2016 Draft
California Metropolitan Planning Organization Regional Transportation Plan Guidelines

California Transportation Commission

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Draft 2016
Metropolitan Planning Organization
Regional Transportation Plan
Guidelines

Adopted by the California Transportation Commission
On XXXX XX, XXXX

Pursuant to California Government Code Section 14522

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Dear Reader,

As you read the 2016 Draft Regional Transportation Plan (RTP) Guidelines, please be aware of the following:

- Black text indicates existing language from the 2010 RTP Guidelines;
- Red text reflects new/proposed language for the 2016 RTP Guidelines;
- Strike-out, red text means these areas are anticipated for removal, moved to other locations, and/or replaced with new information; and,
- Additional reader notes are located throughout the draft document as place-holders for future discussions and determination of final text. The reader is encouraged to suggest language as appropriate.
- For further information, please go to the Caltrans website at: http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/index.html.

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Introduction

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1.1 Why Conduct Long-Range Transportation Planning?

The Metropolitan Planning Organization (MPO) Regional Transportation Plan (RTP) Guidelines focus on the MPOs' perspective when developing, completing, adopting and implementing their RTPs. State and federal requirements, "shoulds", "shalls", and "Best Practices" are provided for the eighteen MPOs throughout California to better assist them as they update their RTPs every four years (with an option of every five years in attainment regions).

These eighteen MPOs, in alphabetical order, are:

Association of Monterey Bay Governments, Butte County Association of Governments, Fresno Council of Governments, Kings County Association of Governments, Kern Council of Governments, Merced County Association of Governments, Madera County Transportation Commission, Metropolitan Transportation Commission, Sacramento Area Council of Governments, San Diego Association of Governments, San Joaquin Council of Governments, San Luis Obispo Council of Governments, Santa Barbara County Association of Governments, Shasta Regional Transportation Agency, Southern California Association of Governments, Stanislaus Council of Governments, Tulare County Association of Governments, and Tahoe Metropolitan Planning Organization.

~~Transportation planning and land use planning became more closely linked in California following the passage of Senate Bill 375 (SB 375, Chapter 728, Statutes of 2008) in September 2008. As a result of this legislation, the reduction of greenhouse gases (GHG) has become one of the key priorities in the transportation planning process in addition to improving transportation mobility, addressing federal air quality criteria pollutants and ensuring that the statewide regional transportation system addresses tribal, local, regional, and statewide mobility and economic needs.~~

The long range transportation planning process in metropolitan areas is uniquely suited to address a number of state and regional goals, from supporting economic growth to achieving environmental goals and promoting public health and quality of life. ~~Transportation helps shape an area's economic health and quality of life.~~ Not only does the transportation system provide for the mobility of people and goods, it also influences patterns of growth and economic activity through accessibility to land. Furthermore, the performance of this system affects such public policy concerns as air quality, greenhouse gas emissions, natural resources, environmental protection and conservation, social equity, smart growth, affordable housing, jobs/housing balance, economic development, safety, and security. Transportation planning recognizes the critical links between transportation and other societal goals. The planning process is more than merely listing highway and transit capital investments; it requires developing strategies for operating, managing, maintaining, and financing the area's transportation system in such a way as to advance the area's long-term goals.

Over the past ten years combating climate change has emerged as a key goal for the state of California. Starting with the passage of Assembly Bill (AB) 32, The California Global Warming Solutions Act of 2006, the state has set aggressive goals to reduce greenhouse gas (GHG) emissions responsible for climate change. As approximately half ~~nearly forty percent~~ of GHG emissions in California come from the transportation sector, (approximately forty percent from tailpipe emissions alone, and additional emissions from road construction and maintenance, petroleum refining for transportation fuel, and vehicle manufacture) the long-range

transportation planning process in metropolitan areas has evolved to address climate change goals. In 2008, transportation planning and land use planning became further linked following the passage of Senate Bill 375 (SB 375, Chapter 728, Statutes of 2008). SB 375 requires metropolitan regions to meet regional GHG emissions reduction targets through the planned transportation network, forecasted development patterns, and transportation measures and policies within the RTP. In 2013, the connection between land use planning, transportation infrastructure investment, and greenhouse gasses was strengthened further yet with the passage of SB 743 (Chapter 386, Statutes of 2013), required an update in CEQA transportation metric towards alignment with climate and planning goals. And more recently, in 2015, Governor Brown issued Executive Order B-30-15 establishing a California GHG reduction target of 40 percent below 1990 levels by 2050 which is being addressed through the development of the statewide long-range transportation plan, the California Transportation Plan (CTP) 2040. Modeling undertaken by the California Air Resources Board (ARB) shows that Vehicle Miles Traveled (VMT) will have to be kept to a 5.5 percent increase through 2030 in order to ~~not violate~~ satisfy the executive order.

In addition, the executive order recommends that the State shall take climate change into account in planning and investment decisions, and employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives. Planning and investment shall be guided by the following principles:

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

As a result of state legislation and executive orders, GHG emission reduction has become one of the key priorities in the statewide and regional transportation planning process in addition to improving transportation mobility, addressing federal air quality criteria pollutants and ensuring that the statewide regional transportation system addresses tribal, local, regional, and statewide mobility and economic needs.

The Regional Transportation Plan (RTP), also called a Metropolitan Transportation Plan (MTP) or Long-Range Transportation Plan is the mechanism used in California ~~by both~~ for Metropolitan Planning Organizations (MPOs) ~~and Regional Transportation Planning Agencies (RTPAs)~~ to conduct long-range (minimum of 20 years) integrated land use and transportation planning in their regions to achieve ~~.and identify transportation network investments and policies which will promote~~ regional and state goals. Because transportation infrastructure investments have substantial effects on travel patterns, smart investments play a key role in meeting climate targets.

Transportation infrastructure investment affect travel patterns, mode choice, and VMT. Numerous studies show that investments in roadway capacity increase tend to cause increases in VMT and GHGs, These studies are summarized in materials available on Caltrans' and ARB's websites:
National Center for Sustainable Transportation Research Brief:
http://www.dot.ca.gov/newtech/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf

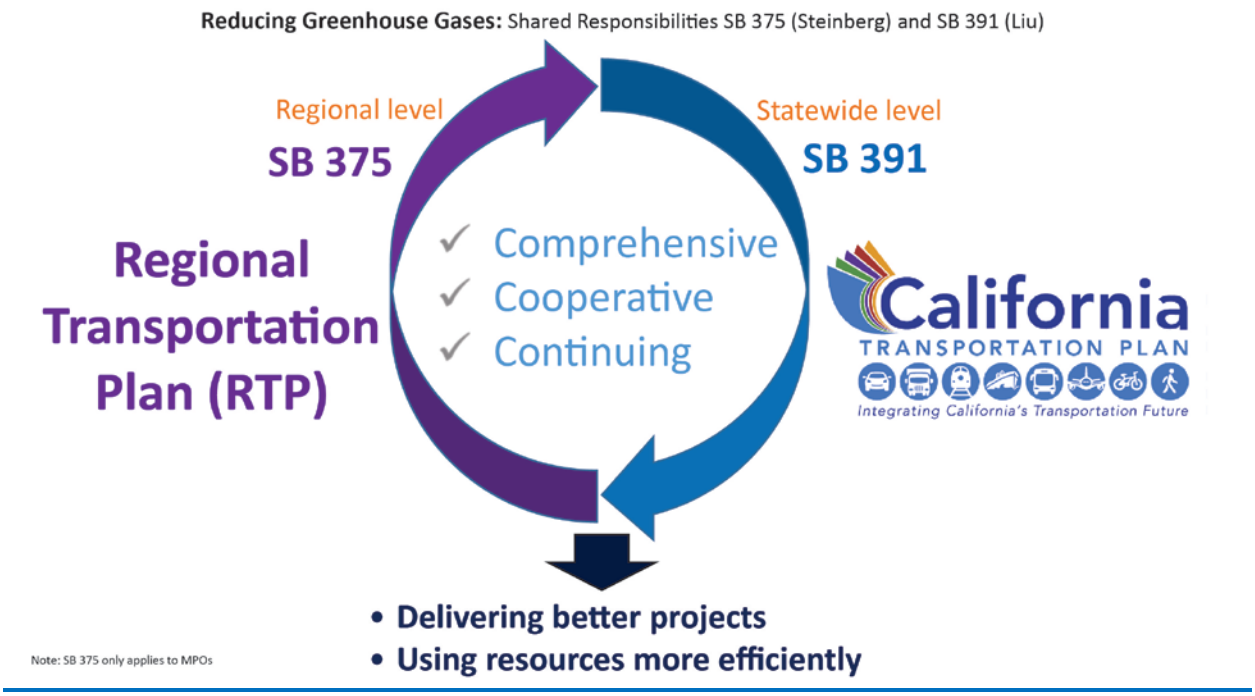
Air Resources Board Brief:
http://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf
Air Resources Board Technical Background Document:
http://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_bkgd.pdf

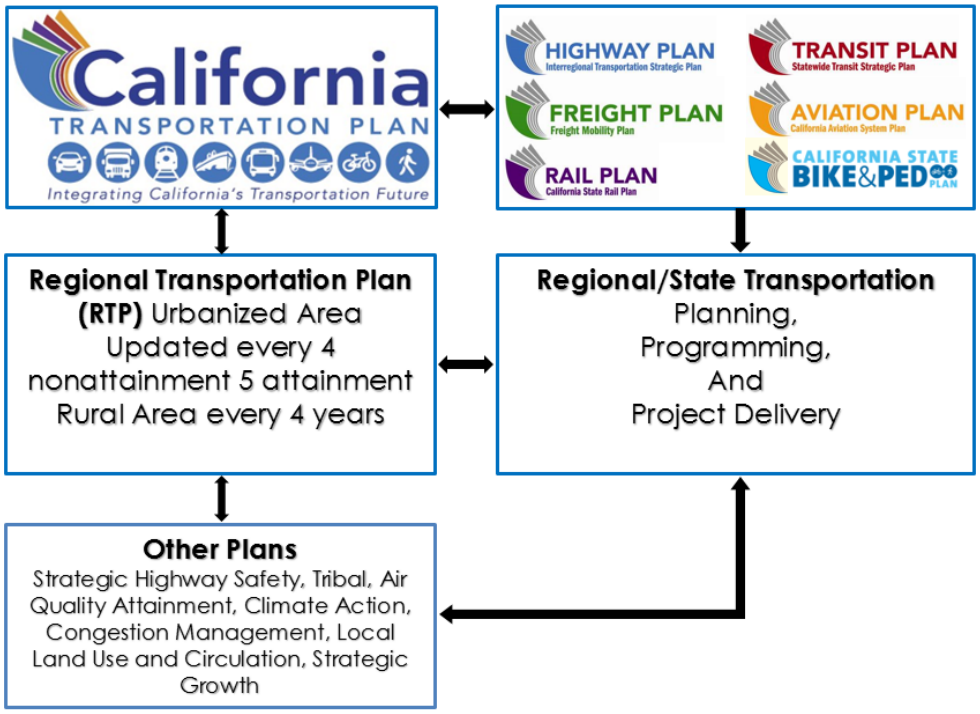
Accurate assessment of VMT resulting from transportation infrastructure investments is important for a variety of reasons, including assessing environmental impact, including VMT. In its recent *Mobile Source Strategy*, the ARB has assessed the statewide VMT growth possible without exceeding California's science-based 2030 and 2050 GHG emissions targets. Infrastructure investments in the state should not exceed those GHG levels.

1.2 Regional Transportation Plans and the California Transportation Plan

Similar to the SB 375 requirements for Regional Transportation Plans (RTPs), SB 391 adds new requirements to the State's long-range transportation plan to meet California's climate change goals under AB 32. The bill requires the California Transportation Plan (CTP) to address how the state will achieve maximum feasible emissions reductions in order to attain a statewide reduction of greenhouse gas emissions to 1990 levels by 2020 and 80% below 1990 levels by 2050. The bill also requires the CTP to identify the statewide integrated multimodal transportation system needed to achieve these results and specifies that the plan take into consideration the use of alternative fuels, new vehicle technology, tail pipe emission reductions, and the expansion of public transit, commuter rail, intercity rail, bicycling, and walking. In addition, SB 391 requires Caltrans to update the CTP by December 31, 2015, and every 5 years thereafter.

The CTP is a core document that helps tie together several internal and external plans and programs to help define and plan transportation in California. The CTP is an unconstrained document that integrates and builds upon six Caltrans modal plans (Interregional Plan, Freight Plan, Aviation Plan, Transit Plan, and Bicycle and Pedestrian Plan) as well as the RTPs prepared by the MPOs and the RTPAs. RTPAs and MPOs address transportation from a regional perspective, while the CTP, building on regional plans, addresses the connectivity and/or travel between regions and applies a statewide perspective for transportation system. Therefore, it is important that there is consistency between RTP and CTP as well as their respective guidelines, providing greater mobility choices for travelers not only within regions but across regions. The CTP and the RTP can be developed in a cyclical pattern aligning one with another using comprehensive, cooperative and continuing planning. This should result in delivering better projects and using resources more efficiently. The following diagrams illustrate the relationship between the CTP and RTP.


Reducing Greenhouse Gases: Shared Responsibilities SB 375 (Steinberg) and SB 391 (Liu)
Regional level
SB 375
Statewide level
SB 391
Regional Transportation Plan (RTP)
✓ Comprehensive
✓ Cooperative
✓ Continuing
California
TRANSPORTATION PLAN
Integrating California's Transportation Future
• Delivering better projects
• Using resources more efficiently
Note: SB 375 only applies to MPOs


California
TRANSPORTATION PLAN
Integrating California's Transportation Future
HIGHWAY PLAN
Interregional Transportation Strategic Plan
TRANSIT PLAN
Statewide Transit Strategic Plan
FREIGHT PLAN
Freight Mobility Plan
AVIATION PLAN
California Aviation System Plan
RAIL PLAN
California State Rail Plan
CALIFORNIA STATE BIKE&PED PLAN
Regional Transportation Plan (RTP) Urbanized Area Updated every 4 nonattainment 5 attainment Rural Area every 4 years
Regional/State Transportation Planning, Programming, And Project Delivery
Other Plans
Strategic Highway Safety, Tribal, Air Quality Attainment, Climate Action, Congestion Management, Local Land Use and Circulation, Strategic Growth

1.~~2~~ 3 Background and Purpose of the RTP Guidelines

The purposes of these Guidelines are to:

1. Promote an integrated, statewide, multimodal, regional transportation planning process and effective transportation investments;

2. Set forth a uniform transportation planning framework throughout California by identifying federal and state requirements and statutes impacting the development of RTPs;

3. Promote a continuous, comprehensive, and cooperative transportation planning process that facilitates the rapid and efficient development and implementation of projects that maintain California's commitment to public health and environmental quality; and,

4. Promote a planning process that considers the views of all stakeholders.

The purpose of RTPs is to encourage and promote the safe and efficient management, operation and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people. The RTP Guidelines are intended to provide guidance so that MPOs ~~and RTPAs~~ will develop their RTPs to be consistent with federal and state transportation planning requirements. This is important because state statutes require that RTPs serve as the foundation of the Federal Transportation Improvement Program (FTIP). The FTIPs are prepared by MPOs and identify the next four years of transportation projects to be funded for construction. The California Transportation Commission (CTC) cannot program projects that are not identified in the RTP.

Since the mid-1970s, with the passage of AB 69, (Chapter 1253, Statutes of 1972) California state law has required the preparation of RTPs to address transportation issues and assist local and state decision-makers in shaping California's transportation infrastructure. SB 375 requires that the RTP Guidelines are to be developed pursuant to California Government Code Sections 14522 and 65080 which state:

"14522. In cooperation with the regional transportation planning agencies, the commission may prescribe study areas for analysis and evaluation by such agencies and guidelines for the preparation of the regional transportation plans."

"14522.1. (a) (1) The commission, in consultation with the department and the State Air Resources Board, shall maintain guidelines for travel demand models used in the development of regional transportation plans by federally designated metropolitan planning organizations.
(2) Any revision of the guidelines shall include the formation of an advisory committee that shall include representatives of the metropolitan planning organizations, the department, organizations knowledgeable in the creation and use of travel demand models, local governments, and organizations concerned with the impacts of transportation investments on communities and the environment. Before amending the guidelines, the commission shall hold two workshops on the guidelines, one in northern California and one in southern California. The workshops shall be incorporated into regular commission meetings.
(b) The guidelines shall, at a minimum and to the extent practicable, taking into account such factors as the size and available resources of the metropolitan planning organization, account for all of the following:

(1) The relationship between land use density and household vehicle ownership and vehicle miles traveled in a way that is consistent with statistical research.
(2) The impact of enhanced transit service levels on household vehicle ownership and vehicle miles traveled.
(3) Changes in travel and land development likely to result from highway or passenger rail expansion.
(4) Mode splitting that allocates trips among automobile, transit, carpool, and bicycle and pedestrian trips. If a travel demand model is unable to forecast bicycle and pedestrian trips, another means may be used to estimate those trips.
(5) Speed and frequency, days, and hours of operation of transit service."

"65080 (d) Except as otherwise provided in this subdivision, each transportation planning agency shall adopt and submit, every four years, an updated regional transportation plan to the California Transportation Commission and the Department of Transportation. A transportation planning agency located in a federally designated air quality attainment area or that does not contain an urbanized area may at its option adopt and submit a regional transportation plan every five years. When applicable, the plan shall be consistent with federal planning and programming requirements and shall conform to the regional transportation plan guidelines adopted by the California Transportation Commission. Prior to adoption of the regional transportation plan, a public hearing shall be held after the giving of notice of the hearing by publication in the affected county or counties pursuant to Section 6061."

The California RTP Guidelines were first adopted by the CTC in 1978 and subsequently revised in 1982, 1987, 1991, 1992, 1994, 1999, 2007, and 2010.

The 1999 revision of the Guidelines was prepared to achieve conformance with state and federal transportation planning legislation and was based on the Federal Transportation Equity Act for the 21st Century (TEA-21) and California Senate Bill 45 (SB 45, Chapter 622 Statutes 1997). A 2003 Supplement was also prepared that was based on a 2003 RTP Evaluation Report completed for the CTC. The latest Federal surface transportation reauthorization bill called the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law in 2005. The 2007 revision of the RTP Guidelines was prepared in order to address changes in the planning process resulting from SAFETEA-LU.

Subsequent to the passage of California Assembly Bill (AB) 32 (California Global Warming Solutions Act of 2006), an addendum to the 2007 RTP Guidelines was adopted by the CTC in May 2008 to address a request from the California Legislature to ensure climate change issues were incorporated in the RTP process. That addendum was adopted by the CTC prior to the September 2008 passage of SB 375.

The 2010 update was prepared to incorporate new planning requirements as a result of SB 375 and to incorporate the addendum to the 2007 RTP Guidelines. SB 375 requires the 18 MPOs in the state to identify a forecasted development pattern and transportation network that will meet greenhouse gas emission reduction targets specified by the California Air Resources Board (ARB) through their RTP planning processes. ~~These requirements do not pertain to the 26 rural RTPAs that also prepare RTPs.~~

Since the 2010 update, two federal surface transportation reauthorization bills have been signed into law. First, the two-year bill with numerous extensions, Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed on July 6, 2012. Most recently, a longer term

five-year funding bill, Fixing America's Surface Transportation Act (FAST), was signed on December 4, 2015.

The 2016 update was prepared to incorporate Recommendations that were included in the December 2015 MPO RTP Review Report. This Report can be found at: **http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/index.html**. One of these Recommendations called for an MPO focused RTP Guidelines document addressing just the requirements for MPOs when developing, completing, adopting and implementing an RTP. In addition, the 2016 update reflects the data and analysis needs of the ARB to evaluate the Sustainable Communities Strategy (SCS) component of an MPO's RTP.

While the guidelines include both state and federal requirements, MPOs ~~and RTPAs~~ have the flexibility to be creative in selecting transportation planning options that best fit their regional needs. The guidelines recognize that "one size does not fit all." Solutions and techniques used by a larger ~~, urban~~ MPO will be different than those used by a smaller MPO. ~~, rural RTPA.~~ Recommendations and suggestions for providing documentation that is needed to meet the project eligibility requirements of the Federal Transportation Improvement Program (FTIP) and the State Transportation Improvement Program (STIP) are also included.

The ~~2010~~ 2016 RTP Guidelines continue to use the words "Shall" and "Should", a convention established by the previous RTP Guidelines. Where the RTP Guidelines reflect a state or federal statutory or regulatory requirement, the word "Shall" is used with a statutory or regulatory citation. The word "Should" is used where the Guidelines reflect a permissive or optional statutory reference such as may or should. Each section ends with federal and state requirements (Shalls), federal and state recommendations (Shoulds), and "Best Practices" discussions where appropriate. Changes to federal statute are implemented by the Code of Federal Regulations (CFRs) that are also known as the "final rules". ~~SAFETEA-LU Section 6001, transportation planning is codified in the final rule that was issued for Title 23 CFR Part 450 on February 14, 2007~~ The FHWA is still in the process of finalizing the rules for implementation of MAP-21/FAST. Unless otherwise noted, the RTP Guidelines will show the CFRs for SAFETEA-LU and MAP-21/FAST. The majority of citations in these guidelines refer to the implementing regulations, i.e., the CFR section.

As RTPA RTPs are updated every five years (not including RHNA cycle adjustments), and MPO RTPs are updated every four years (or five years in attainment regions), there is a continuous cycle of RTPs in the development and adoption stages. If an RTP is currently in one of these stages while the 2016 RTP Guidelines are being updated, use of the existing 2010 RTP Guidelines is acceptable until the 2016 RTP Guidelines are adopted by the CTC as anticipated in December 2016. An RTP that begins the update process after the 2016 RTP Guidelines are adopted by the CTC must use the new RTP Guidelines.

Because there are a variety of names used for the programming document that is prepared by an MPO, the RTP Guidelines refer to the programming document that accompanies an RTP as the FTIP. The FTIP is defined as a constrained four-year prioritized list of regionally significant transportation projects that are proposed for *federal, state and local* funding. The FTIP is developed and adopted by the MPO and is updated every two years. It is consistent with the RTP and it is required as a prerequisite for federal funding. In this document the words FTIP and Regional Transportation Improvement Program (RTIP) are used interchangeably. In a similar fashion, the federal terminology for congestion management program is also referred to in this document as a congestion management process or plan.

~~It should be noted that the CTC is requiring the non-MPO RTPAs to address the federal planning requirements during the development of their RTPs. The justification is that federal planning regulations address metropolitan planning organizations (MPOs) and statewide planning for non-MPO areas of the State.~~ The State of California addresses some of the federal statewide planning regulations through the California Transportation Plan (CTP). The CTP is a policy document prepared by the California Department of Transportation (Caltrans). It is not project specific, but it does look at how SCS implementation will influence the statewide multimodal transportation system, as well as how the state will achieve sufficient emission reductions in order to meet AB 32 and SB 391. ~~The state relies on the non-MPO RTPAs to address some of the federal statewide planning requirements.~~ While the CTP is prepared by Caltrans, it is developed in collaboration with various stakeholders, and includes public involvement.

1.~~3~~ 4 Metropolitan Planning Organizations ~~and Regional Transportation Planning Agencies~~ in California

In cooperation with the Governor, there are 18 federally designated Metropolitan Planning Organizations (MPOs) that ~~and 26 state statutorily created Regional Transportation Planning Agencies (RTPAs)~~ prepare Regional Transportation Plans in California. MPOs must adhere to federal planning regulations during the preparation of their RTPs. California statutes and the RTP Guidelines identify the RTP requirements for ~~both RTPAs and~~ MPOs. ~~The planning requirements specified in SB 375 pertain only to the state's 18 MPOs.~~

~~MPOs are federally designated while the majority of state designated RTPAs (specifically those responsible for preparing RTPs) are described under California Government Code Section 29532 et seq.~~ Federal legislation passed in the early 1970's required the formation of an MPO for any urbanized area with a population greater than 50,000. MPOs were created in order to ensure that existing and future expenditures for transportation projects and programs were based on a continuing, cooperative and comprehensive (3-C) planning process. One of the core functions of an MPO is to develop an RTP through the planning process.

