

Project/Program Description	Project/Program Description
<b>Bikeway, Rail Trail, and Pedestrian Projects</b>	
Bayshore Bikeway	Maple Street Pedestrian Plaza
Bay-to-Ranch Bikeway	Mid-County Bikeway
Border Access Bicycle Corridor	Mira Mesa Bicycle Corridor
Camp Pendleton Trail	Mission Valley – Chula Vista Bicycle Corridor
Carlsbad – San Marcos Bicycle Corridor	North Park – Centre City Bicycle Corridor
Central Coast Bicycle Corridor	Otay Mesa Port of Entry Pedestrian/Bicycle Facilities
Chula Vista Greenbelt	Park Boulevard Bicycle Connector
City Heights – Old Town Bicycle Corridor	Poway Bicycle Loop
Clairemont – Centre City Bicycle Corridor	San Diego Regional Bicycle Plan
Coastal Rail Trail	San Diego River Multi-Use Bicycle and Pedestrian Path
East County Northern Bicycle Loop	San Luis Rey River Trail
East County Southern Bicycle Loop	Santee – El Cajon Bicycle Corridor
El Camino Real Bicycle Corridor	SR 52 Bikeway
Encinitas – San Marcos Bicycle Corridor	SR 56 Bikeway
Escondido Creek Bike Path Bridge and Bikeway	SR 56/Black Mountain Road Bikeway Interchange
Gilman Bicycle Connector	SR 125 Bicycle Corridor
Hillcrest – El Cajon Bicycle Corridor	SR 905 Bicycle Corridor
Imperial Beach Bicycle Connector	Sweetwater River Bikeway
Inland Rail Trail	Tecate International Border Crossing Pedestrian Facilities
Interstate 8 Bicycle Corridor	Ted Williams Parkway Pedestrian Bridge at Shoal Creek
Interstate 15 Bikeway	Third Avenue Bicycle and Pedestrian Access
Interstate 805 Bicycle Corridor	Vista Way Bicycle Connector
Kearny Mesa – Beaches Bicycle Corridor	West Bernardo Bike Path
Kensington – Balboa Park Bicycle Corridor	

<b>Project/Program Description (Cont.)</b>	<b>Project/Program Description</b>
<b>Safety Improvement Program</b>	<b>Transportation Systems Management</b>
Bridge Rehabilitation/Preservation/Retrofit	Automated Traveler Information System (ATIS)
Collision Reduction	Bus on Shoulder Service
Emergency Response	Compass Card
Hazard Elimination/Safe Routes to School	FasTrak®
Highway Maintenance	Freeway Service Patrol
Safety Improvement Program	Connected Vehicle Roadside Devices
Roadway/Roadside Preservation	Intermodal Transportation Management System (IMTMS)
Smart Growth Incentive Program	ITS Operations
<b>Transit Terminals</b>	Joint Transportation Operations Center (JTOC)
Airport Intermodal Transit Center/Terminal	Trolley Fiber Communication Network
San Ysidro Intermodal Transit Center/Terminal	Universal Transportation Account
University Town Center (UTC) Transit Center/Terminal	Various Traffic Signal/Prioritization

## **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 ridesharing, transit improvements, traffic flow improvements, and 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 2012 RTIP, as amended, and the 2050 RTP 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 Metropolitan Planning Agency 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 2012 RTIP Amendment No. 2 and 2050 RTP at meetings of the San Diego Region Conformity Working Group (CWG), as follows:

- On December 5, 2012, SANDAG staff presented the schedule for the preparation of the 2012 RTIP Amendment No. 2 and its air quality conformity analysis. The CWG also discussed the conformity analysis budgets, timeframe, and boundary. Staff confirmed that a redetermination of conformity would be done for the 2050 RTP, in conjunction with the 2012 RTIP, as amended, for consistency purposes.
- On February 6, 2013, 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. Staff also confirmed that the conformity timeline would be shortened to the year 2040, and an informational analysis would be conducted for projects in the 2041-2050 timeframe.
- On February 6, 2013, SANDAG staff distributed the draft list of capacity increasing and non-capacity increasing projects to be included in the 2012 RTIP amendment for interagency consultation. The project lists were discussed at the February 6, 2013, CWG meeting.



- On February 26, 2013, SANDAG released the draft air quality conformity analysis of the 2012 RTIP, as amended, and 2050 RTP to the CWG for a 30-day review-and-comment period. The draft air quality analysis was discussed at the March 6, 2013, meeting of the CWG. The draft 2012 RTIP, as amended, will be presented to the *TransNet* Independent Taxpayer Oversight Committee (ITOC) on April 10, 2013, for input.
- On April 5, 2013, the SANDAG Transportation Committee accepted for review and distribution the Draft 2012 Regional Transportation Improvement Program, Amendment No. 2, including its air quality conformity analysis and the draft air quality conformity redetermination of the 2050 Revenue Constrained Regional Transportation Plan for a 30-day public comment period.
- On May 17, 2013, the SANDAG Transportation Committee will be asked to recommend that the Board of Directors adopt the Final 2012 RTIP Amendment No. 2 and its conformity determination and the 2050 RTP conformity redetermination.
- On May 24, 2013, the SANDAG Board will be asked to adopt the Final 2012 RTIP Amendment No. 2 and its conformity determination and the 2050 RTP 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 B.6  
 Phased Highway Projects – 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Improvement Program Amendment No. 2