An MPO has five core functions:

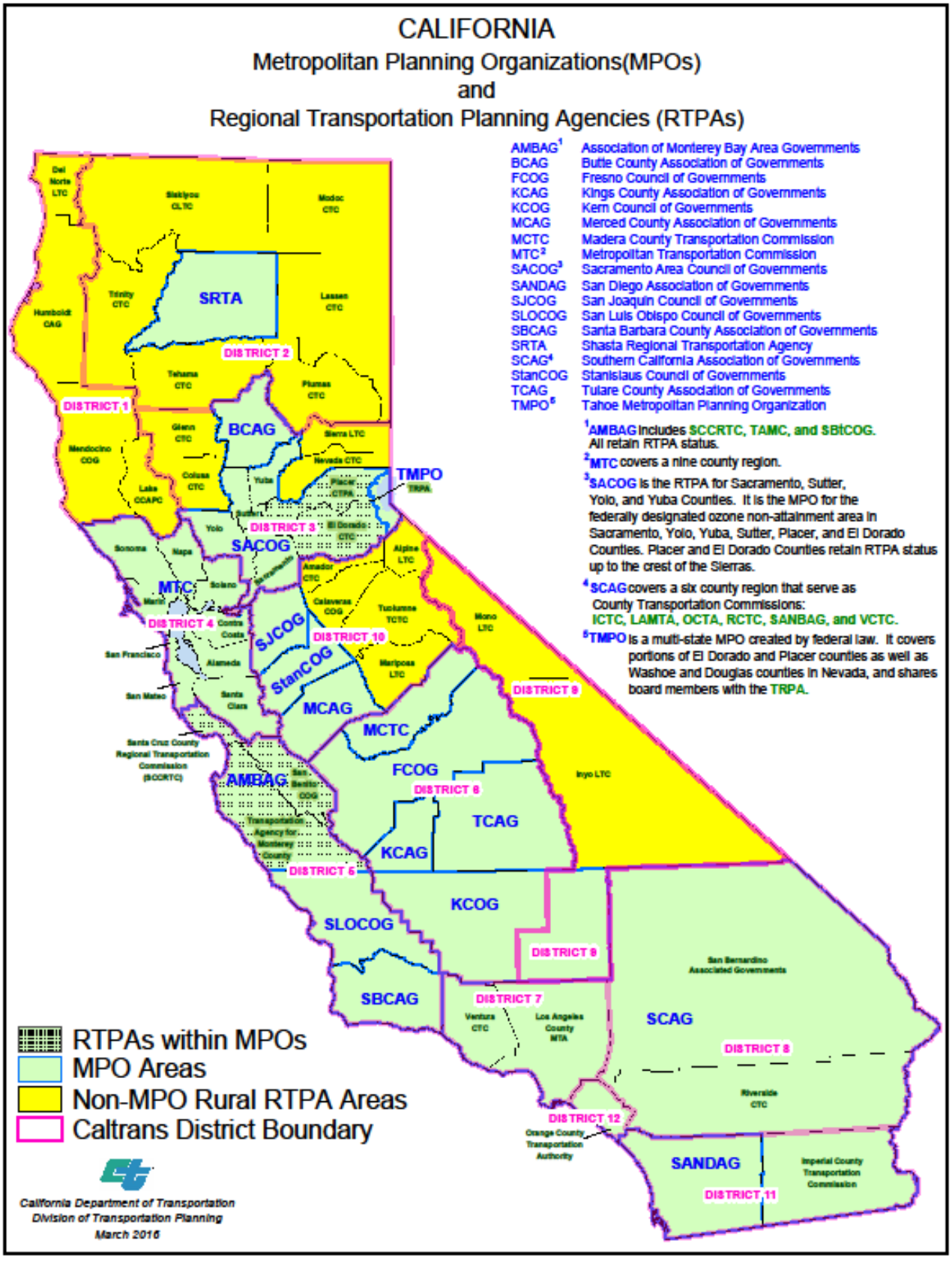
1. Maintain a setting for regional decision-making;
2. Prepare an Overall Work Program (OWP);
3. Involve the public in this decision-making;
4. Prepare an RTP; and,
5. Develop a Transportation Improvement Program (FTIP).

MPOs federally required responsibilities are identified in Title 23 U.S.C. Section 134 and Title 23 Code of Federal Regulations (CFR) Part 450.300. To carry out various transportation planning functions, MPOs receive annual federal metropolitan planning funds from the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). ~~Twenty-six designated RTPAs receive annual state planning funds called rural planning assistance (RPA) to carry out their respective planning requirements.~~

The California Government Code sets forth the requirements for an RTP to be an internally consistent document that contains a SCS in addition to the policy, action and financial elements. With the added requirement for an SCS in 2008, state law placed new emphasis on the RTP as an integrated planning document that promotes sustainable land use and increases mobility

options. This heightens the importance of the MPOs as regional leaders to bring together local governments in a collaborative discussion about alternate scenarios for the region's future.

The map below identifies the 18 MPOs (in darker shade) and the 26 RTPAs that prepare RTPs (in lighter shade or dot pattern).


CALIFORNIA
Metropolitan Planning Organizations(MPOs)
and
Regional Transportation Planning Agencies (RTPAs)
AMBAG[1] Association of Monterey Bay Area Governments
BCAG Butte County Association of Governments
FCOG Fresno Council of Governments
KCAG Kings County Association of Governments
KCOG Kern Council of Governments
MCAG Merced County Association of Governments
MCTC Madera County Transportation Commission
MTC[2] Metropolitan Transportation Commission
SACOG[3] Sacramento Area Council of Governments
SANDAG San Diego Association of Governments
SJCOG San Joaquin Council of Governments
SLOCOG San Luis Obispo Council of Governments
SBCAG Santa Barbara County Association of Governments
SRTA Shasta Regional Transportation Agency
SCAG[4] Southern California Association of Governments
StanCOG Stanislaus Council of Governments
TCAG Tulare County Association of Governments
TMPO[5] Tahoe Metropolitan Planning Organization
[1]AMBAG includes SCCRTC, TAMC, and SBtCOG. All retain RTPA status.
[2]MTC covers a nine county region.
[3]SACOG is the RTPA for Sacramento, Sutter, Yolo, and Yuba Counties. It is the MPO for the federally designated ozone non-attainment area in Sacramento, Yolo, Yuba, Sutter, Placer, and El Dorado Counties. Placer and El Dorado Counties retain RTPA status up to the crest of the Sierras.
[4]SCAG covers a six county region that serve as County Transportation Commissions: ICTC, LAMTA, OCTA, RCTC, SANBAG, and VCTC.
[5]TMPO is a multi-state MPO created by federal law. It covers portions of El Dorado and Placer counties as well as Washoe and Douglas counties in Nevada, and shares board members with the TRPA.
RTPAs within MPOs
MPO Areas
Non-MPO Rural RTPA Areas
Caltrans District Boundary
California Department of Transportation
Division of Transportation Planning
March 2016

1.4 5 Purpose of the Regional Transportation Plan

RTPs are planning documents developed by MPOs and RTPAs in cooperation with Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Caltrans and other stakeholders, including system users. Following the passage of SB 375, MPOs also need to work closely with the California Air Resources Board (ARB) and the California Department of Housing and Community Development (HCD) (Government Code Section 65080 et seq.). MPOs are required to prepare these long-range plans per federal statute (Title 23 U.S.C. Section 134). The purpose of the RTP is to establish regional goals, identify present and future needs, deficiencies and constraints, analyze potential solutions, estimate available funding, and propose investments.

California statute refers to these documents as "Regional Transportation Plans" or RTPs. In California planning circles, these long range planning documents normally use the term "RTP". However several California MPOs refer to RTPs using the term "Metropolitan Transportation Plan or MTP" which is used in federal planning regulations. "RTP" or "MTP" are terms used to describe the same document.

Pursuant to Title 23 CFR Part 450.3242 et seq. FHWA describes the development and contents of RTPs as follows:

> *"The transportation plan is the Statement of the ways the region plans to invest in the transportation system. The plan shall "include both long-range and short-range program strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods." The plan has several elements, for example: Identify policies, strategies, and projects for the future; Determine project demand for transportation services over 20 years; Focus at the systems level, including roadways, transit, non-motorized transportation, and intermodal connections; Articulate regional land use, development, housing, and employment goals and plans; Estimate costs and identify reasonably available financial sources for operation, maintenance, and capital investments); Determine ways to preserve existing roads and facilities and make efficient use of the existing system; be consistent with the Statewide transportation plan; and Be updated every five years or four years in air quality nonattainment and maintenance areas. MPOs should make special efforts to engage interested parties in the development of the plan. In cases where a metropolitan area is designated as a nonattainment or maintenance area, the plan must conform to the SIP for air quality."*

Transportation planning by MPOs/RTPAs is a collaborative process, led by the MPO/RTPA, state, tribal, and other key stakeholders in the regional transportation system. The process is designed to foster involvement by all interested parties, such as the business community, California Tribal Governments, community groups, environmental organizations, the general public, and local jurisdictions through a proactive public participation process conducted by the MPO/RTPA in coordination with the state and transit operators. It is essential to extend public participation to include people who have been traditionally underserved by the transportation system and services in the region. Neglecting public involvement early in the planning stage can result in delays during the project stage.

While specific federal ~~SAFETEA-LU~~ MAP-21/FAST requirements are addressed in Section 1.6 of these guidelines, the traditional steps undertaken during the regional planning process include:

1. Providing a long-term (20 year) visioning framework;
2. Monitoring existing conditions;
3. Forecasting future population and employment growth;
4. Assessing projected land uses in the region and identifying major growth corridors;
5. Identifying alternatives and needs and analyzing, through detailed planning studies, various transportation improvements;
6. Developing alternative capital and operating strategies for people and goods;
7. Estimating the impact of the transportation system on air quality within the region; and,
8. Developing a financial plan that covers operating costs, maintenance of the system, system preservation costs, and new capital investments.

The overall scope of the RTP ~~(~~prepared by MPOs~~)~~ has expanded as a result of SB 375 to require the inclusion of a Sustainable Communities Strategy (SCS):

1. Transportation projects, non-auto mobility strategies, and land use projections identified in the RTP must be modeled to determine their impacts on regional greenhouse gas (GHG) emissions. Current travel models are not always sensitive to the land use and transportation strategies in an SCS; therefore, MPOs have had to find alternative methods to quantify the GHG emissions reduction benefits of these strategies. Off-model methods are discussed further in Chapter 3.
2.
3. The RTP must contain an SCS that includes a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the GHG emissions from automobiles and light trucks to achieve, if feasible, the GHG emission reduction target approved for the region by the California Air Resources Board (ARB). The MPO will need to increase its coordination with cities and counties within the region to work towards strategies that will reduce regional GHG emissions.
4. The MPO must prepare an Alternative Planning Strategy (APS) if the SCS is unable to reduce GHG emissions to achieve the GHG emissions reduction targets established by the ARB. The APS shall be a separate document from the RTP, but it may be adopted concurrently with the RTP.

The RTPs are developed to provide a clear vision of the regional transportation and land use goals, objectives and strategies. This vision must be realistic and within fiscal constraints. In addition to providing a vision, the RTPs have many specific functions, including:

1. Providing an assessment of the current modes of transportation and the potential of new travel options within the region;
2. Projecting/estimating the future needs for travel and goods movement;
3. Identification and documentation of specific actions necessary to address regional mobility and accessibility needs;
4. Identification of guidance and documentation of public policy decisions by local, regional, state and federal officials regarding transportation expenditures and financing and future growth patterns;

5. Identification of needed transportation improvements, in sufficient detail, to serve as a foundation for the: (a) Development of the Federal Transportation Improvement Program (FTIP), and the State Transportation Improvement Program (STIP), (b) Facilitation of the National Environmental Protection Act (NEPA)/404 integration process and (c) Identification of project purpose and need;
6. Employing performance measures that demonstrate the effectiveness of the transportation improvement projects and land use policies in meeting the intended goals;
7. Promotion of consistency between the California Transportation Plan, the regional transportation plan and other plans developed by cities, counties, districts, California Tribal Governments, and state and federal agencies in responding to statewide and interregional transportation issues and needs;
8. Providing a forum for: (1) participation and cooperation and (2) facilitation of partnerships that reconcile transportation and land use issues which transcend regional boundaries; and,
9. Involving community-based organizations as part of the public, Federal, State and local agencies, California Tribal Governments, as well as local elected officials, early in the transportation planning process so as to include them in discussions and decisions on the social, economic, air quality and environmental issues related to transportation.

1.~~5~~ 6 California Transportation Planning and Programming Process

The State of California and federal transportation agencies allocate millions of dollars of planning funds annually to help support California's transportation planning process. The RTP establishes the basis for programming local, state, and federal funds for transportation projects within a region. State and federal planning and programming legislation has been initiated and is periodically revised to provide guidance in the use of these funds to plan, maintain and improve the transportation system.

The planning and programming process is the result of state and federal legislation to ensure that:

1. The process is as open and transparent as possible;

2. Environmental considerations are addressed; and,

3. Funds are allocated in an equitable manner to address transportation needs.

The chart in Appendix A attempts to provide a simple diagram of a complex process. Each entity in the chart reflects extensive staff support and legislative direction. The result is the planning and programming process that reflects the legislative and funding support of the California transportation system. Additional information regarding the programming process is available in Sections 2.4 and 6.15.

Anticipated Future Change to Transportation Analysis

A change to transportation analysis in environmental review under CEQA occurred with the Governor's approval of SB 743 (Chapter 386, Statutes of 2013). It requires an update in the metric of transportation impact used in CEQA from Level of Service and vehicle delay to one

that promotes the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. Per ARB Vision Model results, reductions in VMT growth are needed to achieve sufficient greenhouse gas emissions reduction for climate stabilization, as reflected in executive orders on 2030 and 2050 greenhouse gas targets. ~~when determining significant transportation impacts. This helps better support active transportation, greenhouse gas emission reduction, and smart growth.~~ The regulatory language (CEQA Guidelines changes) to implement the law are pending, though VMT has been identified by the Governor's Office as the preferred metric to determine significant impacts. A future update of the RTP Guidelines will capture any "shoulds" or "shalls" resulting from the formal rulemaking process. In the meantime, MPOs can anticipate guidance in the final "Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA" document when it is released.

1.~~6~~ 7 SAFETEA-LU Items Impacting the Development of RTPs (Update for MAP-21/FAST)

Public Participation Plan/Outreach – Each MPO shall provide ~~citizens~~ residents, affected public agencies, representatives of public transportation employees, freight shippers, private transportation providers, representatives of public transportation users, representatives of pedestrian walkways and bicycle transportation facilities users, representatives of the disabled, and other interested parties with a "reasonable opportunity" to comment on the RTP. The public participation plan must be developed prior to updating the RTP and FTIP and shall provide for input from interested stakeholders, including California Tribal Governments if applicable, during its preparation. (Title 23 CFR Part 450.316)

Changes to Federal Planning Factors – The planning factor to "protect and enhance the environment, promote energy conservation and improve quality of life" was expanded to also include "promote consistency between transportation improvements and State and local planned growth and economic development patterns." Equally important, safety and security were separated into individual planning factors to highlight the importance of each issue. (Title 23 CFR Part 450.306)

Contents of the Participation Plan Shall Include: Development of the RTP in consultation with all interested parties; provision that all interested parties have reasonable opportunities to comment on the contents of the RTP; all public meetings are held at convenient and accessible locations; employment of visualization techniques to describe the RTP (such as geographic information systems (GIS), maps, graphs, charts and other visual methods of interpreting data and information); and, making the information available to the public in electronic accessible format and means, such as the in order to afford a reasonable opportunity for all parties including the general public to comment on the RTP. A minimum public comment period of 45 days shall be provided before the initial or revised participation plan is adopted by the MPO. (Title 23 CFR Part 450.316)

RTP Cycle Updates – An RTP shall be updated every four years, or more frequently, if the MPO elects to do so. In attainment regions, MPOs may elect to update their RTPs every five years. (Title 23 CFR Part 450.322(c))

Identify Transportation Facilities – An RTP shall include an identification of transportation facilities, including major roadways, multimodal and intermodal facilities, and intermodal connectors. (Title 23 CFR Part 450.322(f)(2))

Identify Mitigation Activities – An RTP shall include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. (Title 23 CFR Part 450.322(f)(7))

Consultation and Coordination – The RTPs environmental mitigation discussions shall be developed in consultation with federal, state and tribal land management, wildlife, and regulatory agencies (Title 23 CFR Part 450.322(f)(7)). Additional consultation, as appropriate, with state and local agencies responsible for land use, natural resources, environmental protection, conservation and historic preservation during development of RTP is required. (Title 23 CFR Part 450.322(g))

Financial Plan – A Financial Plan shall demonstrate how an adopted RTP can be implemented, indicate resources that can reasonably be expected to be available to carry out the plan, and recommend any additional financing strategies for needed projects and programs. Total dollar amount for projects included in the FTIP must take into account a projected rate of inflation. The MPO, transit operators and state shall cooperatively develop estimates of funds that will be available to support plan implementation. (Title 23 CFR Part 450.322(f)(10))

Identify Operational and Management Strategies - Operational & Management Strategies shall be included in order to improve the performance of the existing transportation facilities, to relieve vehicular congestion and maximize the safety and mobility of people and goods. (Title 23 CFR Part 450.322(f)(3))

Identify Capital Investment Strategies – Capital investment strategies and other strategies shall be included to preserve the existing and projected future metropolitan transportation infrastructure, and provide for multimodal capacity increases based on regional priorities and needs. (Title 23 CFR Part 450.322(f)(5))

Congestion Management Process – The Congestion Management Process (CMP) should be an integral part of developing RTPs and FTIPs for MPOs that also serve as Transportation Management Areas (TMAs). (Title 23 CFR Part 450.320(c))

Visualization Techniques and RTP/MTP Publication – An RTP shall include visualization techniques such as GIS-based, graphs, maps, bar charts, pie charts and other visual aids that a public participant understands without great technical detail. The RTP shall be available on a website and for the life of the plan. (23 CFR Part 450.316(a))

Safety Issues – separated “safety” and “security” as planning factors. (Title 23 CFR Part 450.322)

Security Issues – RTPs should include a safety element that incorporates and summarizes the goals, priorities, and projects that are contained in the California Strategic Highway Safety Plan as well as emergency relief and disaster preparedness plans that support homeland security and the personal security of the public. (Title 23 CFR Part 450.322(h))

Public Transit/Human Services Transportation Plan – A public transit/human services transportation plan as required by 49 U.S.C. 5310, 5316 and 5317 should be consistent with the metropolitan transportation planning process. (Title 23 CFR Part 450.306(g))

1.~~7~~ 8 Key Additions to the ~~2010~~ 2016 RTP Guidelines (Update for MAP-21/FAST)

~~SB 375 Related~~

1. ~~Section 2.2 – Outline of climate change legislation, including SB 375 and the integration of regional Blueprint Planning efforts with the Sustainable Communities Strategy (SCS).~~
2. ~~Section 2.7 – Outlines the sequencing of RTP adoption, Regional Housing Needs Allocation (RHNA), federal air quality conformity determination and Sustainable Communities Strategy (SCS) and/or Alternative Planning Strategy (APS) review by ARB.~~
3. ~~Chapter 3 (Modeling) – The modeling chapter has been revised to provide guidance on addressing SB 375 in RTPs.~~
4. ~~Sections 4.3, 4.6 and 4.7 (Public Participation) – These sections were expanded to include new SB 375 consultation and public participation requirements as well as a discussion on Interagency Coordination (IAC) during SCS Development.~~
5. ~~Section 6.16 – Outlines the types of programmed transportation projects that are exempt from SB 375.~~
6. ~~Section 6.23 – Section added to discuss SB 375 required regional GHG reduction targets specified by the ARB.~~
7. ~~Sections 6.24 through 6.26 - Outline the state requirements and process for creating a Sustainable Communities Strategy.~~
8. ~~Appendix G – Contains the statutory language of SB 375 and SB 575.~~
9. ~~Appendix H – Contains information on the statutory requirements for preparing an APS.~~
10. ~~Appendix I – Provides information on best practices strategies to reduce regional GHG through land use and transportation demand system management strategies.~~
11. ~~Appendix J – Contains RHNA/Housing Element and RTP Statutory Development Process.~~

~~Other~~ Key Additions to the ~~2010~~ 2016 RTP Guidelines

1. ~~Section 2.6 - Includes information and recommendations regarding consideration of the planning processes associated with Corridor System Management Plans, Complete Streets, Context Sensitive Solutions, and the Smart Mobility Framework.~~
2. ~~Section 4.2 – Includes information, federal requirements, and best practices information for the Consideration of Social Equity and Environmental Justice in the RTP.~~
3. ~~Section 6.13 – Expanded to include a new state requirement to ensure that MPOs/RTPAs located along the coast address the California Coastal Trail in their RTPs.~~
4. ~~Section 6.29 – Provides guidance and recommendations for how non-MPO rural RTPAs can address GHG emissions in their RTPs without the statutory mandate of SB 375.~~
5. ~~Section 6.30 – Provides information and guidance regarding addressing climate change adaptation issues in the RTP.~~

1. Separating RTP Guidelines, one for the MPOs and one for the RTPAs to better address the specific requirements for their RTPs.

2. Appendix L, AB 441 (2012) Monning – For the first time in the RTP Guidelines, this Appendix highlights the Metropolitan Planning Organizations' various health-promoting policies incorporated within their RTPs.
3. Section 1.1 - Acknowledges the anticipated change in CEQA when SB 743 was chaptered moving away from Level of Service and vehicle delay when identifying and mitigating significant transportation impacts.
4. Section 2.3 – Provides an introduction to Appendix L, the health-promoting policies that are found throughout the MPOs' RTPs.
5. Section 2.6 – Includes additional System Planning documents that are used in partnership with MPOs in the transportation planning process.
6. Chapter 3 – Updates the Modeling Chapter from the 2010 version.
7. Chapter 4 – Includes new legislation highlighting the required Native American Tribal Government Consultation and Coordination process.
8. Chapter 6 – Introduces the California Freight Mobility Plan (CFMP) and the California Sustainable Freight Action Plan (CSFAP).
9. Chapter 6 – Provides preliminary information on MAP-21/FAST impacts on Asset Management and Performance Measures.

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Chapter 2

Regional Transportation Plan Process

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2.1 State Requirements

California statute relating to the development of the RTP is primarily contained in Government Code Section 65080. ~~State planning requirements apply to both federally designated MPOs and state designated RTPAs.~~

Just like ~~changes resulting from the~~ federal ~~SAFETEA-LU~~ legislation, Government Code Section 65080 also requires that MPOs located in nonattainment regions update their RTPs at least every four years. State statute requires MPOs located in air quality attainment regions ~~and all RTPAs that prepare RTPs~~ to update their RTPs every five years.

When applicable, RTPs shall be consistent with federal planning and programming requirements and shall conform to the RTP Guidelines adopted by the California Transportation Commission (CTC) pursuant to Government Code Section 65080(d). In addition, the CTC cannot program projects in the State Transportation Improvement Program (STIP) that are not identified in an RTP.