Conformity Analysis Year	Freeway	From	To	Existing	Improvements	(\$ Millions - 2010 Dollars)	
						Cost	Cumulative Cost
2015	I-805	Palomar St	SR 94	8F	8F+2HOV	\$200	\$2,911
2015	I-805	SR 52	Carroll Canyon Rd	8F/10F	8F/10F+2HOV	\$163	\$3,074
2015	I-805	Carroll Canyon Rd	I-5 (north)	8F/10F	8F/10F+2ML	\$87	\$3,161
2015	SR 905	I-805	Mexico	--	6F	\$595	\$3,756
2015	National City Marine Terminal		Bay Marina Drive, Civic Center Freeway Access Improvements			\$7	\$4,009
2015	SR 76	Melrose Drive	I-15	2C	4C	\$404	\$2,268
2015	I-15	SR 163	SR 56	8F+2ML(R)	10F+4ML/MB	\$419	\$1,654
2015	I-15	Centre City Parkway	SR 78	8F	8F+4ML	\$210	\$1,864
2025	I-5	Manchester Ave	SR 78	8F	8F+2HOV	\$480	\$480
2025	SR 11/ Otay Mesa East POE	SR 905	Mexico	--	4T	\$755	\$1,235
2025	SR 241	Orange County	I-5	--	4T	\$443	\$2,711
2025	Vesta Street Bridge		Mobility Connector over Harbor Drive at Naval Base San Diego			\$60	\$3,816
2025	32nd Street		Freeway Access Enhancement			\$119	\$3,935
2025	10th Avenue Marine Terminal Entrance		Rail Line Grade Separation/Barrio Logan Enhancement			\$67	\$4,002
2025	I-5	La Jolla Village Drive	I-5/I-805 Merge	8F/14F	8F/14F+2ML	\$250	\$4,259
2025	I-5/I-805	North to North & South to South (HOV Connectors)				\$110	\$4,369
2025	SR 15	I-805	I-8	8F	8F+2TL	\$45	\$4,414
2025	I-15	I-8	SR 163	8F	8F+2ML	\$130	\$4,544
2025	SR 15/ I-805	North to North & South to South (HOV Connectors)				\$90	\$4,634
2025	I-15/SR 78	East to South & North to West (HOV Connectors)				\$105	\$4,739
2025	SR 78	I-5	I-15	6F	6F+2ML/Operational	\$570	\$5,309
2025	SR 94	I-5	I-805	8F	8F+2ML	\$480	\$5,789
2025	SR 94/ SR 125	South to East (Freeway Connector)				\$139	\$5,928
2025	I-805	Palomar St	SR 15	8F/8F+2HOV <sup>1</sup>	8F+4ML	\$1,200	\$7,128

Table B.6  
Phased Highway Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
2012 Regional Transportation Improvement Program Amendment No. 2 (Cont.)

Conformity Analysis Year	Freeway	From	To	Existing	Improvements	(\$ Millions - 2010 Dollars)	
						Cost	Cumulative Cost
2025	I-805/ SR 94	North to West & East to South (HOV Connectors)				\$160	\$7,288
2025	I-805	SR 52	Carroll Canyon Rd	8F/10F+ 2HOV	8F/10F+4ML	\$391	\$7,679
2025	National City Rail Yard					\$7	\$7,686
2025	I-5/SR 56	West to North (Freeway Connector)				\$65	\$8,501
2025	I-5/SR 56	South to East (Freeway Connector)				\$120	\$8,621
2035	I-5	Palomar St	SR 15	8F	8F+2ML	\$200	\$7,886
2035	I-5	I-5/I-805 Merge	SR 56	8F/14F+2HOV	8F/14F+4ML	\$50	\$7,936
2035	I-5	SR 56	Manchester Ave	8F+2HOV	8F+4ML	\$500	\$8,436
2035	I-5	Manchester Ave	Palomar Airport Rd	8F+2HOV*	8F+4ML	\$950	\$9,571
2035	SR 67	Mapleview St	Dye Rd	2C/4C	4C	\$570	\$10,141
2035	SR 94/ SR 125	West to North (Freeway Connector)				\$180	\$10,321
2035	SR 125	SR 94	I-8	8F	10F	\$215	\$10,536
2035	SR 241	Orange County	I-5	4T	6T	\$58	\$10,594
2035	I-805	SR 905	Palomar St	8F	8F+4ML	\$350	\$10,944
2035	I-805	SR 15	Mission Valley Viaduct	8F	8F+4ML	\$230	\$11,174
2035	I-805	Mission Valley Viaduct	SR 52	8F/10F	8F/10F+4ML	\$637	\$11,811
2035	I-5	Palomar Airport Rd	SR 78	8F+2HOV*	8F+4ML	\$750	\$12,561
2035	I-5	SR 78	Vandegrift Blvd	8F	8F+4ML	\$420	\$12,981
2035	I-5/SR 78	South to East and West to North (HOV Connectors)				\$120	\$13,101
2035	I-5/SR 78	North to East and West to South (HOV Connectors)				\$120	\$13,221
2035	I-5/SR 78	South to East (Freeway Connector)				\$60	\$13,281
2035	I-5/SR 78	West to South (Freeway Connector)				\$46	\$13,327
2035	SR 15	SR 94	I-805	8F	8F+2ML	\$20	\$13,347
2035	SR 15/ SR 94	South to West & East to North (HOV Connectors)				\$80	\$13,427
2035	SR 52	I-805	I-15	6F	6F+2ML	\$223	\$13,650

Table B.6  
 Phased Highway Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Improvement Program Amendment No. 2 (Cont.)