Section 65080 states RTPs shall address the following:

1. Policy Element
2. Sustainable Communities Strategy ~~(MPOs only)~~
3. Action Element
4. Financial Element

~~SB 375 added additional requirements to an MPO's RTP process; those requirements can be found in the RTP Guidelines sections identified in Section 1.7.~~

The following California Government Code Sections apply to the development of RTPs:

Government Code Section 65080.1 – Each MPO ~~or RTPA~~ whose jurisdiction includes a portion of the California Coastal Trail, or property designated for the trail shall coordinate with the State Coastal Conservancy, the California Coastal Commission and Caltrans regarding the development of the trail. The trail must be identified in the RTP.

Government Code Section 65080.3 - An MPO/~~RTPA~~ with a population exceeding 200,000 persons may prepare at least one "alternative planning scenario" during the development of the RTP. The purpose of the alternative planning scenario is to address attempts to reduce growth in traffic congestion, make more efficient use of existing transportation infrastructure, and reduce the need for costly future public infrastructure.

Government Code Section 65080.5 - Prior to adoption of the RTP, a public hearing shall be held after publishing notice of the hearing. After the RTP is adopted by the MPO~~/RTPA~~, the plan shall be submitted to the CTC and Caltrans. One copy should be sent to the CTC. Two copies should be submitted to the appropriate Caltrans district office. The Caltrans district office will send one copy to the headquarters Division of Transportation Planning.

Government Code Section 65081.1 - Regions that contain a primary air carrier airport (defined by the Federal Aviation Administration as an airport having at least 10,000 annual scheduled passenger boardings) shall work collaboratively to include an airport ground access improvement program within the RTP. This program shall address airport access improvement

projects, including major arterial and highway widening and extension projects, with special consideration given to mass transit.

Requirements (Shalls)
~~**Federal:** None~~
State: Government Code Sections 65080, 65080.1, 65081.1

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

2.2 Background on ~~Regional Blueprint Planning and~~ Climate Change Legislation

AB 32 – The California Global Warming Solutions Act of 2006

California established itself as a national leader in addressing climate change issues with the passage of Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006. As a result of AB 32, California statute specifies that by the year 2020, greenhouse gas emissions within the state must be at 1990 levels. The California Air Resources Board (ARB) is the primary state agency responsible for implementing the necessary regulatory and market mechanisms to achieve reductions in greenhouse gas emissions to comply with the requirements of AB 32.

AB 32 identifies greenhouse gases as specific air pollutants that are responsible for global warming and climate change. This is particularly relevant to the RTP Guidelines because, as of 2009, the transportation sector represents approximately half ~~37%~~of Carbon Dioxide (CO2) emissions in California (including tailpipe emissions, which comprise 37% of state emissions). California has focused on six GHGs (CO2, Methane, Nitrous Oxide, Hydro fluorocarbons, perfluorocarbons, and Sulfur Hexafluoride). CO2 is the most prevalent greenhouse gas. All other greenhouse gases are referenced in terms of a CO2 equivalent.

AB 32 directed the California Air Resources Board to develop actions to reduce greenhouse gases, including the preparation of a scoping plan to identify how best to reach the 2020 goal. According to the scoping plan, the framework for achieving greenhouse gas emissions reductions from land use and transportation planning includes implementation of SB 375.

SB 375 – The Sustainable Communities and Climate Protection Act of 2008

SB 375 was signed into law in September 2008. The bill addressed five primary areas:

1. Requires the ARB to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California.
2. Through their respective planning processes, each of the MPOs during the next update of their RTPs is required to prepare a sustainable communities strategy (SCS) that will specify how the GHG emissions reduction target set by ARB will be achieved for the region. If the target cannot be met through the SCS, then an alternative planning strategy (APS) shall be prepared.
3. Provides streamlining of California Environmental Quality Act (CEQA) requirements for specific residential and mixed-use developments that are consistent with an SCS or APS

that has been determined by ARB to achieve the regional GHG emissions reduction target.

4. Synchronizes the regional housing needs assessment (RHNA) process with the RTP process; requires local governments to update the housing element of their general plans and to rezone consistent with the updated housing element generally within three years of adoption; and provides that RHNA allocations must be consistent with the development pattern in the SCS. Housing element updates are moved from five year cycles to eight year cycles for member jurisdictions of all MPOs classified as non-attainment or maintenance and for jurisdictions within other MPOs and RTPAs that elect to adopt an RTP every four years pursuant to Government Code Section 65080 (b)(2)(M).
5. Requires the California Transportation Commission (CTC) to maintain guidelines for the use of travel demand models used in the development of regional transportation plans that, taking into consideration MPO resources, account for: 1.) the relationship between land use density, household vehicle ownership, and vehicle miles traveled (VMT), consistent with statistical research, 2.) the impact of enhanced transit service on household vehicle ownership and VMT, 3.) likely changes in travel and land development from highway or passenger rail expansion, 4.) mode splitting that allocates trips between automobile, transit, carpool, bicycle and pedestrian trips, and 5.) speed and frequency, days, and hours of operation of transit service.

~~**Regional Blueprint Planning Program**~~

~~The Regional Blueprint Planning Program provides assistance for MPOs and rural RTPAs to engage in public and Tribal outreach to select community preferred growth scenarios for the future. Through Regional Blueprints, MPOs and RTPAs attempt to balance transportation planning with land use planning, housing needs, resource protection and other planning issues in order to achieve more sustainable regional growth patterns and improve the quality of life for Californians. The program has been underway by many MPOs and RTPAs for several years with financial support from Caltrans.~~

~~The blueprint scenarios developed by the MPOs may greatly assist in completing a sustainable communities strategy and, if needed, an alternative planning strategy. In creating an SCS (and APS if applicable), MPOs may build upon work that has gone into creating regional blueprint plans~~.

Executive Orders on Climate Change Issues

Governor Schwarzenegger issued three Executive Orders to address climate change: S-3-05 (June 1, 2005) that calls for a coordinated approach to address the detrimental air quality effects of GHGs; S-20-06 (October 17, 2006) that requires State agencies to continue their cooperation to reduce GHG emissions and to have the Climate Action Team develop a plan to outline a number of actions to reduce GHG, and S-13-08 (November 14, 2008) that directs the Natural Resources Agency to develop the State's first Climate Adaptation Strategy (CAS) guide. Information on climate change and California climate change activities can be found at the following links:

Governor Brown's executive orders:
B-16-2012: https://www.gov.ca.gov/news.php?id=17472
Key language:
"IT IS FURTHER ORDERED that California target for 2050 a reduction of greenhouse gas emissions from the transportation sector equaling 80 percent less than 1990 levels."

B-30-15: https://www.gov.ca.gov/news.php?id=18938
Key language:
1.A new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 is established in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050.

2.All state agencies with jurisdiction over sources of greenhouse gas emissions shall implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

6.State agencies shall take climate change into account in their planning and investment decisions, and employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives.

http://www.climatechange.ca.gov/

http://www.arb.ca.gov/cc/facts/facts.htm

Requirements (Shalls)
~~**Federal:** None~~
State: Government Code Section 65080

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

2.3 Promoting Health

Health-promoting policies are found throughout Regional Transportation Plans (RTPs). RTPs often incorporate many or all of the following: safe routes to school programs; complete streets strategies; equity considerations; transportation safety; and policies to promote transit, bicycling and walking. These kinds of transportation-related policies and programs, and others as well, foster more accessible, more livable, and healthier communities. Explicitly identifying their public health benefits can reinforce the role of RTPs in building stronger communities and regions. In addition, local health departments and other public health stakeholders can be valuable partners in RTP development, to increase understanding of the relationship between transportation and health. Their participation can help to maximize the RTP's public health and equity benefits and ensure that the RTP is responsive to community needs.

Appendix L provides a summary of policies, practices, and projects that have been employed by MPOs in their RTPs to promote health and health equity. This is in fulfillment of requirements set forth by Assembly Bill (AB) 441 (Chapter 365, Statutes of 2012), Gov. Code 14522.3. Appendix L focuses on examples from existing RTPs, in keeping with the legislative intent of AB 441 as expressed in Section 1(a)(d) of the bill: "The Legislature intends that projects, programs,

and practices that promote health and health equity in regional transportation plans that are employed by metropolitan planning organizations be shared in the voluntary state guidance on regional transportation planning."

The role of transportation in public health is increasingly recognized by health advocates and transportation providers alike. Regional, state, and local transportation agencies have long focused on improving both air quality and safety, which are very important to public health. More recently the understanding of the relationship of transportation and health has been expanding to include a much broader range of community needs. One fundamental example is the way in which transportation can encourage physical activity, such as walking and biking, often referred to as active transportation. There is a demonstrated relationship between increased physical activity and a wide range of health benefits. Transportation decisions can prioritize active transportation investments, and that in turn increase walk and bike mode shares and help a community to lower its rates of obesity, hypertension, and other chronic diseases. As some health advocates have said, we want to make the healthy choice the easy choice. Transportation is also being seen not as an end in itself, but as a means of providing access to important destinations: access to jobs, education, healthy food, recreation, worship, community activities, healthcare, and more. As access to key destinations improves, a community becomes healthier overall. Improved access to key destinations is especially critical for disadvantaged and underserved communities. The design of the transportation system, in combination with land use and housing decisions, also plays a role in public health. Coordinated planning of transportation and land use can promote public health through the development of livable, walkable, accessible communities. And as nations, states and regions shift away from fossil fuel dependent transportation modes, the benefits of reducing the effects of climate change will also help to reduce the public health risks from climate change effects such as extreme heat, storms, and drought. Transportation and public health providers can help one another to address all of these factors, learning from each other and joining their skills to improve transportation for better health outcomes for everyone.

Best Practices: See Appendix L

2.~~3~~ 4 Federal Requirements (Update with MAP-21/FAST)

Federal requirements for the development of RTPs are directed at the federally designated MPOs. The primary federal requirements regarding RTPs are addressed in the metropolitan transportation planning rules – Title 23 CFR Part 450 and Title 49 CFR Part 613. These federal regulations incorporating both ~~SAFETEA-LU and TEA-21~~ MAP-21/FAST changes were updated by FHWA and FTA and published in the ~~February 14, 2007~~ May 27, 2016 Federal Register.

The final guidance is commonly referred to as the Final Rule.

In the Final Rule, the metropolitan transportation planning process provides for consideration of the following federal planning factors:

1. Economic vitality and global competitiveness, productivity, and efficiency;
2. Safety of the transportation system;
3. Security of the transportation system;

4. Accessibility and mobility of people and freight;
5. Protection of the environment, energy conservation, quality of life, and consistency between (regional) transportation improvements and local as well as state planned growth;
6. Integration and connectivity of the transportation system across modes for both people and freight;
7. Efficient transportation management and operations; and,
8. Preservation of the transportation system.

Federal Clean Air Act conformity requirements pursuant to the Amendments of 1990, apply in all MPO~~/RTPA~~ nonattainment areas. Section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7506(c), and the related requirements of 23 U.S.C. 109(j), "transportation conformity" requirement ensures that federal funding and approval are given to transportation plans, programs and projects that are consistent with the air quality goals established by a State Implementation Plan (SIP). For MPO nonattainment regions, the MPO, FHWA, and FTA are responsible for making the RTP conformity determination. Under the U.S. DOT Metropolitan Planning Regulations (Title 23 CFR Part 450) and EPA's Transportation Conformity Rule (Title 40 CFR Part 93) requirements, the RTP needs to meet four requirements: 1.) Regional emissions analysis, 2.) Timely implementation of Transportation Control Measures, 3.) Financial constraints analysis, and 4.) Interagency consultation and public involvement. The transportation conformity rule (Title 40 CFR Part 93 Subpart A) sets forth the policy, criteria, and procedures for demonstrating and assuring conformity of transportation activities.

Title VI of the Civil Rights Act of 1964 ensures that all people have equal access to the transportation planning process. It is important that MPOs~~/RTPAs~~ comply with this federal civil rights requirement during the RTP development process. Title VI states that: all people regardless of their race, sexual orientation or income level, will be included in the decision-making process. Additional information regarding equal access to the transportation planning process is available in Sections 4.2 and 4.3.

Requirements (Shalls)
Federal: Title 23 CFR Part 450 and Title 40 CFR Part 93 and Title VI of the Civil Rights Act of 1964
~~**State:** None~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

2.~~4~~ 5 Relationship Between the RTP, OWP, FTIP and STIP (RTIP & ITIP)

The key planning documents produced by the MPOs, RTPAs, County Transportation Commissions (CTCs) and Caltrans are:

1. Regional Transportation Plan – Looks out over a 20 plus-year period providing a vision for future demand and transportation investment within the region.

2. Overall Work Program – The OWP lists the transportation planning studies and tasks to be performed by the MPO, RTPA or member agency during that fiscal year. The OWP is also referred to as a Unified Planning Work Program (UPWP) in federal regulations.

Federal Program - MPOs Only:

3. Federal Transportation Improvement Program – The FTIP is a financially constrained four-year program listing all federally funded and regionally significant projects in the region.

State Program – RTPAs, County Transportation Commissions (CTCs) and Caltrans:

4. State Transportation Improvement Program – The STIP is a biennial program adopted by the California Transportation Commission. Each STIP covers a five year period and includes projects proposed by regional agencies in their regional transportation improvement programs (RTIPs) and by Caltrans in its interregional transportation improvement program (ITIP).
    a. Regional Transportation Improvement Program – The RTIP is a five year program of projects prepared by the RTPAs and County Transportation Commissions. Each RTIP should be based on the regional transportation plan and a region wide assessment of transportation needs and deficiencies.
    b. Interregional Transportation Improvement Program – The ITIP is a five year list of projects that is prepared by Caltrans, in consultation with MPOs and RTPAs. Projects included in the interregional program shall be consistent with the Interregional Transportation Strategic Plan and relevant adopted regional transportation plan(s).

Key Planning Documents Produced by MPOs/RTPAs & County Transportation Commissions (CTCs)/Caltrans

	Time/Horizon	***Contents***	***Update Requirements***
RTP	*20+ Years*	*Future Goals, Strategies & Projects*	*Nonattainment MPOs – Every 4 Years* *Attainment MPOs – Every 5 Years* *RTPAs – Every 5 Years*
OWP	*1 Year*	*Planning Studies and Tasks*	*Annually*
FTIP (MPOs Only)	*4 Years*	*Transportation Projects*	*At least every 4 Years*
RTIP (RTPAs/CTCs)	*5 Years*	*Transportation Projects*	*Every 2 Years*
ITIP (Caltrans)	*5 Years*	*Transportation Projects*	*Every 2 Years*

Requirements (Shalls)
Federal: Title 23 CFR Part 450.324(a) requires MPOs to prepare a transportation improvement program (TIP)

State: California Government Code Sections 65082, 14526, 14527 and 14529 require the preparation of the STIP, RTIPs and ITIP.

2.~~5~~ 6 Consistency with Other Planning Documents

It is very important that the RTP be consistent with other plans prepared by local, state, federal agencies and Native American Tribal Governments. This consistency will ensure that no conflicts would impact future transportation projects. While preparing an updated RTP, MPOs~~/RTPAs~~ should, as appropriate, incorporate or consult such local/regionally prepared documents as:

1. General Plans (especially the Circulation and Housing Elements);
2. Airport Land Use Compatibility Plans;
3. Air quality State Implementation Plans (SIPs);
4. Short- and Long-Range Transit Plans;
5. Habitat Conservation Plans;
6. Urban Water Management Plans;
7. Local Coastal Programs (if applicable), and
8. Public Agency Trail Plans (if applicable)

MPOs~~/RTPAs~~ also should consult State prepared transportation planning documents such as:

1. California Transportation Plan;
2. California Rail Plan;
3. Interregional Transportation Strategic Plan;
4. Transportation Concept Reports;
5. California Aviation System Plan;
6. Goods Movement Action Plan;
7. California Freight Mobility Plan;
8. Strategic Highway Safety Plan;
9. California Strategic Highway Safety Plan, and Corridor System Management Plans.

Federal regulations ~~as a result of SAFETEA-LU,~~ require MPOs to consult with resource agencies during the development of the RTP. This consultation should include the development of regional mitigation and identification of key documents prepared by those resource agencies that may impact future transportation plans or projects. MPO staff should make a concerted effort to ensure any actions in the RTP do not conflict with conservation strategies and goals of the resource agencies.

2.~~6~~ 7 Coordination with Other Planning Processes

RTPs are prepared within the context of many other planning processes conducted by federal, tribal, state, regional and local agencies. This section provides background information and best practices for how MPOs ~~and RTPAs~~ can integrate the planning processes associated with the Smart Mobility Framework, Complete Streets, Context Sensitive Solutions, and system planning documents including Transportation Concept Reports (TCRs), ~~and~~ Corridor System Management Plans (CSMPs), District System Management Plans (DSMPs), the Interregional Transportation Strategic Plan (ITSP), and other transportation plans into development of the RTP. These initiatives and implementation tools work toward achieving the California Transportation Plan 2040 goals. They also align with the principles of the federal Partnership for Sustainable Communities.

Smart Mobility Framework

The Caltrans Smart Mobility Framework[1] (SMF) is a key strategic tool to develop travel choices, healthy and livable communities, reliable travel times for people and freight, and safety for all users. The SMF supports the goals of climate change intervention and energy security while supporting the goals of the California Transportation Plan (CTP) 2040, and the federal Livability Principles for Sustainable Communities[2].

The SMF integrates transportation and land use by applying principles of location efficiency, complete streets, connected and integrated multimodal networks, housing near destinations for all income levels, and protection of parks and open space. This framework is designed to help keep California communities livable and supportive of healthy life styles while allowing each to maintain its unique community identify.

The CTP reflects the understanding that a full set of transportation strategies includes initiatives to address land use and development. The SMF provides a framework to plan for the challenges of increased demands on an aging transportation system, climate change challenges, and current and future generations' demands for transportation choices.

In addressing the need for access to destinations for people and goods, the SMF provides guidance to incorporate new concepts and tools alongside well-established ones. It calls for participation and partnership by agencies at all levels of government, as well as private sector and community involvement.

~~The Smart Mobility Framework emphasizes travel choices, healthy communities, livable communities, reliable travel times for people and freight, and safety for all users. This vision supports the goals of climate change intervention and energy security.~~

~~The sustainability principles - the "3Es" of environment, economy, and equity form a basis for decisions and actions that comprehensively address contemporary challenges. Caltrans has embraced the principles and incorporated these principles into the California Transportation Plan (CTP).~~

~~The CTP and other Caltrans activities, notably the Department-sponsored Regional Blueprint Planning Programs, **retain or replace/delete Blueprint language?** reflect the recognition that a full set of transportation strategies includes initiatives to address land use and development. In addressing the mobility crunch faced by the State's households and businesses, Smart Mobility emphasizes new concepts and tools alongside well-established ones. It calls for participation and partnership by agencies at all levels of government, as well as private sector and community involvement.~~

~~Smart Mobility is an approach that addresses:~~
- ~~The state's mandate to address climate change.~~
- ~~The need to reduce per capita vehicle miles traveled.~~

[1] Smart Mobility Framework: https://www.dot.ca.gov/hq/tpp/offices/ocp/smf.html

[2] Livability Principles for Sustainable Communities: https://www.sustainablecommunities.gov/mission/livability-principles

- ~~Demand for a safe transportation system that gets people and goods to their destinations.~~
- ~~The commitment to create a transportation system that advances social equity and environmental justice.~~

~~In order to illustrate the far-reaching consequences of this new approach, the following are some of the implications of the Smart Mobility Framework:~~

- ~~Shifts in transportation agencies' roles.~~
- ~~Interregional network role.~~
- ~~An emphasis on integrated transportation and land use planning.~~
- ~~Respecting unique, locally-based approaches to Smart Mobility.~~
- ~~Positioned to respond to emerging requirements for sustainable communities planning.~~
- ~~Continued innovation with respect to sustainability and Smart Mobility practices.~~

~~More information can be found at:~~

~~http://www.dot.ca.gov/hq/tpp/offices/ocp/smf.html~~

Complete Streets

A "Complete Street" is a transportation facility that is planned, designed, constructed, operated and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit and rail riders, and motorists appropriate to the function and context of the facility.

The California Complete Streets Act of 2008 (AB 1358) ensures that the ~~transportation~~ general plans of California cities and counties meet the needs of all users, including pedestrians, transit, bicyclists, the elderly, motorists, and the disabled. AB 1358 requires cities and counties to identify how the jurisdiction will provide accommodation of all users of roadways during the revision of the circulation element of their general plan. ~~The bill directs~~ The Governor's Office of Planning and Research ~~to~~ amended guidelines for the development of the circulation element to accommodate all users. A comprehensive update of the General Plan Guidelines in 2016 includes guidance on how cities and counties can modify the circulation element to plan for a balanced, integrated, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.

The benefits of Complete Streets include: Safety; Health; Greenhouse Gas Emission Reduction; and Economic Development and Cost Savings.

Multimodal transportation networks, using complete streets best practices, can lead to safer travel for all roadway users. Designing streets and travel routes that consider safe travel for all modes can reduce the occurrence and severity of vehicular collisions with pedestrians and bicyclists. Streets and other transportation facility design considerations that accommodate a variety of modes and users abilities can contribute to a safer environment that makes all modes of travel more appealing.

Planning for Complete Streets will enable local governments to provide healthier lives by encouraging physical activity. Public health studies have demonstrated that people are more likely to walk in their neighborhood if it has sidewalks. Also, studies have found that people with

safe walking environments within a 10 minute walking radius are more likely to meet recommended physical activity levels. The integration of sidewalks, bike lanes, transit and rail amenities, and safe crossings into initial design of projects is more cost-effective than making costly retrofits later. Complete Streets is also a key strategy in the reduction of greenhouse gas emissions. Providing community residents with an option that gets them out of their cars is a proven strategy for improving communities, reducing air pollution, and generating local business.

Creating integrated, multimodal transportation networks can improve economic conditions for both business owners and residents. A network of Complete Streets can be safer and more appealing to residents and visitors, which can benefit retail and commercial development. Multimodal transportation networks can improve conditions for existing businesses by helping revitalize an area attracting new economic activity.

Integrating the needs of all users can also be cost-effective by reducing public and private costs. Accommodating all modes reduces the need for larger infrastructure projects, such as additional vehicle parking and road widening, which can be more costly than Complete Streets retrofits.

While AB 1358 provides no statutory requirement for MPOs ~~and RTPAs,~~ integration of Complete Streets policies ~~should be considered~~. support local agencies' requirements to address Complete Streets in circulation elements of their general plan.

MPOs ~~and RTPAs~~ should also integrate Complete Streets policies into their Regional Transportation Plans, not only as a means to develop a Sustainable Communities Strategy, but also to identify the financial resources necessary to accommodate such policies, and should consider accelerating programming for projects that retrofit existing roads to provide safe and convenient travel by all users.

MPOs ~~and RTPAs~~ should encourage all jurisdictions and agencies within the region to ensure that their circulation elements and street and road standards, including planning, design, construction, operations, and maintenance procedures address the needs of all users. Streets, roads and highways should also be safe for convenient travel in a manner that is suitable within the context of Complete Streets. To the extent feasible, MPO funded transportation system projects, corresponding Complete Street facilities, and improvements should meet the needs in project areas to maximize connectivity, convenience and safety for all users. ~~all users of the transportation system, to the extent practicable.~~

Along the shoreline of coastal counties, one element of the Complete Streets program should be the California Coastal Trail (CCT), for additional information regarding the CCT see Section 6.13.

~~Regional planning agencies should also include Complete Streets improvements in MPO/RTPA funded transportation system projects to the extent feasible.~~

~~**Requirements (Shalls)**~~
~~**Federal:** None~~
~~**State:** None~~

Recommendations (Shoulds) **verify for CFR citation**
Federal: FAST Act Section 1442. Safety for users, encourages each State and Metropolitan Planning Organization to adopt standards for the design of Federal surface transportation

projects that provide for the safe and adequate accommodation (as determined by the State) of all users of the surface transportation network, including motorized and non-motorized users, in all phases of project planning development and operation.