Conformity Analysis Year	Freeway	From	To	Existing	Improvements	(\$ Millions - 2010 Dollars)	
						Cost	Cumulative Cost
2040	I-8	I-15	SR 125	8F/10F	8F/10F+Operational	\$125	\$13,775
2040	I-8	SR 125	2nd Street	6F/8F	6F/8F+Operational	\$125	\$13,900
2040	SR 52	I-15	SR 125	4F	6F+2ML(R)	\$325	\$14,225
2040	SR 56	I-5	I-15	4F	6F	\$135	\$14,360
2040	SR 76	I-15	Couser Canyon	2C	4C/6C+Operational	\$130	\$14,490
2040	SR 94	I-805	College Ave	8F	8F+2ML	\$220	\$14,710
2040	SR 94	College Ave	SR 125	8F	8F+2ML	\$230	\$14,940
2040	SR 125	SR 94	I-8	10F	10F+2ML	\$70	\$15,010
2040	I-805	Mission Valley Viaduct		8F	8F+4ML	\$610	\$15,620
2040	I-805/ SR 52	West to North & South to East (HOV Connectors)				\$90	\$15,710
2050	I-5	SR 905	Palomar St	8F	8F+2ML	\$95	\$15,805
2050	I-5	SR 54	I-15	8F	10F+2ML	\$165	\$15,970
2050	I-5	I-15	I-8	8F	8F+Operational	\$1,130	\$17,100
2050	I-5	I-8	La Jolla Village Dr	8F/10F	8F/10F+2ML	\$530	\$17,630
2050	I-5	Vandegrift Blvd	Orange County	8F	8F+4T	\$754	\$18,384
2050	I-8	I-5	I-15	8F	8F+Operational	\$440	\$18,824
2050	I-8	2nd Street	Los Coches	4F/6F	6F	\$54	\$18,878
2050	SR 15	I-5	SR 94	6F	8F+2ML	\$90	\$18,968
2050	I-15	Viaduct		8F	8F+2ML	\$720	\$19,688
2050	I-15	SR 78	Riverside County	8F	8F+4T	\$1,005	\$20,693
2050	I-15/SR 52	West to North and South to East (HOV Connectors)				\$140	\$20,833
2050	I-15/SR 56	North to West (Freeway Connector)				\$100	\$20,933
2050	SR 52	I-5	I-805	4F	6F	\$110	\$21,043
2050	SR 54	I-5	SR 125	6F	6F+2ML	\$100	\$21,143

Table B.6  
 Phased Highway Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Improvement Program Amendment No. 2 (Cont.)

Conformity Analysis Year	Freeway	From	To	Existing	Improvements	(\$ Millions - 2010 Dollars)	
						Cost	Cumulative Cost
2050	SR 94	SR 125	Avocado Blvd	4F	6F	\$90	\$21,233
2050	SR 94	Avocado Blvd	Jamacha Rd	4C	6C	\$30	\$21,263
2050	SR 94	Jamacha Rd	Steele Canyon Rd	2C/4C	4C	\$20	\$21,283
2050	SR 125	SR 905	San Miguel Rd	4T	8F	\$110	\$21,393
2050	SR 125	San Miguel Rd	SR 54	4F	8F	\$60	\$21,453
2050	SR 125	SR 54	SR 94	6F	6F+2ML	\$100	\$21,553

**KEY**

C = Conventional Highway Lanes      MB = Movable barrier      T = Toll Lanes  
 F = Freeway Lanes      ML = Managed lanes (HOV & Value Pricing)      TL = Transit Lanes  
 HOV = High Occupancy Vehicle Lanes      ML(R) = Managed lanes (Reversible)

\* Project completed in two phases. See improvement from 8F to 8F+2HOV by 2025.

Note: All HOV lanes would convert to Managed Lanes by 2035 with an HOV occupancy of 3+ people.

Table B.7  
Phased Transit Services - 2050 Regional Transportation Plan Revenue Constrained Plan and  
2012 Regional Transportation Improvement Program Amendment No. 2