Investing in development of Complete Streets Policy Guides that assist member agencies in the adoption of Complete Streets policy for their jurisdictions. A policy guide can function as a template. It can provide flexibility and be revised to accommodate individual agency's needs.

Recommendations (Shoulds)

~~**Federal:** None~~

State: According to Government Code 65040.2 Section (2)(h)(h), it is the intent of the Legislature to require in the development of the circulation element of a local government's general plan that the circulation of users of streets, roads, and highways be accommodated in a manner suitable for the respective setting in rural, suburban, and urban contexts, and that users of streets, roads, and highways include bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, public transportation, and seniors.

Best Practices Complete Streets policies and practices are best implemented with a comprehensive and integrated approach of all agencies involved, taking advantage of opportunities for synergies and cost savings such as restriping when repaving.

Additional information regarding Complete Streets is available at the following links:

http://www.smartgrowthamerica.org/2010/05/17/complete-streets-best practices

https://www.opr.ca.gov/s_generalplanguidelines.php

http://assets.aarp.org/rgcenter/il/2009_02_streets_5.pdf

http://assets.aarp.org/rgcenter/ppi/liv-com/2009-12-streets.pdf

http://www.aarp.org/livable-communities/info-2014/complete-streets-southeast-toolkit.html

http://planning.org/research/streets/

http://www.mtc.ca.gov/planning/bicyclespedestrians/routine_accommodations.htm

http://mtc.ca.gov/our-work/plans-projects/bicycle-pedestrian-planning/complete-streets

http://www.californiatransportationplan2040.org/

http://www.californiatransportationplan2035.org/Content/10029/Complete_Streets.html

http://www.completestreets.org/

http://www.smartgrowthamerica.org/documents/factsheets/cs-economic.pdf

Case Studies:

http://www.smartgrowthamerica.org/leadership-institute/case-studies

http://smarthgrowthamerica.org/documents/case-studies/davis_casestudy.pdf

http://smarthgrowthamerica.org/documents/case-studies/richmond_casestudy.pdf

http://smarthgrowthamerica.org/documents/case-studies/ranchocordova_casestudy.pdf

The following link contains a case study in the SCAG region of how MPOs can integrate neighborhood electric vehicles into a complete streets policy:

http://www.scag.ca.gov/sb375/pdfs/FS/cs-SouthBayStrategy.pdf

Context Sensitive Solutions update language?

Context Sensitive Solutions (CSS) is an inclusive approach to planning, designing, constructing, maintaining, and operating the transportation system. It integrates and balances community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Context sensitive solutions are reached through a collaborative, interdisciplinary process involving all stakeholders. CSS attempts to balance transportation goals with community goals and natural environments. This requires careful, imaginative, and early planning, and continuous community involvement.

The context of all projects and activities being planned is a key factor in reaching sustainable decisions. The context should be considered for all transportation and support facilities when defining, developing, and evaluating options. When considering the context, issues such as funding feasibility, maintenance feasibility, needs of all users, needs of the community, traffic demand, impact on alternate routes, impact on safety, and relevant laws and regulations should be addressed.

Context Sensitive Solutions for California Tribal Governments and tribal communities, if applicable, should also be defined through outreach, collaboration and consultation. This would assist with identification and protection of cultural resources, historic sites, and environmental justice issues as well as, transportation needs and strategies. The evolution of economic development for some California Tribes has created increased demand for improved transportation infrastructure (i.e. roads, traffic control, access, etc.) and increased need for Context Sensitive Solutions to address these new demands.

In towns and cities across California, the State highway may be the only through street or may function as a local street. These communities may desire that their main street be an economic, social, and cultural asset as well as provide for the safe and efficient movement of people and goods. In urban areas, communities may want transportation projects to provide opportunities for enhanced non-motorized travel and visual quality. In natural areas, projects can fit aesthetically into the surroundings by including contour grading, aesthetic bridge railings, and special architectural and structural elements. Addressing these needs throughout the planning and development process will help ensure that transportation solutions meet more than transportation objectives. More information is available at the following links:

http://www.dot.ca.gov/hq/oppd/context/index.htm

http://www.contextsensitivesolutions.org/

~~**Requirements (Shalls)**~~

~~**Federal:** None~~
~~**State:** None~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

System Planning Documents

Transportation Concept Reports (TCRs)

Transportation Concept Reports (TCRs) are long-range transportation planning documents that guide the development of California's State Highway System (SHS) as required by Government Code 65086, Title 23 CFR Part 450 Subpart B[3], and the transportation needs of the public, stakeholders, and SHS users. A comprehensive planning document for each highway route and the corresponding transportation corridor provides a focused look at the existing conditions and performance of the route, future transportation needs and demands, and improvements necessary to address those needs within the context of the communities and rural areas the highways traverse. Caltrans meets this need through the development of the TCRs. Each Caltrans District is delegated the responsibility to create a TCR for the SHS routes within their boundaries.

Corridor System Management Planning (CSMP)

A Corridor System Management Plan (CSMP) is a comprehensive, integrated management plan for optimizing efficient, effective multimodal system performance within a transportation corridor. ~~increasing transportation options, decreasing congestion, and improving travel times in a transportation corridor. A corridor must have a CSMP to be eligible to receive funds from the Proposition 1B-funded Corridor Mobility Improvement Account and the Highway 99 Bond Programs.~~ A CSMP includes all travel modes in a defined corridor - highways and freeways, parallel and connecting roadways, public transit (bus, bus rapid transit, light rail, intercity rail) and bikeways and pedestrian facilities. CSMPs are developed and implemented by Caltrans in partnership with regional and local transportation agencies and other partners. ~~As of 2009, approximately half of the forty-five first-generation CSMPs have been completed and others are in progress. Completed documents and those in progress can be downloaded from:~~

~~www.corridormobility.org~~

A CSMP incorporates both capital and operational improvements and is developed through ~~a multi-step approach~~ the following steps:

1) Corridor limits defined.
2) Corridor team established.
3) Performance objectives defined; preliminary ~~performance~~ assessment performed.
4) ~~Detailed~~ Comprehensive performance assessment performed; causation of performance issues identified. ~~that identifies causality of congestion performed.~~

[3] http://www.fhwa.dot.gov/hep/23cfr450.htm

5) ~~Micro-simulation model~~ Simulate and test improvement scenarios and alternatives for most effective mix of projects, strategies and actions ~~developed~~.
6) Alternatives selected and CSMP prepared. The Plan should be accepted or adopted by Caltrans, the MPO/RTPA, cities and counties as a guide for corridor management.

Completed CSMPs and other Caltrans system planning documents can be viewed at:
http://www.dot.ca.gov/hq/tpp/corridor-mobility/

District System Management Plans (DSMPs)

The DSMP is a long-range, 20-25 year, policy planning document that describes how the District envisions the transportation system will be maintained, preserved, managed, operated, and developed within the planning horizon. It provides a vehicle for the development of multimodal, intermodal, and multijurisdictional system strategies. These strategies are developed in partnership with related Caltrans functional units, Divisions, and Districts, as well as external partners, such as MPOs, cities, counties, tribal governments, other partner agencies, and the public. The DSMP plays a major role in guiding the development of both the TCRs and the CSMPs.

Interregional Transportation Strategic Plan (ITSP)

The ITSP is a Caltrans planning document that provides guidance for the identification and prioritization of interregional transportation projects identified on the State's Interregional Transportation System. The ITSP provides an overview of the interregional transportation system, including identification of the major Strategic Interregional Corridors and Priority Interregional Facilities, which are the corridors and transportation facilities that have the greatest impact on interregional travel. Concepts have been created for each Strategic Interregional Corridor that will be used by public agencies to plan and program transportation improvements.

Completed Caltrans System Planning documents can be downloaded from:

http://www.dot.ca.gov/hq/tpp/corridor-mobility/

The RTP should:

- ~~Identify urban freeway corridors with current and projected recurrent daily vehicle hours of delay that are a priority for preparing CSMPs.~~
- Include by corridor all strategies, actions and improvements identified in system planning documents ~~the adopted CSMP that are needed to restore capacity,~~ taking into consideration statewide and regional objectives which can include but are not limited to: multi-modal mobility, accessibility, environmental protection, and greenhouse gas reduction.
- Describe how the corridor will be managed across jurisdictions and modes to preserve corridor productivity based upon performance measurement.
- Include a reasonable time-line for each ~~urban freeway~~ corridor to determine ~~be restored to full capacity and identify actions to preserve capacity restoration recognizing~~ the need for each region to consider multiple objectives regarding corridor mobility.
- Identify funding by corridor to implement the corridor objectives ~~CSMP~~.

- Describe roles and relationships among units of local government, modal agencies, Caltrans and related agencies for managing the corridor for highest mobility benefits and for measuring and evaluating performance.

Requirements (Shalls)
Federal: ~~None~~ Federally required metropolitan planning process (23 USC Section 134). **verfiy**
State: None

Recommendations (Shoulds)
Federal: None
State: ~~Governor's Executive Order S-02-07, issued January 24, 2007, mandates the development and implementation of an accountability plan for bond project funds. In its programming of Proposition 1B funds from the Corridor Mobility Improvement Account, the California Transportation Commission (Commission) identified expectations for Corridor System Management Plans.~~

Best Practices:

~~Governor's Executive Order S-02-07~~
~~http://gov.ca.gov/index.php?/executive-order/5248/~~

~~Commission Proposition 1B CMIA Guidelines including CSMP Expectations~~
~~http://www.catc.ca.gov/CMIA_Guidelines_Adopted.pdf~~

Caltrans Corridor Mobility page – http://www.dot.ca.gov/hq/tpp/corridor-mobility

2.~~7~~ 8 RTP Development Sequencing Process

Following the passage of SB 375 several years ago, MPOs will need to continue to coordinate with the ARB and HCD. MPOs are encouraged to continue to communicate with ARB as early in the RTP development as possible to obtain input. ARB must review the SCS and possibly an APS after the documents are prepared. Communication between the MPO and HCD should also take place as early in the RTP process as possible to ensure the regional housing needs assessment (RHNA) is coordinated with the development of the SCS.

In summary, early communication and coordination with all appropriate levels of government, elected officials and the public is very important to avoid delays that may impede the final federal air quality conformity determination, the determination by ARB whether the SCS or APS, if implemented, would achieve the regional GHG emission reduction target, or successful coordination of the RHNA with the SCS.

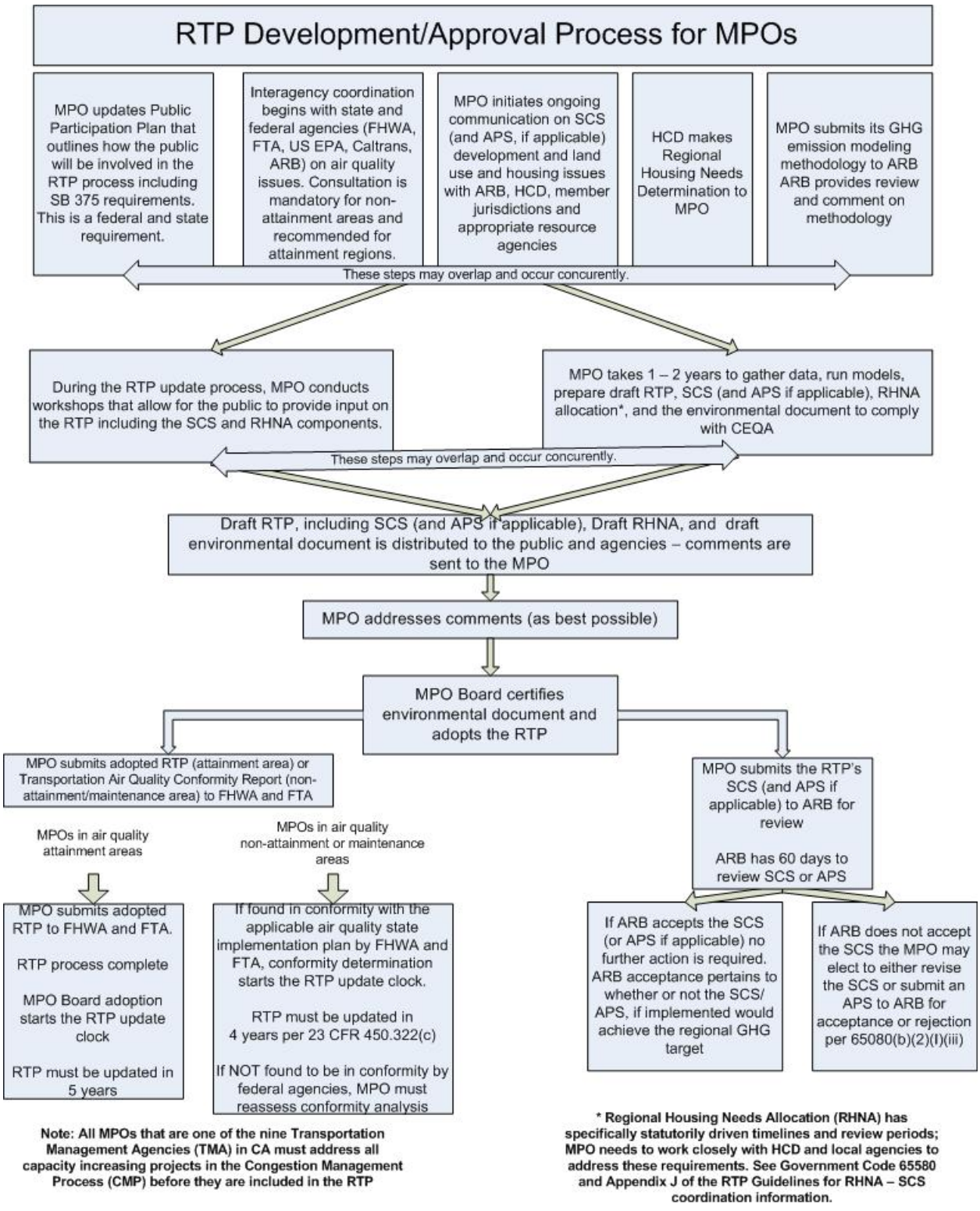
The following flowchart entitled: "RTP Development/Approval Process for MPOs" was prepared to help summarize the overall steps that MPOs must undertake to ultimately adopt an RTP with a transportation air quality conformity report that has been found in conformity with the applicable air quality state implementation plan (for non-attainment regions) and that has received acceptance by ARB that the SCS/APS, if implemented, would achieve the region's greenhouse gas emissions reduction target. The process outlined in this flowchart is very

complex and may take several years from RTP inception to RTP adoption, SCS/APS acceptance/rejection, and federal conformity determination.

Requirements (Shalls)
Federal: Title 23 CFR Part 450
State: Government Code Section 65080

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~


RTP Development/Approval Process for MPOs
MPO updates Public Participation Plan that outlines how the public will be involved in the RTP process including SB 375 requirements. This is a federal and state requirement.
Interagency coordination begins with state and federal agencies (FHWA, FTA, US EPA, Caltrans, ARB) on air quality issues. Consultation is mandatory for non-attainment areas and recommended for attainment regions.
MPO initiates ongoing communication on SCS (and APS, if applicable) development and land use and housing issues with ARB, HCD, member jurisdictions and appropriate resource agencies
HCD makes Regional Housing Needs Determination to MPO
MPO submits its GHG emission modeling methodology to ARB ARB provides review and comment on methodology
These steps may overlap and occur concurently.
During the RTP update process, MPO conducts workshops that allow for the public to provide input on the RTP including the SCS and RHNA components.
MPO takes 1 – 2 years to gather data, run models, prepare draft RTP, SCS (and APS if applicable), RHNA allocation*, and the environmental document to comply with CEQA
These steps may overlap and occur concurently.
Draft RTP, including SCS (and APS if applicable), Draft RHNA, and draft environmental document is distributed to the public and agencies – comments are sent to the MPO
MPO addresses comments (as best possible)
MPO Board certifies environmental document and adopts the RTP
MPO submits adopted RTP (attainment area) or Transportation Air Quality Conformity Report (non-attainment/maintenance area) to FHWA and FTA
MPOs in air quality attainment areas
MPOs in air quality non-attainment or maintenance areas
MPO submits adopted RTP to FHWA and FTA.
RTP process complete
MPO Board adoption starts the RTP update clock
RTP must be updated in 5 years
If found in conformity with the applicable air quality state implementation plan by FHWA and FTA, conformity determination starts the RTP update clock.
RTP must be updated in 4 years per 23 CFR 450.322(c)
If NOT found to be in conformity by federal agencies, MPO must reassess conformity analysis
MPO submits the RTP's SCS (and APS if applicable) to ARB for review
ARB has 60 days to review SCS or APS
If ARB accepts the SCS (or APS if applicable) no further action is required. ARB acceptance pertains to whether or not the SCS/ APS, if implemented would achieve the regional GHG target
If ARB does not accept the SCS the MPO may elect to either revise the SCS or submit an APS to ARB for acceptance or rejection per 65080(b)(2)(I)(iii)
Note: All MPOs that are one of the nine Transportation Management Agencies (TMA) in CA must address all capacity increasing projects in the Congestion Management Process (CMP) before they are included in the RTP
* Regional Housing Needs Allocation (RHNA) has specifically statutorily driven timelines and review periods; MPO needs to work closely with HCD and local agencies to address these requirements. See Government Code 65580 and Appendix J of the RTP Guidelines for RHNA – SCS coordination information.

2.~~8~~ 9 Adoption - Update Cycles and Amendments

Regional transportation planning is a dynamic process requiring continuous monitoring and periodic updating. Updating an RTP ensures the MPOs planning process is valid and consistent with current and forecasted transportation and land use conditions and trends for at least a 20-year planning horizon.

MPOs/RTPAs may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The transportation plan (and any revisions or amendments) shall be approved by the MPO's Board and submitted for informational purposes to the CTC and Caltrans. Copies of any revised or amended transportation plans must be provided to the FHWA and the FTA.

California state law, (Government Code Section 65080(d)) mirrors the federal update requirement and states that nonattainment MPOs must update their RTPs at least every four years and attainment MPOs at least every five years. Title 23 CFR Part 450.322(a) states that in non-attainment and maintenance areas, the effective date of the RTP shall be the date of a conformity determination issued by FHWA and FTA. In attainment areas, the effective date of the RTP shall be its date of adoption by the MPO. An MPO ~~or RTPA that is not within an MPO,~~ that is required to adopt a regional transportation plan not less than every five years, may elect to adopt the plan not less than every four years in order that their member cities and counties can revise their housing elements every 8 years pursuant to Government Code Sections 65080 (b)(2)(M) and 65588(b)**. Delete language as this deadline passed for this option?**

"This election shall be made by the board of directors of the metropolitan planning organization or regional transportation planning agency no later than June 1, 2009, or thereafter 54 months prior to the statutory deadline for the adoption of housing elements for the local jurisdictions within the region, after a public hearing at which comments are accepted from members of the public and representatives of cities and counties within the region covered by the metropolitan planning organization or regional transportation planning agency."

Failure of an MPO to adhere to the State and Federal required update period could result in the FHWA not approving the region's FTIP. ~~Non-MPO RTPAs are required by State statute to update their RTPs at least every five years, regardless of whether they are located in an air quality nonattainment or maintenance area.~~ Failure of an MPO ~~or RTPA~~ to adhere to the required update period could result in a lack of state and federal funding as projects that are programmed for state or federal funding in the STIP and FTIP must be included in the approved RTP.

RTPs can be amended or modified. The U.S. DOT identified two types of revision methods for an RTP (1) A major revision that is an "amendment" and, (2) A minor revision that is an "administrative modification." The definitions in Title 23 CFR Part 450.104 clarify major and minor amendments to RTPs.

RTP Amendment (major)

RTPs must be amended whenever a plan revision takes place such as the addition or deletion of a project or a major change in project scope, cost and schedule. Other potential triggers for an RTP Amendment could include changing programmed project phases or any major change in design concept or design scope (e.g. changing project termini or the number of through traffic lanes). Amendments require public review for possible comments, demonstration of fiscal

constraint and conformity determination (for MPOs located in nonattainment and maintenance areas).

RTP Administrative Modification (minor) **update language as appropriate**
As stated in SAFETEA-LU, Administrative Modification means a minor revision to an RTP that includes minor changes to project/project phase costs, minor changes to funding sources of previously included projects, and other minor changes to projects/project phase initiation dates.

An RTP administrative modification is much more flexible and open to wide interpretation. An administrative modification is a revision that does not require public review and comment, re-demonstration of fiscal constraint, or a conformity determination (in nonattainment and maintenance areas).

Re-Adopting Existing RTPs

Re-adopting the existing RTP is an option if no significant factors have occurred within the region that would impact the existing RTP. However, this option would require close evaluation of the current status of the RTPs fiscal constraint, conformity determination and any changes to the project scope, cost and schedule of the FTIPs. Re-adopting an RTP could mean that no new projects are presented in the document, nor will there be new projects in the current update cycle of the RTP.

Conformity Considerations

When an MPO~~/RTPA~~ Board prepares an RTP amendment or update, they also need to be aware that a conformity determination may need to be conducted, depending on the type of changes, modifications or amendments. An amendment that makes any of the following changes to the RTP would require a new conformity determination for the RTP:

1) The amendment adds or deletes a non-exempt project;
2) The amendment significantly changes the design concept or scope of a regionally significant project; or
3) The amendment changes the implementation year such that it affects a transportation conformity analysis year.

Amendments Prior to an Approved SCS (Grace Period): (**Delete language or update as appropriate)**

An MPO is not required to implement an SCS or other consistency requirements until the first 4 or 5 year complete RTP update after the greenhouse gas emissions reduction targets are adopted for their region.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.322(a) and (c), mandatory RTP update cycles for MPOs.
State: ~~Government Code Section 65080(d), mandatory RTP update cycles for RTPAs~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices:

It is recommended that MPOs~~/RTPAs~~ coordinate with Caltrans district regional planners on reviewing, commenting and at times facilitating the determination of what constitutes an RTP Amendment or Administrative modification.

2.~~9~~ 10 RTP Checklist

The RTP Checklist is contained in Appendix C of this document. The purpose of the RTP Checklist is to establish a minimum standard for developing the RTP. The checklist of transportation planning requirements has been updated in order to conform to federal and state RTP requirements.

MPOs~~/RTPAs~~ should include the page numbers indicating where the Checklist items are addressed in the region's RTP. This requirement of identifying page numbers will assist the general public, federal, state and local agencies to locate the information contained in the RTP.

The checklist should be completed by the MPO/RTPA and submitted to the CTC and Caltrans along with the draft and final RTP. This checklist is available electronically from Caltrans planning staff. Each MPO~~/RTPA~~ is encouraged to complete the checklist electronically. Following its completion, the MPO's ~~or RTPAs~~ Executive Director (or designated representative) must sign the checklist to indicate that the information is complete and correct.

Requirements (Shalls)
Federal: None
State: Pursuant to California Government Code Section 14032(a), which authorizes the CTC to request an evaluation of all RTPs statewide to be conducted by Caltrans. All MPOs~~/RTPAs~~ are required to submit an RTP Checklist with their **Draft** and **Final** RTP when the document is submitted to Caltrans and the CTC.

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

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Chapter 3

~~Modeling~~ Regional Transportation Plan Analysis and Modeling

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3.1 Introduction

The purpose of this guidance is to provide clear and relevant direction to MPOs and Regional Transportation Planning Agencies (RTPAs/as applicable) for use in developing their travel demand models (TDMs) used to support RTP analysis, determine federal RTP air quality conformity, and for SB 375 Sustainable Community Strategy implementation. It is also to ensure consistent, and transparent guidance related to modeling methodologies between state, regional, and local agencies.