Conformity Analysis Year	Service	Route	Description	Peak Headway (Minutes)	Off-Peak Headway (Minutes)
2015	COASTER	398	Double tracking/Increased Frequency between Oceanside and downtown San Diego with extension to Convention Center/Petco Park	20	Current
2015	Trolley	530	Green Line Extend to downtown – Bayside	15	15
2015	BRT	607	Rancho Bernardo – downtown Express	10	-
2015	BRT	608	Escondido – downtown Express	10	-
2015	BRT	610	Temecula (Peak Only)/Escondido – downtown	10	10
2015	BRT	628	South Bay BRT (Otay Mesa – downtown) via Otay Ranch/Millenia	15	-
2015	Rapid	15	Mid-City Rapid (SDSU – downtown) via Mid-City, El Cajon and Park Blvds	10	10
2015	Rapid	201/202	UTC Area Super Loop	10	15
2025	Trolley	510	Mid-Coast LRT Extension (peak frequencies 7.5 to downtown/15 to UTC)	7.5/15	15
2025	BRT	470	Escondido – UTC/UCSD via Mira Mesa Blvd	10	-
2025	BRT	680	Otay Mesa to Sorrento Mesa via I-805 Corridor, Otay Ranch/Millenia, National City, Southeastern San Diego, Kearny Mesa	15	15
2025	BRT	688	San Ysidro to Sorrento Mesa Express	15	-
2025	BRT	689	Millenia/Otay Ranch to UTC/Torrey Pines Express	15	-
2025	Rapid	350	Escondido to Del Lago via Escondido Blvd & Bear Valley	10	10
2025	Streetcar	554	Hillcrest/Balboa Park/downtown San Diego Loop	10	10
2025	BRT	90	Santee/El Cajon Transit Centers to downtown via SR 94	15	-
2025	BRT	640	I-5 - San Ysidro to downtown & Kearny Mesa via I-5 shoulder lanes/HOV lanes, downtown, Hillcrest, Mission Valley	15	15
2025	BRT	870	El Cajon to UTC via Santee, SR 52, I-805 (Peak only)	10	-
2025	Rapid	10	La Mesa to Ocean Beach via Mid-City, Hillcrest, Old Town	10	10
2025	Shuttle	448/449	San Marcos Shuttle	15	15
2025	Airport Express		I-5 from McClellan-Palomar Airport to San Diego International Airport	30	30
2025	Airport Express		I-15 from Escondido Transit Center to San Diego International Airport	30	30
2025	Airport Express		I-15 from Escondido Transit Center to Cross Border Facility	30	30
2025			Local Bus Routes - 15 minutes in key corridors	15	15

Table B.7  
Phased Transit Services - 2050 Regional Transportation Plan Revenue Constrained Plan and  
2012 Regional Transportation Improvement program Amendment No. 2 (Cont.)

Conformity Analysis Year	Service	Route	Description	Peak Headway (Minutes)	Off-Peak Headway (Minutes)
2025	SPRINTER	399	Double tracking (Oceanside-Escondido) Increased Frequencies	10	10
2025	SPRINTER	588	SPRINTER Express	10	15
2025	Rapid	2	North Park to downtown San Diego via North Park, Golden Hill	10	10
2025	Rapid	709	H Street Trolley to Otay Ranch/Millenia via H Street Corridor, Southwestern College	10	10
2025	Rapid	910	Coronado to downtown via Coronado Bridge	10	10
2035	COASTER	398	Additional Double tracking/Increased Frequency	20	60
2035	Trolley	561	UTC to Mira Mesa via Sorrento Mesa/Carroll Canyon (extension of route 510)	7.5	7.5
2035	Trolley	520	Orange Line - Increased Frequency (existing 15/15)	7.5	15
2035	Streetcar	553	Downtown San Diego: Little Italy to East Village	10	10
2035	BRT	890	El Cajon to Sorrento Mesa via SR 52, Kearny Mesa	10	-
2035	Rapid	28	Point Loma to Kearny Mesa via Old Town, Linda Vista	10	10
2035	Rapid	30	Old Town to Sorrento Mesa via Pacific Beach, La Jolla, UTC	10	10
2035	Rapid	120	Kearny Mesa to downtown via Mission Valley	10	10
2035	Rapid	473	Oceanside to UTC via Hwy 101 Coastal Communities, Carmel Valley	10	10
2035	Trolley	520	Orange Line - Extend to Airport Intermodal Transit Center	7.5	15
2035	Streetcar	555	30 <sup>th</sup> St to downtown San Diego via North Park/Golden Hill	10	10
2035	Trolley	560	Mid-City to downtown (Phase 1) via El Cajon and Park Blvds	7.5	7.5
2035	Trolley	563	Pacific Beach to El Cajon via Clairemont, Kearny Mesa, Mission Valley, SDSU	7.5	10
2035	BRT	653	Mid-City to Palomar Airport Road via Kearny Mesa/I-805/I-5	15	-
2035	Rapid	11	Spring Valley to SDSU via Southeastern San Diego, Downtown, Hillcrest, Mid-City	10	10
2035	Rapid	201/202	UTC Area Super Loop - Increase Frequencies	10	10
2035	Rapid	471	Downtown Escondido to East Escondido	10	10
2035	Rapid	474	Oceanside to Vista via Mission Ave/Santa Fe Road Corridor	10	10
2035	Rapid	635	Eastlake/EUC to Palomar Trolley via Main Street Corridor	10	10
2035	Rapid	636	SDSU to Spring Valley via East San Diego, Lemon Grove, Skyline	10	10
2035	Rapid	637	North Park to 32nd Street Trolley via Golden Hill	10	10

Table B.7  
 Phased Transit Services - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Program Amendment No. 2 (Cont.)

<b>Conformity Analysis Year</b>	<b>Service</b>	<b>Route</b>	<b>Description</b>	<b>Peak Headway (Minutes)</b>	<b>Off-Peak Headway (Minutes)</b>
2035	Rapid	638	San Ysidro to Otay Mesa via Otay, SR 905 Corridor	10	10
2035	Shuttle	448/449	San Marcos - Increase Frequencies	10	10
2035			Local Bus Routes - 10 minutes in key corridors	10	10
2040	Trolley	520	Orange Line - Increased Frequencies	7.5	7.5
2040	Trolley	522	Orange Line Express - El Cajon to downtown San Diego	10	10
2040	Trolley	530	Green Line Extend to downtown - Bayside	7.5	7.5
2040	Trolley	540	Blue Line Express - UTC to San Ysidro via downtown	10	10
2050	Trolley	560	SDSU to downtown (Phase 2) via Mid-City, El Cajon and Park Blvds	7.5	7.5
2050	Trolley	562	UTC to San Ysidro via Kearny Mesa, Mission Valley, Mid-City, Southeastern San Diego, National City/Chula Vista via Highland Ave/4th Ave	7.5	10



Table B.8  
Phased Arterial Projects\* - 2050 Regional Transportation Plan Revenue Constrained Plan and  
2012 Regional Transportation Improvement Program Amendment No. 2

Conformity Analysis Year	SANDAG ID	Lead Agency	Project Title	Project Description
2015	CB04A	Carlsbad	El Camino Real Widening - Tamarack Avenue to Chestnut Avenue	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
2015	CB04B	Carlsbad	El Camino Real and Cannon Road	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
2015	CB04C	Carlsbad	El Camino Real - Lisa Street to Crestview Drive	In Carlsbad, along the west side of El Camino Real, roadway widening to provide three southbound through lanes, curb, gutter and sidewalk per Prime Arterial standards
2015	CB12	Carlsbad	College Boulevard Reach A - Badger Lane to Cannon Road	In Carlsbad, from Badger Lane to Cannon Road, construct a new segment of College Blvd. to provide 4-lane roadway with raised median, bike lanes and sidewalks/trails in accordance with Major Arterial standards
2015	CB24	Carlsbad	College Boulevard and Palomar Airport Road - Intersection Improvements	In Carlsbad, at the intersection of College Blvd. and Palomar Airport Road, roadway widening along southbound College Blvd. to provide dual left turns, one thru lane, one shared thru/right turn lane and one right turn lane and to lengthen right turn lanes on the other approaches to the intersection
2015	CB26	Carlsbad	Melrose and Palomar Airport Road	In Carlsbad, at the intersection of Palomar Airport Road and Melrose Drive, roadway widening along southbound Melrose to provide an additional right turn lane to westbound Palomar Airport Road
2015	CB30	Carlsbad	El Camino Real – El Camino Real to Tamarack Avenue	In Carlsbad, at the intersection of El Camino Real and Tamarack Avenue construct a second left turn lane from El Camino Real to westbound Tamarack
2015	CHV08	Chula Vista	Willow Street Bridge Project - Bonita Road to Sweetwater Road	Replace and widen bridge including shoulders
2015	CHV20	Chula Vista	North Fourth Avenue and Brisbane Street	Add additional lane on east side of Fourth Avenue
2015	CNTY14	San Diego County	South Santa Fe Avenue North - Montgomery Drive to South of Woodland Drive	Vista City limits to 700 feet south of Woodland - reconstruct and widen from 2 to 4 lanes including bicycle lane
2015	CNTY21	San Diego County	Bradley Avenue Overpass at SR 67 - Magnolia Avenue to Mollison Avenue	Widen Bradley Avenue including the SR 67 overpass from 2 to 4 lanes plus sidewalks

\* The arterials listed in this table reflect locally initiated projects that were submitted by local jurisdictions in the 2012 Regional Transportation Improvement Program.

Table B.8  
Phased Arterial Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
2012 Regional Transportation Improvement Program Amendment No. 2(Cont.)

Conformity Analysis Year	SANDAG ID	Lead Agency	Project Title	Project Description
2015	CNTY35	San Diego County	Ramona Street Extension - 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
2015	CNTY36	San Diego County	San Vicente Road Improvements - Warnock Drive to Wildcat Canyon Road	In Ramona, design and reconstruct road improvements, including 2-lane community collector road with intermittent turn lanes, bike lanes, asphalt concrete dike, and pathway/walkway
2015	CNTY39	San Diego County	Bear Valley Parkway North - San Pasqual Valley Road to Boyle Avenue	Widen from 2 to 4 lanes, with a center median, a bike lane and shoulder in each direction of travel
2015	CNTY76	San Diego County	Jamacha Blvd (Phase 1 and 2) - Omega Street to Sweetwater Spring Boulevard	In unincorporated Spring Valley, the current funds programmed are for Phase 1 - between Omega Street and Spring Valley Glen, widen from 2-lane to 4-lane roadway with bicycle and pedestrian improvements
2015	ESC02	Escondido	Bear Valley/East Valley/Valley Center - Citrus Avenue to Beven Drive	Realignment and widening from 2 to 4 lanes
2015	ESC04	Escondido	Citracado Parkway II - West Valley to Harmony Grove	Widen from 2 to 4 lanes with raised medians, construct bridge over Escondido Creek
2015	ESC06	Escondido	El Norte Parkway Bridge at Escondido Creek - Kaile Lane to Key Lime Way	Construct missing 2-lane bridge at Escondido Creek
2015	ESC24	Escondido	Centre City Parkway - Mission Road to SR 78	Widen 4 lanes to 6 lanes with intersection improvements
2015	ESC25	Escondido	Citracado/Nordahl - Country Club Lane to SR 78	Widen from 4 lanes to 6 lanes with double left turn lanes and exclusive right turn lanes
2015	LG13	Lemon Grove	Street Improvements (Congestion Relief)	Lemon Grove Avenue Realignment Project: A key project in the redevelopment of the city's downtown Village Specific Plan, this project improves access to and from SR 94, reducing motorist delays and emissions, while greatly enhancing the visual appeal of the block adjacent to the trolley station.
2015	SD34	San Diego	El Camino Real	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)

Table B.8  
 Phased Arterial Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Improvement Program Amendment No. 2(Cont.)