This draft of the 2016 RTP guidelines builds on the 2010 guidelines and reflects changes in federal and state law and encourages best practices in transportation modeling. Achieving California's transportation, air quality and climate objectives is in large part depend on effective modeling practices and consistency and coordination of modeling among state, regional and local agencies.

This chapter reflects current modeling information, the experience gained with the application of TDM during development of the first round of SCS, and uses the most recent and relevant "living documents" such as Recommendations of the RTAC Pursuant to SB-375 and input received from various agencies.

3.2 RTP Modeling as a Policy Tool - Transportation Modeling / Projecting Future Demand

Transportation planners and engineers utilize various transportation analysis tools (models) as both policy and technical tools during the regional transportation planning process.

Policy Tools:

- Improve the decision-making process by assisting the public, and decision-makers in evaluating the strategies that best address the transportation needs of their jurisdiction.
- Present market strategies to the public/stakeholders. Some models such as GIS, have excellent graphical and animation displays, which could be used as tools to show "what if" scenarios to the public and/or stakeholders.
- Provide reasonable transparency to that modeling and analytical process.
- Provide a clear explanation of the modeling and analytical techniques applied in assessing the implications of the land use scenarios or other alternatives studied.

Technical Tools:

- Provide an understanding of the sensitivity of the forecast results to various policy assumptions; for example, where feasible, offering estimates of the elasticities and cross elasticities of demand for various modes of travel with respect to critical variables such as access time, travel time, reliability, safety, and cost.
- Improves the decision-making process by helping practitioners arrive at better planning/engineering decisions for complex transportation problems. Models are used to estimate the impact of the deployment of traffic management and other strategies, and to help set priorities among competing projects. In addition, they can provide a consistent approach for comparing potential improvements or alternatives.
- Evaluate and prioritize planning/operational alternatives. This typically involves comparing "no build" conditions with alternatives, which include various types of potential improvements. The impacts are reported as performance measures and are defined as

the difference between the no-build and alternative scenarios. The results can be used to select the best alternative or prioritize improvements, increasing the odds of having a successful deployment.

- Pertinent insights gained through research into the variables that influence consumer choice of transit vs. single occupant vehicles, particularly in transit oriented and mixed use development.
- Operate and manage existing roadway capacity. Some models provide optimization capabilities, recommending the best design or control strategies to maximize the performance of a transportation facility.

3.3 Requirements for RTP Analysis

Federal legislation requires each metropolitan planning organization (MPO) to develop a regional transportation plan (RTP) as part of its transportation planning process [23 USC 134(g) and 49 USC. 5303(f)]. The plan is required to cover a minimum 20-year horizon, include long and short-range strategies and actions, and describe the ways the region intends to invest in the transportation system (23 CFR §450.322). State law aligns with federal law, requires transportation agencies identified under California Government Code sections 29532 or 29532.1 to develop RTPs, and requires MPOs to develop Sustainable Community Strategies (SCS) as part their RTP (Gov. Code, § 65080). State law subjects the development of the SCS to the requirements of Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal Regulations, including the requirements to utilize the most recent planning assumptions considering local general plans and other factors (Gov. Code, § 65080(b)(2)(B))..

Regional transportation plan analysis is also used as a policy tool used to test alternative scenarios, to assist decision makers in developing polices, and to inform the public. During the RTP development, transportation planners and engineers estimate future transportation demand, vehicle travel, congestion, emissions, and access to jobs utilizing various analysis tools (models) such as:

Regional Travel Demand Model (RTDM)

MPOs are required under 23 CFR 450.322(f) to include projected transportation demand (person/trips), future transportation facilities (major roadways, transit, multimodal and intermodal, pedestrian walkways, bicycle facilities, and intermodal connectors) within their RTPs. They are also required to include operational and management strategies, consider the congestion management process (CMP) results in transportation management areas (TMAs), assess capital investments and other strategies that preserve the existing and projected transportation infrastructure and provide for multimodal capacity. RTDM are also crucial tools used for developing strategies for reducing GHG emissions and testing the strategies to identify if SCS meets ARB's emission reduction targets *(See section 6.23 6.27).*

Regional travel demand modeling is utilized by transportation planners and engineers to comply with federal and state requirements, including air quality conformity analysis and meeting their SCS GHG emissions targets. RTDMs use mathematical equations to predict human travel behavior and to forecast transportation services demand. They allocate estimates of regional population, employment, and land use to person/vehicle-trips by travel mode, route, and time period. The outputs are used to assist decision makers in developing polices, inform the public, in NEPA and CEQA processes, and for many other purposes. *(For additional guidance see, the latest CARB, Methodologies for Review of GHG Reduction for SCSs Pursuant to SB 375 Document).*

Statewide Travel Demand Model:

For MPOs to affect the emissions from interregional travel and share responsibly for reducing those emissions with bordering regions, it is critical that they have the ability to accurately capture VMT associate with interregional travel trips. California Statewide Travel Demand Model is used to forecast interregional trips and other travel types. MPOs can use this model to assist in capturing interregional VMT and as a point of reference in instances where adjacent MPO models produce dissimilar interregional volumes. Regional transportation planning agencies can use this data if they do not have access to a RTDM.

Close collaboration is urged between bordering MPOs and Caltrans in developing interregional trip estimates. In those instances where MPO models produce dissimilar interregional volume, the CSTDM will act as a point of reference which the MPO regional models should reasonably consider. Caltrans will act as facilitator in these situations to help reach consensus. *(For more information see, http://www.dot.ca.gov/hq/tpp/offices/omsp/statewide_modeling/cstdm.html)*

Visualization Technics and Sketch Modeling of Scenarios

Pursuant to 23 CRF 450.316(a) an RTP is required to include visualization techniques such as GIS-based information, maps charts, and other visual aids that are useable and understandable to the public. Furthermore, MPOs are required (Gov. Code 65080(b)(2)(F)(iii) during their SCS public workshops to use to extend practical urban simulation computer modeling to create visual representations of the SCS or APS *(See 2010 RTP Guidelines, Regional Greenhouse Gas Emissions Requirements and consideration in the RTP, Visualization and Mapping, page 127 for additional information related to SCS development.)*

Regional Economic & Land Use Model

Land use models are used to forecast land use changes and allocations and incorporate those changes into RTDMs, to determine economic and environmental impacts of land-use transportation policies, and to capture the interactive relationship between land use and transportation.

- **See Regional Greenhouse Gas Emissions Requirements and Considerations in the RTP, Section 6.25, Appendix I, and** "SB 375 Regional Targets Advisory Committee Final Report." September 29, 2009 California Air Resources Board **for additional SCS land use guidance**
- **Consider using socioeconomic models to measure the impacts of transportation investments on low income and minority communities and to project employment indicators (including jobs by sector and income).**
- **Consider developing land use models that are sensitive to transportation scenarios so the effects of land use and transportation policies can interact with feedback in an integrated transportation model.**
- **Consider using micro economic land use modes for use with activity-based travel demand models**
- **Consider population growth based on birth, mortality, and international and domestic migration within the RTDM.**

EMFAC Model

The EMFAC emissions model is developed and used by ARB to assess emissions from on-road vehicles including cars, trucks, and buses in California, and to support ARB's regulatory and air quality planning efforts to meet the Federal Highway Administration's transportation planning requirements. The most recent approved version is EMFAC2014 (Federal Register Notice). The mobile source emissions inventory is ARB's tool for assessing the population, activity, and emissions from mobile sources. These inventories

are constantly being revised and updated to support the latest air quality plans and regulations. ~~*For additional guidance see, the latest CARB, Methodologies for Review of GHG Reduction for SCSs Pursuant to SB 37*~~(http://www.arb.ca.gov/msei/categories.htm#onroad_motor_vehicles)

3.4 RTDM **Quality Control and Consistency**

Regional Travel Demand Modeling consistency and quality control is tool used to determine a regions air quality conformity status and to effectively implementing SCSs. The conformity 40 CFR 93.105 requires that an interagency consultation process involving MPOs, State and local air quality planning agencies, State and local transportation agencies, EPA, and the USDOT for the following:

- Evaluating and choosing a model (or models) and associated methods and assumptions to be used in hot-spot analysis and regional emissions analysis (40 CFR 93.105(c)(1)(i)).
- Determining which minor arterials and other transportation projects should be considered "regionally significant" for the purposes of regional emissions analysis (in addition to those functionally classified as principal arterial or higher or fixed guideway systems or extensions that offer an alternative to regional highway travel), and which projects should be considered to have a significant change in design concept and scope from the transportation plan or TIP (40 CFR 93.105(c)(1)(ii)).

Furthermore, it is essential that MPOs, State Agencies, technical experts, have a voice in developing and determining realistic, relevant, and transparent model input assumptions, variables and factors, and sensitivity.

Consistency

- Modeling practices (including but not limited to SB 375) are encouraged to be consistent between State Agencies, MPOS, RTPAs, cities, counties, and CMAs.
- Agencies using MPOs models other than for regional planning are encouraged ensure that the model provides that appropriate scale and sensitive for applications (i.e. corridor, sub-area, or local planning studies). Below the regional leave, model refinements are likely necessary to ensure the model meets the validation targets established in the guidelines and is appropriately sensitive to smaller scale charges associated with sub-regional studies.
- The same land use used in the RTP modeling is encouraged to be used in the impact assessment for the No Action alternative, the Proposed Plan alternative, and the Environmentally Preferable Alternative.
- Assumptions, model inputs, data, and methodologies are encouraged be the same for modeling for federal air quality conformity and for SB 375 GHG emission reduction targets. The results provided to the federal government for ozone, carbon monoxide, particulate matter and nitrogen dioxide are encouraged come from the same emissions model run as the GHG emissions provided to ARB.
- MPOs are encouraged strive to use common data definitions, sources, and performance measures for date including but not limited to population, employment and house estimates, and provides, labor force ages, and VMT.
- Post-processing of modeling results can be accompanied the modeling limitations being overcome and how the limitations were identified.

- Consider developing a "Best Management Practices (BMP)" List that includes a comprehensive list of land use and transportation policies and practices that result in regional GHG reductions. Consider developing a BMP spreadsheet tool to assist in determine the approximate level of reduction that would be achieved by implementing a particular policy or set of strategies in a particular setting *(For more information see the Recommendations of the RTAC Pursuant to SB 375, September 2009).*

Model Input Assumptions

Model input assumptions are necessary part of running a transportation demand modeling and determining it the MPO will meet air quality conformity or its GHG emissions reductions targets. Assumptions must be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other agency authorized to make such estimates and approved by the MPO.

The United States Environmental Protection Agency (EPA) and the United States Department of Transportation (DOT) encourage nonattainment and maintenance areas to review and update their planning assumptions on a regular basis. Although regular updates of assumptions are not required by the transportation conformity rule, areas are strongly encouraged to review and update planning assumptions at least every five years, especially for population, employment, and vehicle registration assumptions, or to justify in the conformity determination why planning assumptions have not been reviewed and updated at least every five years[4].

Planning assumptions are required be reviewed through the interagency consultation process to determine whether they are adequate for conformity purposes (see 40 CFR 93.105(c)(1)(i)). The review of latest planning assumptions typically occurs in conjunction with transportation plan and TIP conformity determinations. The results of the review of the planning assumptions and consultation process would evaluating and choosing assumptions that are be documented in the conformity determination.

The interagency consultation process is also the forum for used in conformity determinations in isolated rural nonattainment and maintenance areas (40 CFR 93.105(c)(1)(vi)).Interagency consultation procedures shall also include the following specific processes (40 CFR 93.105(c)) listed below.[5]

- A process involving at least the MPO(s), State and local air quality planning and transportation agencies, EPA, and the Department of Transportation (DOT) for the following (40 CFR 93.105(c)(1));
- Evaluating and choosing models and associated methods and assumptions for hot-spot and regional emissions analyses (40 CFR 93.105(c)(1)(i));
- Determining which minor arterials and other projects are "regionally significant"6 for the regional emissions analysis (in addition to those functionally classified as principal arterials or higher or fixed guide way systems or extensions that offer an alternative to regional highway travel) (40 CFR 93.105(c)(1)(ii)); and
- Determining which projects should be considered to have a significant change in design concept and scope from the RTP or TIP (40 CFR 93.105(c)(1)(ii)).
- A process involving at least the MPO and State and local air and transportation agencies for (40 CFR 93.105(c)(2));

[4] Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008, page 8.

[5] Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008, pages 8 -9).

- Evaluating events that will trigger new conformity determinations in addition to those required by 40 CFR 93.104 (40 CFR 93.105(c)(2)(i));
- Consulting on emissions analysis for transportation activities which cross borders of MPOs, nonattainment areas or air basins (40 CFR 93.105(c)(2)(ii)).
- Section 93.110(a) of the transportation conformity rule requires conformity determinations to be based on the "most recent planning assumptions in force at the time the conformity analysis begins." Section 93.110(a) of the conformity rule also requires that, "New data that becomes available after an analysis begins is required to be used in the conformity determination only if a significant delay in the analysis has occurred, as determined through interagency consultation."
- Assumptions must be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other agency authorized to make such estimates and approved by the MPO. The conformity determination must also be based on the latest assumptions about current and future background concentrations (40 CFR 93.110(b))
- The conformity determination for each transportation plan and TIP must discuss how transit operating policies (including fares and service levels) and assumed transit ridership have changed since the previous conformity determination (40 CFR 93.110(c)).
- The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time (40 CFR 93.110(d)).
- The conformity determination must use the latest existing information regarding the effectiveness of the TCMs and other implementation plan measures which have already been implemented (40 CFR 93.110(e)).
- Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105 (40 CFR 93.110(f)).
- Each MPO shall prepare a SCS, subject to the requirements of 23 USC 450 and 40 CFR 93 including the requirement to utilize the most recent planning assumptions considering local general plans and other factors (Gov. Code 65080(b)(B)).
- Consider providing an explanation of what model limitations are being overcome and how the limitation are defined along with the post- processing results.
- Assumptions, model inputs, data, and methodologies are strongly encouraged be the same for modeling for federal air quality conformity and for SB 375 GHG emission reduction targets.
- For transparent information exchanges between ARB and MPOs, the RTAC recommends that MPOs and ARB clearly identify the key underlying assumptions included in both the targets and the MPOs determination how well it meet the targets. *(For more guidance see, Air Resource Board Staff Report, SB 375 Greenhouse Gas Emissions Reduction Targets update Process, Technical Issues, October 2014, page 6-7).*

<u>Data</u>

Modeling results are only as good as the data that goes into the model. MPOs must use the most current household travel surveys, demographic, socioeconomic and census data available

- Interagency consultation procedures shall include a process for consulting on the design, schedule, and funding of research and data collection efforts and regional transportation

model development by the MPO (e.g., household/ travel transportation surveys (40 CFR 93.105(b)(6)).

- Interagency consultation procedures shall include a process for providing final documents (including applicable implementation plans and implementation plan revisions) and supporting information to each agency after approval or adoption. This process is applicable to all agencies described in paragraph (a)(1) of this section, including Federal agencies (40 CFR 93.105) (40 CFR 93.105(b)(7).
- MPOs, the State, and the public transportation operators shall validate date utilized in preparing other existing modal plans for providing input into the transportation plan ((23 CFR §450.322(e)).
- MPOs shall to base their RTP update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity (23 CFR §450.322(e)).
- Each MPO model shall include auto operating cost in forecasting the travel. Auto operating cost is a key parameter in various steps of the travel demand model. Auto operating cost shall consist of fuel (primarily gasoline) cost and non-fuel-related costs, including repair, maintenance, tires, and accessories. This shall also include the effective fuel efficiency of the vehicle fleet.(SB 375 Chapter 728[6])
- Section 176(c)(1)(B)(iii) of the Clean Air Act states that "[t]he determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel, and congestion estimates as determined by the MPO or other agency authorized to make such estimates." The Clean Air Act requires that transportation investments be based on the most recent information that is available, in order to protect public health over the long-term.
- Whenever Highway Performance Monitoring System (HPMS) data is used for current and future years in conformity analyses, consider using the most recently available HPMS estimates of vehicle miles traveled (VMT).
- Areas that rely on the U.S. Census for certain planning assumptions are encouraged use the most recent estimates available from the Census Bureau.
- Areas that are using assumptions based on data collected through local or state surveys or other mechanisms are encouraged to use the consultation process to determine whether older state or local data is more appropriate than the most recently available U.S. Census[7].
- The congestion management process as developed, established, and implemented as part of the metropolitan transportation planning process shall include the establishment a coordinated program of data collection and performance monitoring To the extent possible, this data collection should be coordinated with existing data source (23 CFR 450.320(c)(3)
- Regional agencies are encouraged to use common data definitions, sources, and performance measures including but not limited to population, employment, housing estimates and projections, labor force ages, and VMT.

[6] SB 375 Chapter 728.

[7] Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008.

- If travel survey samples are limited for a given region MPO shall look into other available travel surveys, such as the National Household Travel Survey, American Community Survey, or trip rates associated with a region that is similar in size, demographic and socioeconomic characteristics. If funding is available, MPO can allocate investment in conducting a regional survey to study regional travel characteristics and patterns.
- As new technology and new data sources (i.e. "big data") become available, regional transportation agencies are encouraged consider ways to incorporated them into their analysis and modeling practices.
- *For additional guidance see the latest CARB, Methodologies for Review of GHG Reduction for SCSs Pursuant to SB 375.*

Model Calibration and Validation

Calibration is used to adjust the model parameters until the model matches observed regional travel demand. Validation involves testing the model's predictive capabilities (ability to replicate observed conditions (within reason)) before it is used to produce forecasts. The outputs are compared with observed or empirical travel data and the parameters are adjusted until the outputs fall within an acceptable range of error. Static validation tests compare the model's base year traffic volume estimates to traffic counts using statistical measures and threshold criteria.

- Since emission estimates are sensitive to vehicle speed changes, EPA and DOT recommend that areas using network-based travel models compare the speeds estimated in the validation year with speeds empirically observed during the peak and off-peak periods. The significant sensitivity of emissions to highway speeds emphasizes the need to monitor and maintain the ability of the transportation model to provide accurate speed estimates.[8]
- Every component of a model must be validated, as well as the entire model system[9].
- Nonattainment and maintenance areas using network-based travel models are encouraged by EPA and US DOT to establish criteria for updating the observed speed data that are used to validate the speeds predicted by the transportation model. The criteria should identify the schedule on which speed data will be collected given the pace of growth in the urban area, the magnitude of changes to the highway system, and any fundamental changes in speed-related conditions such as a change in the federal or the state's maximum speed limit.[10]
- At the TAZ level MPOs should check the average population and auto ownership per household. In addition, MPOs should evaluate auto ownership distributions, median income, average income distributions, age distributions and employment distributions by sector.
- Roadway network should be validated by facility type, and by speed limits. If a model has a transit network, it should be validated for frequency, and duration of travel time.
- Trip production and attraction rates should be compared with national research (e.g., NCHRP 716) to ensure that trip rates within reasonable range.

[8] Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008, page 9
[9] Travel Model Validation and Reasonableness Checking Manual second edition, page 1-6, September 24, 2010
[10] Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008, page 9.

- The average trip length by purpose should be validated both in terms of time and distance. In addition trip length frequency distribution should be validated with the observed data.
- Number of trips by mode and vehicle occupancy should be validated with the observed data.
- Transit ridership and transit trip length should be validated.
- Volume-to-count ratio – is computed by dividing the volume assigned by the model and the actual traffic count for individual roadways model-wide. It provides a general context for the relationship (i.e., high or low) between model volumes and counts.
- Percent of Links Within Caltrans Deviation Allowance – the deviation is the difference between the model volume and the actual count divided by the actual count. The Caltrans deviation thresholds recognize that allowances shrink as the count increases (i.e., lower tolerance for differences between the model volume estimates and counts).
- Correlation Coefficient – estimates the correlation (strength and direction of the linear relationship) between the actual traffic counts and the estimated traffic volumes from the model.
- Percent Root Mean Square Error (RMSE) – is the square root of the model volume minus the actual count squared divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model.

Static Validation Criteria and Thresholds

Validation Item	Criteria for Acceptance
Percent of links with volume-to-count ratios within Caltrans deviation allowance	To be reviewed
Correlation Coefficient	To be reviewed
Percent Root Mean Squared Error (RMSE)	To be reviewed

The table below specifies possible transit assignment validation criteria that can be applied to transportation models.

Transit Assignment Validation Criteria

Validation Item	Criteria for Acceptance
Difference between actual counts to model results for a given year by route group (i.e., Local Bus, Express Bus, etc.)	To be reviewed
Difference between actual counts to model results for a given year by Transit Mode (i.e., Light Rail, Bus, etc.)	To be reviewed

- Consider documenting key model validation statistics by reporting the correspondence of the model prediction for a validation year to empirical data.
- The Vehicle Miles Traveled (VMT) by facility type and by county should be compared against the observed data (e.g., HPMS or observed data)
- MPOs should backcast to previous base year of the model (e.g. 2008 and 2004) and compare to traffic counts, transit boardings and /or other characteristics.

(For additional guidance see, For additional guidance see, Federal Highway Administration, —The Travel Model Validation and Reasonableness Checking Manual,‖ Second Edition, September 2010 the latest CARB, Methodologies for Review of GHG Reduction for SCSs Pursuant to SB 375 Document.)

- MPOs shall develop roadway network based on actual geometry of roadways (including curvature and terrain). Link speeds are a key parameter in various steps of the travel demand model. MPOs shall consider parameters such as number of lanes, median type, shoulder width, availability of on-street parking, and adjacent land use type in estimating free-flow link speeds[1] Senate Bill 375, Chapter 728.[11].
- MPOs shall have minimum three trip purposes in the model: home-based work (HBW), home-based other (HBO), and nonhome-based (NHB) trips. However, it is encouraged to include more trip purposes such as home-based school(HBS), home-based university(HBU), home-based shopping (HBSh) and other trip purposes as appropriate. NCHRP 716[12]

The following requirements relate only to regional emissions analysis in serious, severe, and extreme ozone nonattainment areas and serious CO nonattainment their metropolitan planning area contains an urbanized area population over 200,000 (40 CFR 93.122(b).

- Estimates of regional transportation-related emissions used to support conformity determinations must be made at a minimum using network-based travel models according to procedures and methods that are available and in practice and supported by current and available documentation. These procedures, methods, and practices are available from DOT and will be updated periodically. Agencies must discuss these modeling procedures and practices through the interagency consultation process, as required by §93.105(c)(1)(i). Network-based travel models must at a minimum satisfy the following requirements (40 CFR 93.122(b)(1));
- Network-based travel models must be validated against observed counts (peak and off-peak, if possible) for a base year that is not more than 10 years prior to the date of the conformity determination. Model forecasts must be analyzed for reasonableness and compared to historical trends and other factors, and the results must be documented (40 CFR 93.122(b)(1)(i));
- Land use, population, employment, and other network-based travel model assumptions must be documented and based on the best available information (40 CFR 93.122(b)(1)(ii));
- Scenarios of land development and use must be consistent with the future transportation system alternatives for which emissions are being estimated. The distribution of employment and residences for different transportation options must be reasonable (40 CFR 93.122(b)(1)(iii));
- A capacity-sensitive assignment methodology must be used, and emissions estimates must be based on a methodology which differentiates between peak and off-peak link volumes and speeds and uses speeds based on final assigned volumes (40 CFR 93.122(b)(1)(iv));
- Zone-to-zone travel impedances used to distribute trips between origin and destination pairs must be in reasonable agreement with the travel times that are estimated from final assigned traffic volumes. Where use of transit currently is anticipated to be a significant factor in satisfying transportation demand, these times should also be used for modeling mode splits; and (40 CFR 93.122(b)(1)(v));
- Network-based travel models must be reasonably sensitive to changes in the time(s), cost(s), and other factors affecting travel choices (40 CFR 93.122(b)(1)(vi));

[11] Senate Bill 375, Chapter 728.
[12] NCHRP 716

- Reasonable methods in accordance with good practice must be used to estimate traffic speeds and delays in a manner that is sensitive to the estimated volume of travel on each roadway segment represented in the network-based travel model (40 CFR 93.122(b)(2);
- Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled (VMT) shall be considered the primary measure of VMT within the portion of the nonattainment or maintenance area and for the functional classes of roadways included in HPMS, for urban areas which are sampled on a separate urban area basis. For areas with network-based travel models, a factor (or factors) may be developed to reconcile and calibrate the network-based travel model estimates of VMT in the base year of its validation to the HPMS estimates for the same period. These factors may then be applied to model estimates of future VMT. In this factoring process, consideration will be given to differences between HPMS and network-based travel models, such as differences in the facility coverage of the HPMS and the modeled network description. Locally developed count- based programs and other departures from these procedures are permitted subject to the interagency consultation procedures of §93.105(c)(1)(i). (40 CFR 93.122(b)(3)).