Conformity Analysis Year	SANDAG ID	Lead Agency	Project Title	Project Description
2015	SD70	San Diego	West Mission Bay Drive Bridge	In San Diego, replace bridge and increase from 4- to 6-lane bridge including Class II bike lane (52-643)
2015	SD90	San Diego	SR 163/Clairemont Mesa Boulevard Interchange	In San Diego, widen from 4- to 6-lane prime arterial; Phase II of the project - west ramps (CIP 52-745.0)
2015	SD103	San Diego	I-5/Genesee Avenue Interchange	In San Diego, replace Genesee Avenue over crossing from 4-lane bridge with 6-lane bridge; construct auxiliary lanes and replace Voigt Drive bridge; add additional lane at on/off ramp to Sorrento Valley Rd.; add one carpool lane and one general purpose lane to on ramp from Sorrento Valley Road to southbound I-5; install ramp meters at on ramp and construct a southbound auxiliary lane between Sorrento Valley Road and Genesee Avenue
2015	SD133	San Diego	Mira Sorrento Place	Mira Sorrento Place from Scranton Road to Vista Sorrento Parkway in San Diego widen the existing 2-lane 560-foot portion of Mira Sorrento Place (40-foot road width, 55-foot right of way) to a 4-lane collector (72-foot road width, 92-foot right of way), and extend the road to intersect with Vista Sorrento Parkway at the existing on/off ramps to I-805
2015	SM25	San Marcos	Borden Road Street Improvements and Bridge Construction - Twin Oaks to Woodward Street	Construction of approximately 700 lineal feet of a new 4-lane secondary arterial including a bridge
2015	SM31	San Marcos	Discovery Street Improvements - McMahr Rd to Bent Avenue/Craven Road	Widen roadway to 4-lane secondary arterial
2015	SM32	San Marcos	Via Vera Cruz Bridge and Street Improvements - San Marcos Boulevard to Discovery Street	Widen to 4-lane secondary arterial and construct a bridge at San Marcos Creek
2015	SM44	San Marcos	Eastbound SR 78 Auxiliary lane - Woodland Parkway to Nordahl Road	Construct auxiliary lanes along eastbound SR 78 between Woodland Parkway Interchange and Nordahl Road Interchange; includes widening of Mission Road undercrossing
2015	SM48	San Marcos	Creekside Drive	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.

Table B.8  
 Phased Arterial Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Improvement Program Amendment No. 2(Cont.)

Conformity Analysis Year	SANDAG ID	Lead Agency	Project Title	Project Description
2015	VISTA08A	Vista	W. Vista Way - Emerald Drive to Grapevine Road	The scope of this project is to provide right of way acquisition and construction for the widening of W. Vista Way a distance of 1,500 feet from the intersection with Emerald Drive to the intersection with Grapevine Road
2025	CB13	Carlsbad	Poinsettia Lane Reach E - Cassia Drive to Skimmer Court	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
2025	CB22	Carlsbad	Avenida Encinas - Widen from Palomar Airport Road to EWPCF	In Carlsbad, Avenida Encinas from Palomar Airport Road southerly to existing improvements adjacent to the EWPCF, roadway widening to Secondary Arterial standards
2025	CB32	Carlsbad	El Camino Real Widening - Cassia to Camino Vida Roble	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
2025	CB31	Carlsbad	El Camino Real – La Costa Avenue to Arenal Road	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
2025	CB33	Carlsbad	Palomar Airport Road and El Camino Real Right Turn Lane	In Carlsbad, widening along eastbound Palomar Airport Road to provide a dedicated right turn lane to southbound El Camino Real
2025	CB34	Carlsbad	Palomar Airport Road - Palomar Airport Road to Paseo Del Norte	In Carlsbad widening along eastbound Palomar Airport Road to provide a dedicated right turn lane to southbound Paseo Del Norte
2025	CB35	Carlsbad	Palomar Airport Road - Palomar Airport Road to Paseo Del Norte	In Carlsbad lengthen the left turn pocket along eastbound Palomar Airport Road to northbound Paseo Del Norte
2025	CNTY24	San Diego County	Cole Grade Road - North of Horse Creek Trail to South of Pauma Heights Road	Widen to accommodate 14-ft traffic lane in both direction, 12-ft center 2-way left turn, 6-ft bike lane & 10-ft pathway
2025	CNTY34	San Diego County	Dye Road Extension - 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

Table B.8  
 Phased Arterial Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Improvement Program Amendment No. 2(Cont.)

Conformity Analysis Year	SANDAG ID	Lead Agency	Project Title	Project Description
2025	ENC31	Encinitas	I-5/Encinitas Boulevard Interchange Modification	Modify interchange to improve safety and alleviate congestion (design only)
2025	ESC02A	Escondido	East Valley/Valley Center	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
2025	ESC08	Escondido	Felicita Avenue/ Juniper Street - from Escondido Boulevard to Juniper Street and from Juniper Street to Chestnut Street	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
2025	ESC09	Escondido	Ninth Avenue – La Terraza Boulevard to Spruce Street	Widen from 2 to 4 lanes with raised median and modify traffic signals at Ninth Avenue and Tulip Street - design phase
2025	NC01	National City	Plaza Boulevard Widening	Widen from 2 to 3 lanes including a new traffic lane in each direction, new sidewalks, sidewalk widening, traffic signal upgrades and interconnection
2025	O06	Oceanside	Melrose Drive	Extension in Oceanside, future construction of 4-lane arterial highway with medians, sidewalks and bike lanes
2025	O26	Oceanside	SR 76 & Rancho Del Oro Boulevard	Widen SR 76 for one additional lane width 1,500 feet west and east of Rancho del Oro Boulevard
2025	SD83	San Diego	SR 163/Friars Road Interchange Modification	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 1). Construct new connector roadways and structures (Phase 2). Construct auxiliary lanes along northbound and southbound SR 163 (Phase 3)
2025	SD102A	San Diego	Otay Truck Route Widening	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
2025	SM19	San Marcos	Grand Avenue Bridge	In San Marcos, construct 4-lane arterial; between Bent Avenue to Discovery Street construct 6-lane arterial
2025	SM22	San Marcos	South Santa Fe - Bosstick to Smilax	Widen and realign existing road to 4-lane secondary arterial standards

Table B.8  
 Phased Arterial Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 Regional Transportation Improvement Program Amendment No. 2 (Cont.)

Conformity Analysis Year	SANDAG ID	Lead Agency	Project Title	Project Description
2025	SM24	San Marcos	Woodland Parkway Interchange Improvements – La Moree Road to Rancheros Drive	Modify existing ramps at Woodland Parkway and Barham Drive; widen and realign Barham Drive to accommodate a new eastbound SR 78 on-ramp; widen and realign SR 78 undercrossing and associated work
2025	SM30	San Marcos	San Marcos Boulevard Street Improvements - Rancho Santa Fe to Bent Avenue	Widen road to a 6-lane prime arterial
2025	SM42	San Marcos	Street Improvements: Discovery Street - Craven Road to West of Twin Oaks Valley Road	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
2025	SM43	San Marcos	Barham Drive - 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
2025	CNTY14A	San Diego County	South Santa Fe Avenue South - 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 ft. south of Woodland Dr to Smilax Road
2025	O22	Oceanside	College Boulevard - Vista Way to Old Grove Road	In Oceanside, widen from the existing 4 lanes to 6 lanes with bike lanes and raised median
2025	O23	Oceanside	College Boulevard Bridge - San Luis Rey River	In Oceanside, widen from 4 to 6 lanes plus bike lanes and a striped-only median; widening includes the approach roadway and the bridge deck over the San Luis Rey River - Design Phase
2025	SD189	San Diego	Sea World Drive Widening and I- 5 Interchange Improvements	In San Diego, replace existing 4-lane bridge with an 8-lane bridge with new on/off ramps; widen approachways to add right turn lanes to improve access to I-5 (CIP 52-706.0)

Table B.8  
 Phased Arterial Projects - 2050 Regional Transportation Plan Revenue Constrained Plan and  
 2012 Regional Transportation Improvement Program Amendment No. 2 (Cont.)

Conformity Analysis Year	SANDAG ID	Lead Agency	Project Title	Project Description
2025	SD190	San Diego	Palm Avenue/ I-805 Interchange	<p>In San Diego, future widening of Palm Avenue Bridge including providing for repairs to the bridge approaches and abutments, installing sidewalks, signals, and striping</p> <ul style="list-style-type: none"> <li>▪ Phase I was work pertaining to re-striping to reconfigure travel lanes; no actual modifications to the physical geometry of the bridge took place</li> <li>▪ Phase II of the project will widen the bridge on the north side; in addition to this the scope of work will also contain restriping of the lanes and modifications to the on/off ramps</li> <li>▪ Phase III of the project will widen the bridge on the south side; in addition to this the scope of work will also contain restriping of the lanes and modifications to the on/off ramps</li> <li>▪ Both Phase II and III will have environmental documentation prepared and all technical studies performed before entering into full design signage modifications: also modify freeway on and off ramps (CIP 52-640.0)</li> </ul>
2025	SD81	San Diego	Genesee Avenue - Nobel Drive to SR 52	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)
2035	SM10	San Marcos	SR 78/Smilax	Construct new interchange at Smilax Road interchange and SR 78 improvements





**Appendix C**  
**GLOSSARY OF TERMS AND ACRONYMS**



## Appendix C

### GLOSSARY OF TERMS AND ACRONYMS

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#### A

AC	Advanced Construction
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
APCB	San Diego Air Pollution Control Board
APCD	San Diego Air Pollution Control District
ARB	California Air Resources Board
ARRA	American Recovery and Reinvestment Act
ATCDF	Average Train Crossing Delay Factor

#### B

BIA	Bureau of Indian Affairs
BIP	Border Infrastructure Program
BPWG	Bicycle-Pedestrian Working Group
BRT	Bus Rapid Transit
BTA	Bicycle Transportation Account