Model Sensitivity Tests

Sensitivity testing is the application of the models and the model set using alternative input data or assumptions. Sensitivity testing of individual model components can include the estimation of the elasticities and cross-elasticities of model coefficients. However, sensitivity testing should also include the application of the entire model set using alternative assumptions regarding the input demographic data, socioeconomic data, or transportation system to determine if the model results are plausible and reasonable. [13]

Model sensitivity testing includes several important types of checks including both disaggregate and aggregate checks. Disaggregate checks, such as the determination of model elasticities, are performed during model estimation. Aggregate sensitivity testing results from temporal validation. Sensitivity testing can also include model application using alternative demographic, socioeconomic, transportation supply, or policy assumptions to determine the reasonableness of the resulting travel forecasts.[14] During sensitivity testing, reasonableness and logic checks can be performed. These checks also include the comparison of estimated (or calibrated) model parameters against those estimated in other regions with similar models. "Reasonableness and logic checks may also include "components of change" analyses and an evaluation of whether or not the models "tell a coherent story" as recommended by the FTA for New Starts analysis." *(Travel Model Validation and Reasonableness Checking Manual Second Edition, September 2010, 1-7)*

The output of sensitivity tests could include total VMT, mode share, number of person and vehicle trips by purpose, average trip length by mode, and transit boardings. Each MPO is encouraged to improve model sensitivity and accuracy related to measuring GHG emissions associated with both land use or transportation network decisions. However, the application of these quality control criteria will vary based on the size of the MPO, severity of non-attainment status, sophistication of transit system, degree of model sophistication, and the presence of pricing variables, among other characteristics.

The following inputs could be changed as part of sensitivity tests:

Highway Network

- Add or delete lanes to a link

[13] *Travel Model Validation and Reasonableness Checking Manual Second Edition, September 2010,* 1-5

[14] *Travel Model Validation and Reasonableness Checking Manual Second Edition, September 2010,* 1-5

- Change link speeds
- Change link capacities

Land use

- Residential and employment density (households and number of jobs)
- Proximity to transit
- Regional accessibility
- Land use mix

Pricing

- Increase/Decrease auto-operating costs
- Increase/Decrease parking price
- Increase/Decrease toll rates

Demand Management

- Increase/Decrease telecommute
- Increase/Decrease vanpooling
- Change HOV Lanes/policy

Transit

- Increase/Decrease transit fares
- Increase/Decrease transit capacity - (BRT, Express bus, Regular bus, and a combination of all bus types)
- Increase/Decrease transit frequency

Socioeconomic

- Change in demographics
- Change in economic growth
- Household income distribution

(For additional guidance see Federal Highway Administration, The Travel Model Validation and Reasonableness Checking Manual,‖ Second Edition, 10.2 Sensitivity Testing September 2010, the latest CARB, Methodologies for Review of GHG Reduction for SCSs Pursuant to SB 375 Document, the Recommendations RTAC Pursuant to SB 375, September 2009.)

Calculating Vehicle Miles Traveled (VMT)

Vehicle-miles traveled (VMT) are key data for highway planning and management, and a common measure of roadway use. Regional transportation agencies use VMT, along with other data, in estimating congestion, air quality, and potential gas-tax revenues. MPOs also use VMT or VMT stratified by speed as inputs in the development of SCSs, NEPA and CEQA (SB 743) documents, and for purposes other than development of RTPs.

In all areas not otherwise subject to 40 CFR 93.122 (b), regional emissions analyses must use those procedures described in paragraph 40 CFR 9.2122 (b) if the use of those procedures has been the previous practice of the MPO. Otherwise, areas not subject to paragraph (b) may estimate regional emissions using any appropriate methods that account for VMT growth by, for

example, extrapolating historical VMT or projecting future VMT by considering growth in population and historical growth trends for VMT per person. These methods must also consider future economic activity, transit alternatives, and transportation system policies (40 CFR 93.122(c)).

Performance Indicators

Performance indicators are critical for tracking the progress of SCS. ARB staff analyze performance indicators to determine whether they provide supportive, qualitative evidence that the SCS could meet its GHG targets. Performance indicators should be related to strategies used in the plan. *(See the Recommendations of the RTAC Pursuant to SB 375 pp. 44-46 and the latest CARB, Methodologies for Review of GHG Reduction for SCSs Pursuant to SB 375 Document)*

Co-benefits of SCS

MPOs are encouraged to quantify, to the extent possible, the co-benefits associated with the achievement of their greenhouse gas reduction targets, as a means of increasing public understanding and support. MPOs should also promote the development and use of planning models that can accurately estimate the potential global warming and co-benefits of various land use scenarios in the development of the targets and the SCS. Co-benefits include the following:

- Increased Mobility: Congestion relief, more transportation choices, reduced commute time, and increased productivity.
- Economic Benefits: Traveler savings, taxpayer savings, neighborhood economic development, and lower up-front infrastructure costs.
- Reduced Air and Water Pollution: Less air pollution and improved water supply and quality.
- Conservation of Open Space, Farm Land and Forest Land: These resources are capable of sequestering carbon in plant and tree matter as well as in soil. Small parks can obviate the need for automobile trips.
- Healthier, More Equitable and Sustainable Communities: More opportunities for active lifestyles, less dependence on foreign oil, improved safety, greater housing choices, and more equitable communities.

(See the Recommendations of the RTAC Pursuant to SB 375 pp. 42-44 for addition guidance)

Documentation

- Interagency consultation procedures shall also include the following specific processes (40 CFR § 93.105(c)). (7) A process for providing final documents (including applicable implementation plans and implementation plan revisions) and supporting information to each agency after approval or adoption. This process is applicable to all agencies described in paragraph (a)(1) of this section, including Federal agencies.
- Consider documenting TDMs, regional economic and land use models (if applicable), including all statistical goodness-of-fit measures derived from sub-model specification and placed on the agency's website.
- Consider including documenting a comprehensive list of output metrics and to the extent practical, the potential uses for each metric. Also consider document model limitations and how they were identified and addressed with the post-processing model results.
- Consider documenting sensitivity testing.

- MPOs shall approve transportation plan contents and supporting analyses produced by a transportation plan update (23 CFR 450.322(e))
- MPOs shall disseminate the methodology, results ,and key assumptions of whichever travel demand model it uses in a way that would be usable and understandable to the public (Gov. Code 14522.1(a)).
- If an off-model strategy is used to reduce GHG emissions, the MPO should document the modeling assumptions and methodology used in quantifying the reductions in GHG emissions. The document should also identify the relevant literature and data sources. *(for more guidance see, "CARB, Off-Model Strategies Adopted by California's in Sustainable Communities Strategies as of April 29, 2016, http://www.arb.ca.gov/cc/sb375/mpo_off-model_strategies.pdf)*

(For additional guidance see, California Air Resource Board, the latest CARB, Methodologies for Review of GHG Reduction for SCSs Pursuant to SB 375 Document. Also see the Recommendations of the RTAC Pursuant to SB 375, Travel Model Assessment and Documentation, page 18)

Model Peer Review / Peer Advisory Committee

Transportation agencies are encouraged to have an on-going model improvement programs that support model calibration and validation activities by focusing on increasing model accuracy, policy sensitivity, and data development and acquisition programs.

Best Practices

- Transportation modeling agencies are encouraged participate in statewide, regional, and local modeling forums and users groups as a way to share ideas, review model inputs and methodologies, and coordinate modeling activities.
- Furthermore each agency is encouraged to formally seek out peer reviews from Californian transportation modelers including other agencies of similar size during model development and during forecasting at least every 10 years or after a major modeling enhancement. In addition to the review by peers, agencies are also encouraged to utilize FHWA's Travel Model Improvement Program peer review process.
- MPOs are encouraged to establish expert peer advisory teams review the SCS MPOs methodologies prior to State Air Resource Board submission. *(See the Recommendations of the RTAC Pursuant to SB 375, Model Improvement Program, page 19 and Expert Consultation page, 13, and State Agency Interaction, page14.).*
- MPOs should describe how they plan to improve the regional model based on comments received from previous model update.
- MPOs are encouraged to use the FHWA/FTA certification review to verify that the travel forecasting methods they are using support the applications they are used for.
- Transportation agencies are encouraged have an on-going model improvement program to focus on increasing model accuracy and policy sensitivity, including on-going data development and acquisition programs in support of model calibration and validation activities.

Best Management Practices

The RTAC recommended the development of the Best Management Practices List supported by the scientist literature and relevant case studies, where feasible and supported by data, the list should include elasticities associated with BMP. Minimally, ARB is encouraged work with the land use and transportation technical experts to identify a range or general scale of the possible GHG benefits of the policies and practices identified in the BMP list. The "Best Management

Practices (BMP)" List consist of comprehensive list of land use and transportation policies and practices that result in regional GHG reductions. The BMP spreadsheet tool would be used to assist in determine the approximate level of reduction that would be achieved by implementing a particular policy or set of strategies in a particular setting. *(For more information see the Recommendations of the RTAC Pursuant to SB 375, September 2009)*

3.5 RTP Modeling Improvement Program

Analysis and modeling technologies change over time, therefore it is important that state, local, and air quality planners evaluate existing transportation modeling capabilities and access future modeling needs. The following program of improvement takes into account such factors as the size and available resources of the regional transportation agencies and consider all modeling related to the development of RTPs, including air quality conformity and SB 375, SCS analysis. See the next section (3.6 RTP Travel Analysis Groupings) for the delineation of federal and state law requirements and recommendation for MPOs and RTPAs. It is important to note that pursuant to California Government Code Section 14522.2(b), transportation planning agencies that are not federally designated MPOs are encouraged, but not required, to utilize travel demand models that are consistent with the guidelines in the development of their regional transportation plans.

These Improvement Program Best Practices are cumulative.

- ***Counties with attainment Air Quality (AQ), slow growth in population and jobs, little or no congestion, and no significant capacity-enhancing projects or limited transit expansion plans or areas of non-attainment due to transport.***

These counties do not need to run a network travel model. Road congestion is not increasing rapidly. Emission changes from higher miles per gallon vehicles can be factored or derived from the ARB inventory.

- **Regions with attainment AQ, slow to moderate growth, small population, and no urbanized area or transit having more than a minimal potential impact on VMT, plus rural isolated non-attainment areas due to transport.**

Travel Demand Models:

- If using a three-step model, consider running a reasonable convergence towards equilibrium.
- TAZ structure is important for any travel demand model and it should contain homogenous land use as much as possible. The average population in each TAZ should be between 1200 and 3000 and it should not generate more than 15000 person trips per day. The average size of each TAZ should be between 0.25 and 1 square miles NCHRP 716.
- MPOs shall develop roadway network based on actual geometry of roadways (including curvature and terrain). Link speeds and capacity are key parameters in various steps of the travel demand model. MPOs shall consider parameters such as number of lanes, median type, shoulder width, availability of on-street parking, and adjacent land use type in estimating free-flow link speeds and capacity.
- If MPO uses a gravity model in trip distribution step, different friction factor should be used for each trip purpose. For example, home-based school trips should consider school district areas in developing the friction factors and should be calibrated based on the local household travel survey

- MPOs shall have minimum three trip purposes in the model: home-based work (HBW), home-based other (HBO), and nonhome-based (NHB) trips. However, it is encouraged to include more trip purposes such as home-based school (HBS), home-based university (HBU), home-based shopping (HBSh) and other trip purposes as appropriate.
- The models shall account for the effects of land use characteristics on travel, either by incorporating effects into the model process or by post-processing.
- Each MPO model shall include auto operating cost in forecasting the travel. Auto operating cost is a key parameter in various steps of the travel demand model. Auto operating cost shall consist of fuel (primarily gasoline) cost and non-fuel-related costs, including repair, maintenance, tires, and accessories. This shall also include the effective fuel efficiency of the vehicle fleet.
- For models with a mode choice step, if the travel demand model is unable to forecast bicycle and pedestrian trips, another means shall be used to estimate those trips.
- The models shall have sufficient temporal resolution (at least three time period) to adequately model peak and off-peak periods.
- MPOs should consider using different friction factors for each trip purpose. For example, home-based school trips should consider school district areas in developing the friction factors and should be calibrated based on the local household travel survey.
- MPOs should consider developing a logit based destination choice model as part of trip distribution step.
- Consider including percentage share of all trips (work and non-work) made by all single occupant vehicle, multiple occupant vehicle, or carpool, transit, walking, and bicycling in the measures of means of travel.
- To the extent practical, consider calibrating using the most recent observed data including household travel diaries, traffic counts, gas receipts, Highway Performance Monitoring System (HPMS), transit surveys, and passenger counts.
- For models with a mode choice step, if the travel demand model is unable to forecast bicycle and pedestrian trips, consider another means to estimate those trips.
- Consider including speed and frequency, days, and hours of operation of service as inputs when modeling the transit mode.
- Represent the entire regional transit network when modeling the transit mode.
- Consider using models that account for the effects of land use characteristics on travel, either by incorporating effects into the model process or by post-processing.[15]
- Consider augment current models (as necessary) with other methods to achieve reasonable levels of sensitivity
- Mode choice model should be segmented by vehicle availability or household income.
- In mode choice step, walk and drive access to transit should be explicitly represented. In calculating the duration of a transit trip should include, walk time, drive time, wait time, and in-vehicle travel time NCHRP 716.[16]

[16] NCHRP 716

- MPO models shall account for the effects of land use characteristics on travel, either by incorporating effects into the model process or by post-processing.[17]
- Apply post-processing to adjust model outputs where the models lack capability, or are insensitive to a particular policy or factor. The most commonly referred to post-processor is a "D's" post-processor, but post-processors could be developed for other non-D factors and policies, too.*)*

Visualization Technics and Sketch Modeling of Scenarios

- Consider developing GIS capabilities that lead to simple land use models.
- Consider entering all natural resources data into the GIS.
- Consider developing parcel data and creating a land use data layer.
- Consider addressing changes in regional demographic patterns.

Policy analysis capabilities:

- Can define and evaluate trend forecast, combined general plans, and preferred RTP.
- These models can be used to evaluate increased density and mix, urban growth limits, and improved neighborhood walkability and bikeability.

- **Regions with moderate to rapid growth, non-attainment AQ, or the potential for transit to significantly reduce VMT.**

All the Best Practices of the regions above.

- Vehicle ownership model shall be developed and used. Vehicle ownership model is critical to determine the number of motor vehicles available for use by household members. MPOs shall consider variables such as household size, income, number of workers, types of housing units, residential and employment density, and access to transit and non-motorized transport as part of vehicle ownership model.

Travel Demand Models:

- Regions are encouraged to develop 4-step travel models and use post-processing...
- Consider running the travel model set to a reasonable convergence towards equilibrium across all model steps.
- Mode choice model should be segmented by vehicle availability or household income.
- Consider sufficient temporal resolution when modeling peak and off-peak periods.
- Agencies are encouraged to investigate their model's volume-delay function and ensure that speeds outputted from the model are reasonable.
- Consider using several employment types along with several trip purposes.

Visualization Technics and Sketch Modeling of Scenarios:

- Consider using an urban scenario model to calculate environmental impacts on terrestrial and aquatic ecosystems and/or inform the land use model of areas to be avoided in order to help locate alternative development.

Regional Economic & Land Use Model:

- Consider developing economic, market-based land use models that recognize the effects of transportation on development location.

Freight Model:

- Consider developing a simple freight model.

Policy analysis capabilities:

- More policy scenarios can be run. The same policies the region(s) above could be run, plus one or more transit improvement proposals, as well as demand management, pricing strategies, and housing affordability.
- In addition to the policies and performance measures these agencies can evaluate policies for their effects on lower-income households. This can be done by evaluating traveler welfare measures based on the mode choice log sums for each household income class, or based on travel costs for them.

- **Regions that are nonattainment in ozone or CO, with a metropolitan planning area containing a population over 200,000.**

All the Best Practices of the regions above.

Travel Demand Models:

- Consider developing a four-step models with full feedback across travel model steps and some sort of land use modeling.
- In addition to the conformity requirements, consider adding an auto ownership step and make this step and the mode choice equations for transit, walking and bicycling and the trip generation step sensitive to land use variables and transit accessibility.
- Consider explicitly representing walk and bike modes.
- Consider using small Traffic Analysis Zones (TAZ) to increase sensitivity to infill potential near to rail stations and in Bus Rapid Transit (BRT) corridors. Also, consider parking quantity and cost in the travel model.
- Consider including the carpool mode along with access-to-transit sub modes.
- In mode choice step, walk and drive access to transit should be explicitly represented. In calculating the duration of a transit trip should include, walk time, drive time, wait time, and in-vehicle travel time.
- Time of day model should be developed and used to allocate daily trips. This will help to understand the temporal distribution of trips in a region.
- Vehicle occupancy rate should be varied based on the trip purpose and time of day
- Consider using feedback loops to take into account the effects of corridor capacity, congestion and bottlenecks on mode choice, induced demand, induced growth, travel speed and emissions.

Regional Economic & Land Use Model:

- Consider implementing simple land use models that recognize the effects of transportation on development location and density and develop formal economic land use models.
- Consider using travel costs or mode choice log sums for simple environmental justice analysis. Examples of such analyses include the effects of transportation and

development scenarios on low-income or transit-dependent households, the combined housing/transportation cost burden on these households, and the jobs/housing fit.

- Consider developing models that test joint (or simultaneous)-choice of mode and destination.
- Consider collecting floor space rent data in the case where an agency is anticipating development of an integrated economic/land use (or microeconomic land use) model.

Freight Model:

- Consider implementing freight or commodity flow models.

Policy analysis capabilities:

- A full range of performance and impact measures could be developed, for economic, environmental, and equity effects, as required by FAST Act, National Environmental Policy Act, CEQA, and other laws. Traveler welfare could be measured and, if possible, locator welfare. Various measures of economic development could also be created, such as wages, jobs, production, and exports.
- **The largest MPOs with rapid growth, large population centers and established transit systems.**

All the Best Practices of the regions above.

Travel Demand Models:

- MPOs are encouraged to transition to activity-based TDM
- Technology is significantly influencing the travel behavior. Many times technology may substitute for travel and sometimes it may lead to more travel. Travel demand model should be capable of reflecting the interactions between technology and travel behavior.

Regional Economic & Land Use Model:

- Consider building formal microeconomic land use models to analyze and evaluate the effects of growth scenarios on economic welfare (utility), including land prices, home affordability, jobs-housing fit, the combined housing-transportation cost burden, and economic development (wages, jobs, exports).
- Consider integrating land use and activity-based models into a single modeling system – integrated land use/transportation model that would allow planners to study the interactions between land use and the transportation system. ("Jobs-housing fit" is the extent to which the rents and mortgages in the community are affordable to the people who currently work there or will fill anticipated jobs).
- MPOs are encouraged to investigate and developed, if feasible micro-simulation of households and firms.

Freight Model:

- Consider incorporating freight movement into the travel demand process.
- Consider using information from the statewide freight model, local trip-based truck demand models, or commodity flows models when available.
- Consider commercial movements with truck and van tours could be accommodated in a commodity flow model.

- Consider documenting assumptions about freight growth and mode choice that impact truck VMT.
- MPOs are encouraged to coordinated freight data collection programs with coordination with statewide efforts.

Data:

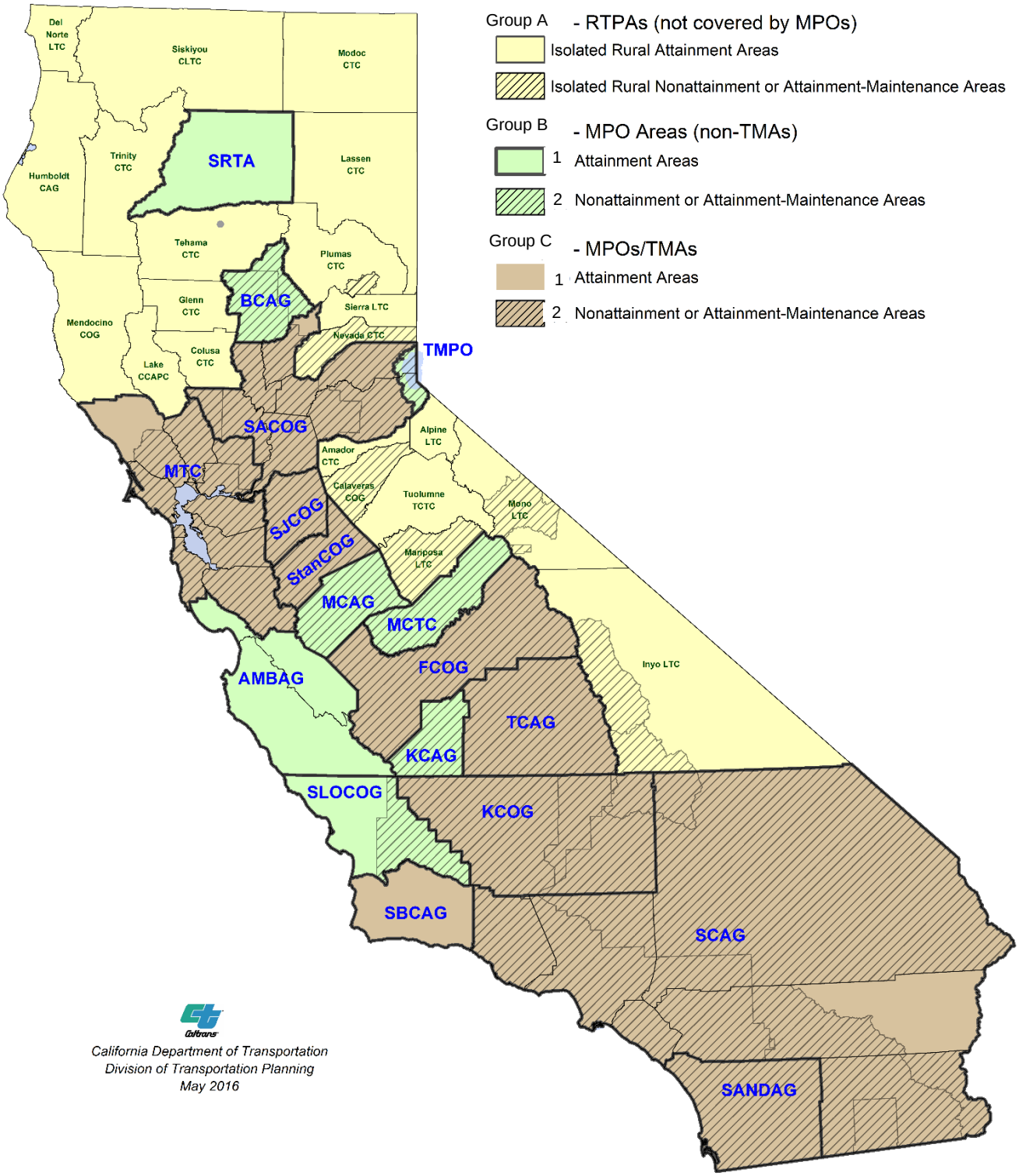
- Household travel surveys could be activity-based and include a tour table. GPS sampling is encouraged or extra emphasis should be placed on accurate geocoding of households, workplace locations, and stops. Regions are encouraged to take care in the design and data collection procedures of the survey to ensure survey results are appropriate to the type of model being utilized. Coordination with Caltrans' travel survey efforts is encouraged.
- Stated preference surveys of households and firms could be performed, as necessary, for use in location choice models.