#### C

CAA	Clean Air Act
CAAA	1990 Clean Air Act Amendments
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBI	Corridors and Borders Infrastructure
CHP	California Highway Patrol
CI	Capacity Increasing
CIP	Capital Improvement Program
CMAQ	Congestion Mitigation and Air Quality Program
CMIA	Corridor Mobility Improvement Account
CO	Carbon Monoxide
CON	Construction Phase
CPI	Consumer Price Index
CTAC	Cities/County Transportation Advisory Committee
CTC	California Transportation Commission
CTC	Centralized Train Control
CWG	Conformity Working Group

**D**

DAR	Direct Access Ramp
DEFM	Demographic and Economic Forecasting Model
DEMO	Demonstration
DOT	U.S. Department of Transportation

**E**

EAP	Early Action Program
EMFAC	EMissions FACtors Model
EPA	U.S. Environmental Protection Agency
EPSP	Expedited Project Selection Process

**F**

FE	Fund Estimate
FHWA	Federal Highway Administration
FR	Federal Register
FRA	Federal Railroad Administration
FSP	Freeway Service Patrol or FSP Act
FSTIP	Federal State Transportation Improvement Program
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
FWG	Freight Working Group
FY	Fiscal Year

**G**

GARVEE	Grant Anticipation Revenue Vehicle
GIS	Geographic Information System

**H**

HBP	Highway Bridge Program
HCD	Housing and Community Development
HES	Hazard Elimination Safety
HIRE	Hiring Incentives to Restore Employment
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
HPP	High Priority Program
HRCSA	Highway-Railroad Crossing Safety
HRRR	High Risk Rural Roads
HSIP	Highway Safety Improvement Program
HUD	Housing and Urban Development

**I**

IIP	Interregional Improvement Program
IM	Interstate Maintenance
IRR	Indian Reservation Road
ITOC	Independent Taxpayer Oversight Committee
ITS	Intelligent Transportation System

**J**

JARC	Jobs Access Reverse Commute
JTOC	Joint Transportation Operations Center

**L**

LOS	Level of Service
LOSSAN	Los Angeles to San Diego (Rail Corridor Agency)

**M**

MPO	Metropolitan Planning Organization
MTS	Metropolitan Transit System

**N**

NAAQS	National Ambient Air Quality Standards
NCI	Non Capacity Increasing
NCTD	North County Transit District
NEPA	National Environmental Protection Act
NHS	National Highway System
NOx	Nitrogen Oxide

**P**

P/PE	Preliminary Engineering Phase
PADT	Person Average Daily Traffic
PM	Particulate Matter
POF	Plan of Finance
POP	Program of Projects
PPEI	Peak-Period Exposure Index
PPNO	Project Number (Caltrans)
PPP	Public Participation Plan
PTA	Public Transportation Account
PTMISEA	Public Transportation Modernization, Improvement, and Service Enhancement Account

**R**

RAQS	Regional Air Quality Strategy
RAS	Regional Arterial System
RCP	Regional Comprehensive Plan
RHNA	Regional Housing Needs Assessment
RHWG	Regional Housing Working Group
RIP	Regional Improvement Program
ROG	Reactive Organic Gas
ROW	Right-of-Way
RSTP	Regional Surface Transportation Program
RTC	Regional Transportation Commission
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan or Recreational Trails Program
RTPA	Regional Transportation Planning Agency

**S**

SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users
SANDAG	San Diego Association of Governments
SANTEC	San Diego Regional Traffic Engineers' Council
SB	Senate Bill
SCAT	Subcommittee for Accessible Transportation
SD&AE	San Diego and Arizona Eastern Railway
SHA	State Highway Account
SHOPP	State Highway Operation and Protection Program
SIP	State Implementation Plan (for air quality)
SLPP	State-Local Partnership Program
SOV	Single Occupant Vehicle
SR	State Route (as in SR 52 - State Route 52)
SRTS	Safe Routes to School Program
SS	Senior Services
STA	State Transit Assistance
STIP	State Transportation Improvement Program
STIP-IIP	State Transportation Improvement Program – Interregional Improvement Program
STIP-RIP	State Transportation Improvement Program – Regional Improvement Program (SANDAG)
STP	Surface Transportation Program
SWG	Stakeholders Working Group (Regional Planning)

**T**

T-1	Transportation T-tactic: Ridesharing
T-2	Transportation T-tactic: Transit
T-3	Transportation T-tactic: Bicycle
T-5	Transportation T-tactic: Traffic Improvement
TAP	Transit Access Point
TCI	Transit Capital Improvement
TCIF	Trade Corridor Improvement Fund
TCM	Transportation Control Measure
TCRP	Traffic Congestion Relief Program
TCSP	Transportation, Community, and Systems Preservation
TDA	Transportation Development Act
TDM	Transportation Demand Management
TE	Transportation Enhancement
TEA-21	Transportation Equity Act for the 21 <sup>st</sup> Century
TIF	Transportation Investment Fund
TIGER	Transportation Investment Generating Economic Recovery
TIGGER	Transit Investment for Greenhouse Gas Emission Reduction
TIP	Transportation Improvement Program
TPEC	Transportation Project Evaluation Criteria
TransCAD	Transportation Planning Computer Package
<i>TransNet</i>	San Diego Region ½ cent Local Transportation Sales Tax Program
TSM	Traffic Systems Management
TWG	Technical Working Group

**U**

UCSD	University of California – San Diego
UTC	University Town Center

**V**

VMT	Vehicle Miles of Travel
VOC	Volatile Organic Compounds