Policy analysis capabilities:

- Integrating land use modeling with transportation demand modeling can simulate the complex interactions of proposed changes in land use, economic, and transportation systems. Equity analysis could include change in welfare by household income class. Economic development impacts may be comprehensively evaluated with this model set. Time-of-day road tolls can be evaluated.
- Agencies can take transit capacity constraints into consideration to derive operating scenarios that avoid overcrowded buses and trains. The amount of transit service thus derived will advise policy makers on needed transit capital and operating funding levels.

3.6 RTP Travel Analysis Groupings

MPOs, RTPAs, and CMAs are organized into travel analysis groups based on federal and state laws. It is important to note that the requirements and recommendations are cumulative (e.g., Group C (1) is subject to all requirements and recommendations of Groups A, B (1 and 2), & C (1 and 2)).



Group A RTPAs (not covered by a MPO)

This group includes both isolated rural attainment and isolated rural nonattainment and attainment-maintenance areas.

Requirements (Shalls)
Federal: None

State: Transportation planning agency designed under California Government Code sections 29532 or 29532.1 are required prepare and adopted a RTP that consider factors specified in 23 USC 134 (Gov. Code, § 65080 (a)).

c) Each transportation planning agency may also include other factors of local significance as an element of the regional transportation plan, including, but not limited to, issues of mobility for specific sectors of the community, including, but not limited to, senior citizens Gov. Code, § 65080 (b)(2)(4)(C)(c).

The RTP is required to be internally consistent and include a policy element that describes regional transportation issues, identifies and quantifies regional needs, and describes the desired short and long range transportation goals, objectives, and policy statements (Gov. Code, § 65080 (b)(1)).

Recommendations (Shoulds):

Federal: None

State: Transportation planning agencies other thank those identified in paragraph (1) of subdivision (a) of Section 14522.1, cities, and counties, are encouraged , but not required, to utilized travel demand models that are consistent with the guidelines in the development o of their RTPs.(Gov. Code, § 14522.2(b)).

Transportation planning agencies (over 200,000 pop.) may set indicators for measuring mobility, traffic congestion, means of travel, measures of equity and accessibility and may prepare an "Alterative Planning Scenario" for presentation to local officials, agency board members, and the public during the development of the triennial regional transportation plan and the hearing (Gov. Code, § § 65080 (b)(1)), 65080.3(a)).

Group B MPOs – Non TMAs

(1) Attainment Areas

Requirements (Shalls)
Federal: All Group A requirements.

MPOs are required to use visualization techniques as part the public participation plan, RTP, and TIP development that are usable and understandable to the public (23 CFR 450.316 (a)(1)(iii)).

MPOs are required to develop RTPs that address a minimum of 20-year horizon, include both long and short-range strategies/actions that lead to the development of an integrated multimodal transportation system that facilitates the safe and efficient movement of people and goods, and address current and future transportation demand (23 CFR §450.322(b)).

MPOs in attainment areas are required to review and update the RTP at least every 5 years to confirm the plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to a minimum 20-year horizon (23 CFR §450.322(c)).

Title 23 Code of Federal Regulations part 450.322(e) requires MPOs, the State, and the public transportation operators to validate data utilized in preparing other existing modal plans for providing input into the RTP. MPOs are also required to base their updates the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity and to approve the plans contents and supporting analysis produced by the plans update.

The RTP is required to include the projected transportation demand of persons and goods in the MPA over the period of the plan (23 CFR 450.322(f)(1)). Each RTP is required to meet federal conformity before the plan is approved by the MPO or accepted by DOT (40 CFR §93.104). MPOs are required to base the analysis on the most recent planning assumptions in force at the time the conformity analysis begins. If new data that become available (after the analysis begins) they are required to use it for the conformity determination only if a significant delay in the analysis has occurred (as determined through interagency consultation) (40 CFR §93.110(a)). The assumptions are required to be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other agency authorized to make such estimates and approved by the MPO. The conformity determination must also be based on the latest assumptions about current and future background concentrations (40 CFR §93.110(b)).

Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105 (40 CFR §93.110(f)). MPOs are required use the latest emissions estimate model to for conformity determination (40 CFR §93.111(a)).

State: All Group A requirements.

MPOs are required to disseminate the methodology, results, and key assumptions of whichever travel demand models it uses in a way that would be useable and understandable to the public (Gov. Code, .§ 14522.2 (a)).

Gov. Code 65080((b)(1). Transportation planning agencies with populations over may quantify the following set of indicators with the policy element of their RTP. (A) Measures of mobility and traffic congestion, including, but not limited to, daily vehicle hours of delay per capita and vehicle miles traveled per capita.(B) Measures of road and bridge maintenance and rehabilitation needs, including, but not limited to, roadway pavement and bridge conditions. (C) Measures of means of travel, including, but not limited to, percentage share of all trips (work and non-work) made by all of the following: (i) Single occupant vehicle; (ii) Multiple occupant vehicle or carpool; (iii) Public transit including commuter rail and intercity rail; (iv).Walking;(v) Bicycling. (D) Measures of safety and security, including, but not limited to, total injuries and fatalities assigned to each of the modes set forth in subparagraph (C). (E) Measures of equity and accessibility, including, but not limited to, percentage of the population served by frequent and reliable public transit, with a breakdown by income bracket, and percentage of all jobs accessible by frequent and reliable public transit service, with a breakdown by income bracket. (F) The requirements of this section may be met utilizing existing sources of information. No additional traffic counts, household surveys, or other sources of data shall be required.

Gov. Code 65080(b)(2)(B): (B) Each metropolitan planning organization shall prepare a sustainable communities strategy, subject to the requirements of Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal Regulations, including the requirement to utilize the most recent planning assumptions considering local general plans and other factors. The sustainable communities strategy shall (i) identify the general location of uses, residential densities, and building intensities within the region, (ii) identify areas within the region sufficient to house all the population of the region, including all economic segments of the population,

over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth, (iii) identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Section 65584, (iv) identify a transportation network to service the transportation needs of the region, (v) gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Section 65080.01, (vi) consider the state housing goals specified in Sections 65580 and 65581, (vii) set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the state board, and (viii) allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Sec. 7506).

MPOs are required to include SCS within their RTPs and to adopt a SCS or APS public participation plan (PPP) that is consistent with the agencies' adopted Federal PPP (Gov. Code, § § 65080(b)(2), 65080 (b)(2)(F)).

Prior to adopting a SCS, the MPO shall quantify the reduction in GHG emissions projected to be achieved by the SCS, and set forth the difference, if any between the amount that reduction an d the target for the region established by the state board (*Gov. Code* § *65080(b)(2)(H))*

Recommendations (Shoulds):

Federal All Group A (1) recommendations.

The degree of the consideration and analysis of the planning factors (40 CFR §450.306(a)) should be based on the scale and complexity of the many issues, including transportation system development, land use, employment, economic development, and human and natural environment, and housing and community development 40 CFR §450.306(b)).

MPOs may update or revise their RTPs at any time (23 CFR 450.322(c)).

MPOs may consider to include projects and strategies that address areas or corridors where current or projected congestion threatens the efficient function of key elements in the metropolitan area's transportation system (23 CFR 450.322(f)(5)).

State: All Group A recommendations.

(2) Nonattainment and Attainment Maintenance Areas

Requirements (Shalls)

Federal: All Group A and B (1) requirements.

MPOs in nonattainment and maintenance areas are required to review and update their RTPs at least every 4 years to confirm the plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to a minimum 20-year horizon (23 CFR §450.322(c)).

MPOs designated as nonattainment are required to coordinate the development of the RTP with the process for developing transportation control measures in the State Implementation Plan (23 CFR 450.322(d)).

State: All Group A and B (1) requirements.

Group C Federally recognized MPOs/ (TMAs)

(1) Attainment Areas

Requirements (Shalls)
Federal: All Group A and B (1 & 2) requirements.

The transportation planning process within a TMA is required to address congestion management through a process that provides for the safe and effective integrated management and operation of the multimodal transportation system (23 CFR §450.320(a)).

MPOs/TMAs are required to develop, establish, and implement the CMP as part of their transportation planning process (23 CFR 450.320(c)) and establish a coordinated program for data collection (23 CFR 450.320(c)(3)).

State: All Group A and B (1 & 2) requirements.

Recommendations (Shoulds)
Federal: All Group A and B (1 & 2) recommendations. To the extent possible, TMA's data collection programs should be coordinated with existing data sources, archived operational/ITS data, and coordinated with operations managers in metropolitan areas (23 CFR 450.320(c)(3)).

State: All Group A and B (1 & 2) recommendations.

(2) Nonattainment and Attainment Maintenance Areas

Requirements (Shalls)
Federal: All Group A, B (1 & 2), and C (1) requirements.

In MPOs/TMAs designated as nonattainment, the CMP is required to provide an appropriate analysis of reasonable (including multimodal) travel demand reduction and operational management strategies for the corridor in which a project that will resulting in a significant increase in capacity for SOVs is proposed to be advanced with Federal funds (23 CFR 450.320(e)).

State: All Group A, B (1 & 2), and C (1) requirements.

Recommendations (Shoulds)
Federal: All Group A, B (1 & 2), and C (1) recommendations.
State: All Group A, B (1 & 2), and C (1) recommendations.

3.1 Transportation Modeling/Projecting Future Demand

Modeling is one method of forecasting future demands on the transportation system, and is an important source of information used to analyze various transportation alternatives. Typically the larger MPOs have the staff expertise and funding to conduct their own modeling. Smaller MPOs and RTPAs typically use consultants or rely on a review of existing documents. Current FHWA and FTA planning regulations require only that the MPO have an analytical process in place for evaluating projects and transportation conformity regulations require that areas with significant air quality problems that exceed minimum population levels must meet specific modeling requirements (Sections 3.2 through 3.4).

Travel demand models are statistical and algorithmic attempts to predict human travel behavior. They endeavor to forecast potential outcomes of various transportation scenarios. Travel demand models provide essential information about the region's transportation system operations, conditions and performance and they are used to predict future transportation needs. Typical factors that are included in travel demand models are a region's demographic profile, general plan designations, highway and transit networks, distribution of trips and existing travel patterns including morning and evening peak hour travel demand, trip generation, and split among automobile (Single Occupancy Vehicle and High Occupancy Vehicle), transit, bicycle, and pedestrian modes of travel.

Travel demand models are used to evaluate the implications of alternative travel patterns and their implications before a regional transportation plan is adopted. California Government Code Section 65080(b)(1) gives MPOs with a population of over 200,000 the option to quantify various indicators of their regional transportation needs. These models are also used to conduct special studies, such as a corridor study that would assess the potential impacts of a new freeway or transit line.

The federal government periodically reviews the policies and practices of regional agencies, including an assessment of the travel demand models used in the development of regional transportation plans.

Assumptions play a key role in the assessment of all travel modeling efforts. Three key assumptions are typical of transportation demand models:

(1) Key characteristics of the system can be described in terms of quantifiable variables (e.g., number of automobiles per household, household size, etc.);

(2) That a relationship between the variables described and behavior exists (e.g., the more automobiles per household, the greater the number of automobile trips per household); and,

(3) Relationships between the variables can be expressed in quantitative terms. This relationship is assumed constant over time. Discrete population groups are often identified to help better understand the relationship between demographic and economic characteristics, such as age, income, gender, employment, and travel behavior.

Model results are only as good as the data that go into the model. MPOs must use the most current household travel surveys, demographic, socio-economic and census data available, especially if the region is growing rapidly. The most current household travel survey will provide

~~key inputs on travel behavior such as the trip characteristics and trip rates to the four-step models and tour/activity-based models.~~

~~Described below is the traditional four-step process for modeling transportation demand. For the past 40 years, transportation professionals have used a four-step approach in modeling transportation demand. Most modeling approaches still use some form of these steps today. Once some understanding has been established as to what the land use, population, and employment levels are in a study area, the four modeling steps are:~~

~~**Trip generation:** Estimates the number of trips generated in a zone or at a particular location, and attracted to a zone or a particular location, based on the assumed relationship among socio-economic factors, land use characteristics, and the number of trips. Trip generation, then, leads to:~~

~~**Trip distribution** Estimates the number of trips that originate in every zone in the study area, linked to destinations in every other zone. The result is a trip table that is used in:~~

~~**Mode split:** Estimates, for the number of trips predicted between each origin and destination, the number of trips made via each type of mode that is available for that trip. Thus, "x" percent are likely to drive alone, "y" percent are likely to take transit, "z" percent are likely to ride-share, etc. Mode split leads to:~~

~~**Network assignment:** Estimates the number of trips via a particular mode that will take specific paths through a road or transit network. The result, when all trips are assigned to a network, is an estimate of the total number of trips, by mode, that will use each link in the network. When compared to the capacity of this link, planners can forecast future conditions, such as the level of congestion that will occur at that location on the highway system or the ridership for specific transit lines. This becomes the basis for assessing the performance of the transportation system.~~

~~Four-step models are commonly used to predict the demand for transportation services. More sophisticated four-step models will include some form of feedback loop to provide traveler reaction to the state of the network and will redistribute trips based on the feedback outputs. Transportation planners and engineers also use other types of models to analyze and evaluate the performance of transportation systems and resulting impacts. Impact models determine the likely effects that constructing and operating transportation facilities will have on the surrounding environment and community. For example, planners often use air quality models, noise models, and community impact models in analyzing transportation alternatives. Cost models estimate the likely costs of transportation facilities and services. For example, cost models estimate the unit cost per component of a facility (e.g., dollars per linear foot of rail line), and multiply this by the estimated number of units needed. Most recent cost-modeling approaches incorporate a life cycle costing perspective that requires the planner to estimate costs, both capital and operating, for a potential project over the expected life of that project.~~

~~For years, MPOs have considered how best to account for the interactions between transportation investment decisions and land development patterns. Various forms of land use models are now part of the modeling process for analysis of growth, growth allocation, and the implications of land use impacts resulting from land use policy decisions. Integrating land use and transportation is expected to become a major part of the advances in transportation modeling practice. New modeling processes and techniques focus on the need to improve current MPO/RTPA travel modeling capabilities, particularly in terms of understanding the land~~

~~use-transportation connection, broadening mode choice, accounting for goods movement and enhancing transportation alternatives assessment.~~

~~Additional research and development attention is being directed to tour/activity-based modeling, an approach which is believed to be a significant advance over the traditional trip-based modeling approach. Tour/activity-based models better recognize the complex interactions between activity and travel behavior. These models require more information on travel activity, particularly travel time, focusing on the trip chains and the sequences of activities in the chain, and need more detailed data on person and household travel characteristics. These models also require significant time investments in data assembly and model development and resources, which are major challenges typically best addressed by the largest MPOs. Because of these formidable challenges, only a handful of major MPOs across the country are in the relatively early stages of tour/activity-based model development and/or implementation. The mainstream and the state-of-the-practice in travel demand modeling still remains the traditional 4-step trip-based models. However, there are significant add-ons and enhancements to this approach that can improve our land use/transportation assessment capabilities.~~

~~For now, the development of tour/activity-based transportation models is recommended for only the largest MPOs in serious and above non-attainment areas, rather than applying this tool to small and medium size MPOs and RTPAs. One reason to not require all MPOs to immediately develop tour/activity-based models is that these models are still relatively new, and they will be refined and improved as early adopters use them. A phased transition to tour/activity-based modeling will allow MPOs with fewer resources to benefit from additional advances in the state of the practice realized by the largest MPOs.~~

~~In tour/activity-based models, travel choices for trips within a trip chain, or tour, are not treated as independent of one another. A tour-based model is agent-based; that is, both households and individuals are modeled, interpersonal household constraints on vehicle usage are modeled, and the auto passenger mode is modeled as a joint decision between the driver and passenger(s) to ride-share. Each person is assumed to choose the "best" combination of modes available to execute each tour, subject to auto availability constraints that are determined at the household level. The household's allocation of resources (i.e., cars to drivers and drivers to ride-sharing passengers) is based on maximizing overall household utility, subject to current household resource levels. Therefore, tour-based models provide both trip chaining (tour) and multi-modal trip level analysis.~~

~~Compared to Four-Step models, Tour/Activity-based models:~~

- ~~Provide improved explanation of the variations in travel behavior of a larger cross section of population across demographic and spatial groups.~~
- ~~Eliminate "Non-Home Based Trips." Because the Non-Home Based trips are almost always part of a chain of trips that starts or ends at the trip maker's place of residence or work they will become a part of those trip chains.~~
- ~~Improve accountability of causes and impacts of travel and transportation investments.~~

~~Tour-based models assume that a list of activities leads to travel; Activity-based models assume that a list of activities *mostly* leads to travel, and:~~

- ~~More personal time and activity is simulated~~
- ~~Telecommuting and e-commerce can be considered~~
- ~~More data on intra-household interactions and time schedules are required~~

The goal of applying transportation models and analytical techniques, as part of the RTP process, is to enhance the quality of information and analysis presented to educate public decision makers and the public at large to better understand the implications of various policy options, while recognizing that the final decisions on policy choices are their responsibility.

Performance Measures

The term Performance Measures is used to cover a variety of quantitative measures. Modeling performance measures are those developed to analyze future year scenarios using a transportation, land use, sketch or other future modeling tool. Other performance measures track progress toward a goal. These tracking performance indicators monitor VMT or emissions using observed rather than modeled data, derived from tools such as traffic counters and monitoring stations. *(See* SB 375 Regional Targets Advisory Committee (RTAC) Final Report *pp. 44-46 for additional guidance [Reference 9])*

Requirements (Shalls)
Federal: None
State: None

Recommendations (Shoulds)
Federal: None
State: California Government Code Section 65080(b)(1) gives MPOs with a population of over 200,000 the option to quantify various indicators of their regional transportation needs.

3.2 RTP Modeling Requirements and Recommendations

Each MPO should develop a multi-year program of improvements needed to address any needed modeling capabilities, including, as applicable, incorporation of relevant housing affordability and other social equity factors. Such improvements should educate decision-makers and the public regarding how such options would potentially affect trip making, choice of travel modes, VMT, land use plans, equity, housing affordability, greenhouse gas and quality of life issues. Improvements should describe the basic change which would be made to the MPO travel demand model, identify what data would be required to support the improvement, provide order-of-magnitude cost estimates, and identify any phasing issues or dependencies on other projects in the program. The program of improvements should account for the California Air Resources Board's (ARB) and others' need to compare the modeling outputs from all the regions in the State by proposing improvements to provide model methodology, results, and key assumptions in a way that is easily understood by the general public.

Phasing of the improvements should address the following timeframes: 1) what improvements might be implemented in time to affect an MPO-proposed greenhouse gas emissions reduction target; 2) what improvements are possible to implement before the first SCS/APS development by the MPO; 3) what improvements are possible to implement before the second SCS/APS development; and 4) what improvements are affordable to the MPO within available funding.

MPOs, RTPAs and CMAs may be grouped according to modeling needs *(See Table Below)*. For each group, we define: Model features and data, possible applications of the model, and policy analysis capabilities.

California MPO and RTPA Travel Model Requirement Groupings

County	2009 Population	Type	Grouping
Alpine	1,201	RTPA	A
Amador	38,080	RTPA	A
Calaveras	45,987	RTPA	A
Colusa	21,997	RTPA	A
Del Norte	29,547	RTPA	A
Glenn	29,239	RTPA	A
Lake	64,025	RTPA	A
Lassen	35,550	RTPA	A
Mariposa	18,306	RTPA	A
Modoc	9,698	RTPA	A
Mono	13,504	RTPA	A
Plumas	20,632	RTPA	A
Sierra	3,358	RTPA	A
Siskiyou	45,973	RTPA	A
Tehama	62,836	RTPA	A
Trinity	13,959	RTPA	A
Toulomne	56,335	RTPA	A
Inyo	18,152	RTPA	B
BCAG	220,748	MPO	B
Humboldt	132,755	RTPA	B
Kings	154,743	MPO	B
Madera	152,331	MPO	B
Mendocino	90,206	RTPA	B
Merced	256,450	MPO	B
Nevada	98,718	RTPA	B
San Luis Obispo	270,429	MPO	B
Shasta	180,023	MPO	B
TRPA	*	MPO	B
AMBAG	758,545	MPO	C
Monterey	431,892	RTPA	C
San Benito	58,016	RTPA	C
Santa Cruz	268,637	RTPA	C
Santa Barbara	431,312	MPO	C
Tulare	441,481	MPO	C

California MPO and RTPA Travel Model Requirement Groupings (Continued)

County	2009 Population	Type	Grouping
Fresno	942,298	MPO	D
Kern	827,173	MPO	D
San Joaquin	689,480	MPO	D
Stanislaus	526,383	MPO	D
MTC	7,375,678	MPO	E
SACOG	2,323,112	MPO	E
Placer	339,577	RTPA	E
El Dorado	180,185	RTPA	E
SANDAG	3,173,407	MPO	E
SCAG	18,761,139	MPO	E

Source: Dep. of Finance: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/2008-09/

E-1: City/County Population Estimates with Annual Percent Change; January 1, 2008 and 2009.
*SACOG population includes that of SACOG + TRPA
Placer and El Dorado RTPAs are part of the SACOG region and are therefore included in Group E; Santa Cruz, Monterey and San Benito RTPAs are part of the AMBAG Region are therefore included in Group C.

These recommendations are cumulative, with each set of model guidelines including the earlier ones on the list.

A. Counties with attainment Air Quality (AQ), slow growth in population and jobs, little or no congestion, and no significant capacity-enhancing projects or limited transit expansion plans or areas of non-attainment due to transport.

These counties do not need to run a network travel model. Road congestion is not increasing rapidly. Emission changes from higher-MPG vehicles can be factored or derived from the ARB inventory.

B. Regions with attainment AQ, slow to moderate growth, small population, and no urbanized area or transit having more than a minimal potential impact on VMT, plus rural isolated non-attainment areas due to transport.

Requirements (for MPOs only):

1. Each MPO shall model a range of alternative scenarios in the RTP Environmental Impact Report based on the policy goals of the MPO and input from the public. *(See Sections 5.1 through 5.5 for additional guidance)*

2. MPO models shall be capable of estimating future transportation demand at least 20 years into the future. *(Title 23 CFR Part 450.322(a))*

3. For federal conformity purposes, each MPO shall model criteria pollutants from on-road vehicles as applicable. Emission projections shall be performed using modeling software approved by the EPA. *(Title 40 CFR Part 93.111(a))*

4. Each MPO shall quantify the reduction in greenhouse gas emissions projected to be achieved by the SCS. *(California Government Code Section 65080(b)(2)(H))*

5. The MPO, the state(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans for providing input to the regional transportation plan. In updating the RTP, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. *(See Section 6.25 for additional guidance on SCS Planning Assumptions.)* The MPO shall approve RTP contents and supporting analyses produced by a transportation plan update. *(Title 23 CFR Part 450.322(e))*

6. The metropolitan transportation plan shall include the projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan. *(Title 23 CFR Part 450.322(f)(1))*

Recommendations (for MPOs and RTPAs):

1. The use of three-step models can continue for the next few years. The models should be run to a reasonable convergence towards equilibrium.

2. The models should account for the effects of land use characteristics on travel, either by incorporating effects into the model process or by post-processing.[18]

3. During the development period of more sophisticated/detailed models, there may be a need to augment current models with other methods to achieve reasonable levels of sensitivity. Post-processing should be applied to adjust model outputs where the models lack capability, or are insensitive to a particular policy or factor. The most commonly referred to post-processor is a "D's" post-processor, but post-processors could be developed for other non-D factors and policies, too. *(See Section 3.6, Reference 3, for additional guidance)*

4. The models should address changes in regional demographic patterns.

5. Geographic Information Systems (GIS) capabilities should be developed in these counties, leading to simple land use models in a few years.

6. All natural resources data should be entered into the GIS.

7. Parcel data should be developed within a few years and an existing land use data layer created.

8.

[18] Addresses California Government Code Section 14522.1(b)(1)

For the current RTP cycle (post last adoption), MPOs should use their current travel demand model for federal conformity purposes, and a suite of analytical tools, including but not limited to, travel demand models (as described in Categories B through E), small area modeling tools, and other generally accepted analytical methods for determining the emissions, VMT, and other performance factor impacts of sustainable communities strategies being considered pursuant to SB 375.

9. Measures of means of travel should include percentage share of all trips (work and non-work) made by all single occupant vehicle, multiple occupant vehicle, or carpool, transit, walking, and bicycling.

10. To the extent practical, travel demand models should be calibrated using the most recent observed data including household travel diaries, traffic counts, gas receipts, Highway Performance Monitoring System (HPMS), transit surveys, and passenger counts.

11. It is recommended that transportation agencies have an on-going model improvement program to focus on increasing model accuracy and policy sensitivity. This includes on-going data development and acquisition programs to support model calibration and validation activities.

12. For models with a mode choice step, if the travel demand model is unable to forecast bicycle and pedestrian trips, another means should be used to estimate those trips.[19]

13. When the transit mode is modeled, speed and frequency, days, and hours of operation of service should be included as model inputs.[20]

14. When the transit mode is modeled, the entire transit network within the region should be represented.[21]

15. Agencies are encouraged to participate in the California Inter-Agency Modeling Forum. This venue provides an excellent opportunity to share ideas and help to ensure agencies are informed of current modeling trends and requirements.

16. MPOs should work closely with state and federal agencies to secure additional funds to research and implement the new land use and activity-based modeling methodologies. Additional research and development is required to bring these new modeling approaches into mainstream modeling practice.

Policy analysis capabilities:

1. Agencies can define and evaluate trend forecast, combined general plans, and preferred RTP.

[19] Addresses California Government Code Section 14522.1(b)(4)
[20] Addresses California Government Code Section 14522.1(b)(2) and 14522.1(b)(5)
[21] Addresses California Government Code Section 14522.1(b)(5)

2. These models can be used to evaluate increased density and mix, urban growth limits, and improved neighborhood walkability and bikeability.

C. Regions with moderate to rapid growth, non-attainment AQ, or the potential for transit to significantly reduce VMT.

Requirements:

1. All the requirements of Group B, above.

Recommendations:

1. All the recommendations of Group B, above.

2. These regions should develop 4-step travel models as soon as is possible. In the near-term, post-processing should be used.

3. The travel model set should be run to a reasonable convergence towards equilibrium across all model steps.

4. Simple land use models should be used, such as GIS rule-based ones, in the short term.

5. Economic, market-based land use models that recognize the effects of transportation on development location should be developed within a few years.[22]

6. Parcel data and an existing urban layer should be developed as soon as is possible.

7. A digital general plan layer should be developed in the short-term.

8. A simple freight model should be developed and used.

9. Several employment types should be used, along with several trip purposes.

10. The models should have sufficient temporal resolution to adequately model peak and off-peak periods.

11. Agencies should investigate their model's volume-delay function and ensure that speeds outputted from the model are reasonable. Road capacities and speeds should be validated with surveys.

12. The urban development footprint in GIS should be used to calculate environmental impacts on terrestrial and aquatic ecosystems and/or inform the land use model of areas to be avoided in order to help locate alternative development.

[22] Addresses California Government Code Section 14522.1(b)(3)

Policy analysis capabilities:

1. More policy scenarios can be run. The same policies as in *Group B* could be run, plus one or more transit improvement proposals, as well as demand management, pricing strategies, and housing affordability.

2. In addition to the policies and performance measures in *Group B*, these agencies can evaluate policies for their effects on lower-income households, as required by Federal and State law. This can be done by evaluating traveler welfare measures based on the mode choice log sums for each household income class, or based on travel costs for them.

D. Regions that are nonattainment in ozone or CO, with a metropolitan planning area containing a population over 200,000.

Requirements:

1. All the requirements of Group C, above.

2. These regions shall achieve the requirements of the Transportation Conformity Regulations of Title 40 CFR Part 93.

3. Network-based travel models shall be validated against observed counts (peak- and off-peak, if possible) for a base year that is not more than 10 years prior to the date of the conformity determination. Model forecasts shall be analyzed for reasonableness and compared to historical trends and other factors, and the results shall be documented. (*Title 40 CFR Part 93.122* (b)(1)(i))

4. Land use, population, employment, and other network-based travel model assumptions shall be documented and based on the best available information. (*Title 40 CFR Part 93.122* (b)(1)(ii)) *(See Section 6.25 for additional guidance)*

5. Scenarios of land development and use shall be consistent with the future transportation system alternatives for which emissions are being estimated. The distribution of employment and residences for different transportation options shall be reasonable. (*Title 40 CFR Part 93.122* (b)(1)(iii))

6. A capacity-sensitive assignment methodology shall be used, and emissions estimates shall be based on a methodology which differentiates between peak- and off-peak link volumes and speeds and uses speeds based on final assigned volumes. (*Title 40 CFR Part 93.122* (b)(1)(iv))

7. Zone-to-zone travel impedances used to distribute trips between origin and destination pairs shall be in reasonable agreement with the travel times that are estimated from final assigned traffic volumes. (*Title 40 CFR Part 93.122* (b)(1)(v))

8. Network-based travel models shall be reasonably sensitive to changes in the time(s), cost(s), and other factors affecting travel choices. (*Title 40 CFR Part 93.122* (b)(1)(vi))

9. Reasonable methods in accordance with good practice shall be used to estimate traffic speeds and delays in a manner that is sensitive to the estimated volume of travel on each roadway segment represented in the network-based travel model. (*Title 40 CFR Part 93.122* (b)(2))

10. Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled (VMT) shall be considered the primary measure of VMT within the portion of the nonattainment or maintenance area and for the functional classes of roadways included in HPMS, for urban areas which are sampled on a separate urban area basis. For areas with network-based travel models, a factor (or factors) may be developed to reconcile and calibrate the network-based travel model estimates of VMT in the base year of its validation to the HPMS estimates for the same period. These factors may then be applied to model estimates of future VMT. In this factoring process, consideration will be given to differences between HPMS and network-based travel models, such as differences in the facility coverage of the HPMS and the modeled network description. Locally developed count-based programs and other departures from these procedures are permitted subject to the interagency consultation procedures of §93.105(c)(1)(i). (*Title 40 CFR Part 93.122* (b)(3))

Recommendations:

1. All the recommendations of Group C, above.

2. Agencies should, at a minimum, have four-step models with full feedback across travel model steps and some sort of land use modeling.

3. In addition to the conformity requirements, these regions should also add an auto ownership step and make this step and the mode choice equations for transit, walking and bicycling and the trip generation step sensitive to land use variables and transit accessibility.[23]

4. Walk and bike modes should be explicitly represented.

5. Small Traffic Analysis Zones (TAZ) should be used, to increase sensitivity to infill potential near to rail stations and in Bus Rapid Transit (BRT) corridors. Parking quantity and cost should be represented in the travel model.

6. The carpool mode should be included, along with access-to-transit sub modes.

7. Feedback loops should be used and take into account the effects of corridor capacity, congestion and bottlenecks on mode choice, induced demand, induced growth, travel speed and emissions.[24]

8. The regions should implement simple land use models that recognize the effects of transportation on development location and density for the next RTP and develop formal economic land use models in the next few years.[25]

[23] Addresses California Government Code Sections 14522.1(b)(1), 14522.1(b)(2), and 14522.1(b)(4)
[24] Addresses California Government Code Section 14522.1(b)(3)
[25] Addresses California Government Code Section 14522.1(b)(3)

9. Freight models should be implemented in the short term and commodity flows models within a few years.

10. Simple Environmental Justice analyses should be done using travel costs or mode choice log sums, as in Group *C*. Examples of such analyses include the effects of transportation and development scenarios on low-income or transit-dependent households, the combined housing/transportation cost burden on these households, and the jobs/housing fit. *(See Section 3.6, Reference 11, for additional guidance)*

11. Agencies should develop models that test joint (or simultaneous) choice of mode and destination.

12. These regions should monitor the large RTPAs and MPOs, in *E* below, as they develop tour/activity-based travel models.

13. The next household travel survey should include activities and tours.

14. Floor space rent data should be collected in the case where an agency is anticipating development of an integrated economic/land use (or microeconomic land use) model.

15. Where use of transit currently is anticipated to be a significant factor in satisfying transportation demand, the travel times that are estimated from final assigned traffic volumes times should also be used for modeling mode splits. (*Title 40 CFR Part 93.122* (b)(1)(v))

Policy analysis capabilities:

1. A full range of performance and impact measures could be developed, for economic, environmental, and equity effects, as required by SAFETEA-LU, National Environmental Policy Act, CEQA, and other laws. Traveler welfare could be measured and, if possible, locator welfare. Various measures of economic development could also be created, such as wages, jobs, production, and exports.

E. The largest MPOs with rapid growth, large population centers and established transit systems.

Requirements:

1. All the requirements of Group D, above.

Recommendations:

1. All the recommendations of Group D, above

2. If not already developed and validated for use for the current RTP cycle, MPOs are encouraged to transition to activity-based travel demand models for the following RTP cycle.

3. They should also build formal microeconomic land use models, as soon as is practical, so that they can be used to analyze and evaluate the effects of growth scenarios on economic welfare (utility), including land prices, home affordability, jobs-housing fit, the combined housing-transportation cost burden, and economic development (wages, jobs, exports). The land use and activity-based models should be integrated into a single modeling system — integrated land use/transportation model. This modeling approach allows planners to study the interactions between land use and the transportation system. ("Jobs-housing fit" is the extent to which the rents and mortgages in the community are affordable to the people who currently work there or will fill anticipated jobs.)

4. Travel demand processes should incorporate freight movement. Information from the statewide freight model, when available, local trip-based truck demand models, or more advanced commodity flows models could be used.

5. Commercial movements with truck and van tours should be accommodated in a commodity flow model.

6. Freight data collection programs should be emphasized with coordination with statewide efforts.

7. Household travel surveys should be activity-based and include a tour table. GPS sampling is encouraged or extra emphasis should be placed on accurate geocoding of households, workplace locations, and stops. Regions should take care in the design and data collection procedures of the survey to ensure survey results are appropriate to the type of model being utilized. Coordination with Caltrans' travel survey efforts is encouraged.

8. Stated preference surveys of households and firms should be performed, as necessary, for use in location choice models.

9. Microsimulation of households and firms should be investigated and developed, if feasible.

Policy analysis capabilities:

1. Integrating land use modeling with transportation demand modeling can simulate the complex interactions of proposed changes in land use, economic, and transportation systems. Equity analysis could include change in welfare by household income class. Economic development impacts may be comprehensively evaluated with this model set. Time-of-day road tolls can be evaluated.

2. Agencies can take transit capacity constraints into consideration to derive operating scenarios that avoid overcrowded buses and trains. The amount of transit service thus derived will advise policy makers on needed transit capital and operating funding levels.

Co-Benefits

MPOs should quantify, to the extent possible, the co-benefits associated with the achievement of their greenhouse gas reduction targets, as a means of increasing public understanding and support. MPOs should also promote the development and use of planning models that can accurately estimate the potential global warming and co-benefits of various land use scenarios in the development of the targets and the SCS. *(See SB 375 RTAC Final Report pp. 42-44 for addition guidance [Reference 9])*

Co-benefits include the following:

1. Increased Mobility: Congestion relief, more transportation choices, reduced commute time, and increased productivity.
2. Economic Benefits: Traveler savings, taxpayer savings, neighborhood economic development, and lower up-front infrastructure costs.
3. Reduced Air and Water Pollution: Less air pollution and improved water supply and quality.
4. Conservation of Open Space, Farm Land and Forest Land: These resources are capable of sequestering carbon in plant and tree matter as well as in soil. Small parks can obviate the need for automobile trips.
5. Healthier, More Equitable and Sustainable Communities: More opportunities for active lifestyles, less dependence on foreign oil, improved safety, greater housing choices, and more equitable communities.

Sketch Modeling of Scenarios

Each MPO will be adopting a public participation plan, for development of the SCS and, possibly, an APS. A component of this plan is to hold workshops to inform the public about the issues and policies being addressed as part of the SCS/APS process. Each workshop, to the extent practicable, shall include urban simulation computer modeling to create visual representations of the SCS and the APS. *(California Government Code Section 65080(b)(2)(E)(iii)) (See Section 4.3 for more information on the public participation plan)*

Agencies should develop fast-turnaround sketch modeling tools for testing scenarios in public workshops. A sketch model can be as simple as a single formula in a spreadsheet and as complex as a transportation model modified to run expeditiously enough to provide results within required time constraints. Agencies should disclose the level of detail or

~~"capability" of the sketch model used so that stakeholder expectations will be set appropriately.~~

~~These sketch models allow the rapid input of land uses and produce rough estimates of changes for the area being analyzed, enabling the development of a range of possible scenarios capable of meeting the policy goals of the agency. The final set of scenarios can be evaluated with the official travel model and land use model, to get accurate and detailed performance measures. The best scenarios may then be included in the various RTP, SCS, and APS processes.~~

~~Interregional Travel and Modeling~~

~~Interregional travel is defined as the sum of the following:~~

1. ~~Trips beginning outside a given MPO's boundary and ending within it (X-I trip)~~
2. ~~Trips beginning inside a given MPO's boundary and ending outside it (I-X trip)~~
3. ~~Trips beginning outside a given MPO's boundary, traveling across some portion of the region and ending outside the boundary (X-X trip)~~

~~Close collaboration is urged between adjacent MPOs and Caltrans in developing interregional trip estimates. The Statewide Travel Demand Model (STDM), when updated and fully implemented, will provide interregional trip data to be considered in MPO regional models. The STDM should go through the same model validation and calibration process as the RTPA and MPO models, along with the production of associated model documentation *(See Section 3.4 on Model Validation below for additional guidance).*~~

~~In those instances where adjacent MPO models produce dissimilar interregional volumes, the STDM will act as a point of reference which the MPO regional models should reasonably consider. Caltrans will act as facilitator in these situations to help reach consensus.~~

~~Requirements (Shall)~~

~~Federal:~~ ~~Title 40 CFR Part 93 implements Section 176(c) of the Clean Air Act with respect to the conformity of transportation plans, programs, and projects which are developed, funded, or approved by the United States Department of Transportation (DOT), and by metropolitan planning organizations (MPOs) or other recipients of funds under Title 23 USC or the Federal Transit Laws (Title 49 USC Chapter 53). Title 40 CFR Part 93.111(a) details the emissions model used in conformity determination. Title 40 CFR Part 93.122 details procedures for determining regional transportation related emissions. Title 23 CFR Part 450.322 defines the development and content of the metropolitan transportation plan. Title 40 CFR Part 1502.14 defines the alternatives to be considered in the Environmental Impact Statement.~~

~~State:~~ ~~California Government Code Section 65080(b)(2)(H) requires the metropolitan planning organization to quantify the reduction in greenhouse gas emissions projected to be achieved by the sustainable communities strategy.~~

~~Recommendations (Should)~~

~~Federal:~~ ~~Title 40 CFR Part 93.122 details procedures for determining regional transportation-related emissions.~~

~~State:~~ ~~None~~

3.3 Regional Economic & Land Use Model Requirements and Recommendations

Based on the guiding federal and state statutes regarding RTP development, the California Transportation Commission has developed the following transportation modeling guidelines to support these policy objectives.

Requirements:

1. Socioeconomic models shall include capabilities to measure the impacts of transportation investments on low income and minority communities as required under federal and state law.

Recommendations:

1. See Section 6.25 for additional land use guidance as related to SCS development.

2. Microeconomic land use models should be developed for use with activity-based travel demand models. Microeconomic land use models should be used to analyze and evaluate the effects of growth scenarios on economic welfare (utility), including land prices, home affordability, jobs-housing fit, the combined housing-transportation cost burden, and economic development (wages, jobs, exports). Geocoded employment data with occupational code should be purchased for two or more past years. Floor space quantity and rent data should be gathered. ("Jobs-housing fit" is the extent to which the rents and mortgages in the community are affordable to the people who currently work there or will fill anticipated jobs.)

3. Regional models should consider population growth based on birth and mortality and international and domestic migration.

4. Socioeconomic models should provide projections on future employment indicators including jobs by sector and income.

5. Land use models should be sensitive to transportation scenarios such that the effects of land use and transportation policies can interact with feedback in an integrated transportation and land use model.[26]

[26] Addresses California Government Code Section 14522.1(b)(1)

Requirements (Shall)

Federal: Title 23 USC Section 109(h) Federal-Aid Highways. Executive Order No. 12898 (1994), U.S. DOT Order Section 5610.2 and U.S. DOT Order Section 6640.23 regarding environmental justice in minority and low-income populations.
State: None

Recommendations (Should)

Federal: None
State: None

3.4 RTP Modeling Quality Control and Consistency

The following recommendations for quality control through model consistency and peer review are essential in creating confidence in modeling results. These process recommendations should be implemented by all agencies as soon as is possible.

Consistency of RTP Modeling

Recommendations:

1. Agencies that use MPO models for purposes other than regional planning should ensure that the model provides the appropriate scale and sensitivity for applications at a sub-regional level such as corridor, sub-area, or local planning studies. Below the regional level, model refinements are likely necessary to ensure the model meets the validation targets established in these guidelines and is appropriately sensitive to smaller scale changes associated with sub-regional studies.

2. Modeling practices should be consistent between California Department of Transportation (Caltrans) District Offices, MPOs, RTPAs, cities, counties, and Congestion Management Agencies (CMA) as appropriate given recommendation 1 above.

3. The same land use model used in the RTP modeling should be used in the impact assessment for the No Action alternative, the Proposed Plan alternative, and the Environmentally Preferable Alternative. Only in this way will all of the outputs in the RTP and EIR be comparable.

4. Post processing of model results should be accompanied by an explanation of what model limitations are being overcome and how the limitations were identified.

5. All MPOs and RTPAs should use common data definitions, sources, and performance measures for data including, but not limited to population, employment, and housing estimates and projections, labor forces ages, and vehicle miles traveled.

~~Model Peer Review, Testing and Documentation~~

~~MPOs and modeling agencies are encouraged to participate in statewide modeling user groups. In addition, formation and participation in local model users groups is encouraged as a means to share ideas, review model inputs/methods, and coordinate modeling activities.~~

~~Requirements:~~

1. ~~A MPO shall disseminate the methodology, results, and key assumptions of whichever models it uses in a way that would be useable and understandable to the public. *(See Section 4.3 for more information on the public participation plan)*~~

~~Recommendations:~~

1. ~~A MPO should disseminate the methodology, results, and key assumptions of whichever models (not already covered in Requirement 1 above) it uses in a way that would be useable and understandable to the public.~~

2. ~~Each agency should participate in a peer review program every ten years or after a major model enhancement such as transitioning from a four-step to a tour/activity based travel demand model. The four largest MPOs (SCAG, MTC, SANDAG, and SACOG) should use the Federal Highway Administration's Travel Model Improvement Program (TMIP) peer review process, but include a modeler from another California MPO of similar size for their understanding of California laws. Other agencies should set up reviews using California modelers. Peer reviews should be made publicly available with the model documentation.~~

3. ~~The travel forecasting methods used by an MPO should be addressed in the FHWA/FTA certification review to ensure that they adequately support the applications for which they are being used.~~

4. ~~The travel demand model, and regional economic and land use model if applicable, should be documented, including all statistical goodness-of-fit measures derived from sub-model specification. The documentation should be placed on the agency's website.~~

5. ~~The model documentation should include a comprehensive list of output metrics the model is capable of producing. To the extent practical, the documentation should include potential uses for each metric.~~

~~Model Validation~~

~~Validating the ability of a model to predict future behavior requires comparing its predictions with information other than that used in estimating or calibrating the model. The model output is compared with observed or empirical travel data, and parameters are adjusted until the output falls within an acceptable range of error.~~

~~Validation testing for a travel demand forecasting (TDF) model should include both static and dynamic tests. Static validation tests compare the model's base year traffic volume estimates to traffic counts using the statistical measures listed below and the threshold criteria contained in the table below as specified in the *Travel Forecasting Guidelines*, Caltrans, 1992. Below is a list of possible validation measures and thresholds.~~

- ~~Volume-to-count ratio – is computed by dividing the volume assigned by the model and the actual traffic count for individual roadways model-wide. This value provides a general context for the relationship (i.e., high or low) between model volumes and counts.~~

- ~~Percent of Links Within Caltrans Deviation Allowance – the deviation is the difference between the model volume and the actual count divided by the actual count. The Caltrans deviation thresholds recognize that allowances shrink as the count increases (i.e., lower tolerance for differences between the model volume estimates and counts).~~

- ~~Correlation Coefficient – estimates the correlation (strength and direction of the linear relationship) between the actual traffic counts and the estimated traffic volumes from the model.~~

- ~~Percent Root Mean Square Error (RMSE) – is the square root of the model volume minus the actual count squared divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model.~~

~~Static Validation Criteria and Thresholds~~

~~Validation Item~~	~~Criteria for Acceptance~~
~~Percent of links with volume-to-count ratios within Caltrans deviation allowance~~	~~At Least 75%~~
~~Correlation Coefficient~~	~~At Least 0.88~~
~~Percent Root Mean Squared Error (RMSE)~~	~~Below 40%~~

Dynamic validation determines the model's sensitivity to changes in land uses and/or the transportation system. These types of tests are recommended in the *Model Validation and Reasonableness Checking Manual* (Travel Model Improvement Program, FHWA, 1997). The results of dynamic validation tests are inspected for reasonableness in the direction and magnitude of the changes. Dynamic validation can include the following model sensitivity tests, as appropriate given the type of regional model and alternatives under evaluation.

- Add lanes to a link
- Add a link
- Delete a link
- Change link speeds
- Change link capacities
- Add 100 households to a TAZ
- Add 1,000 households to a TAZ
- Add 5,000 households to a TAZ
- Add 10,000 households to a TAZ
- Increase/Decrease toll rates
- Increase/Decrease transit fares
- Increase transit speeds

Review of the dynamic validation tests should indicate that changes to the model volumes occurred in the appropriate direction and magnitude before the model is used in policy analysis or planning *(See Section 3.4 on Model Peer Review, Testing and Documentation above for additional guidance).*

The table below specifies possible transit assignment validation criteria that can be applied to transportation models.

Transit Assignment Validation Criteria

Validation Item	Criteria for Acceptance
Difference between actual counts to model results for a given year by route group (i.e., Local Bus, Express Bus, etc.)	+/- 20%
Difference between actual counts to model results for a given year by Transit Mode (i.e., Light Rail, Bus, etc.)	+/- 10%

Key model validation statistics should be documented, showing the correspondence of the model prediction for a validation year to empirical data.

Model Sensitivity

MPOs currently use macro-level trip-based or activity-based travel demand models to estimate and forecast vehicle miles of travel (VMT) or VMT stratified by speed as inputs to air pollution and greenhouse gas (GHG) emissions models. As macro-level models, traffic flow efficiency and its effect on fuel consumption, and therefore GHG emissions, is not fully captured by these models or performance measures. Further, many of these models don't contain feedback processes to trip generation or land use forecasts. This could under- or over-state VMT-related forecasts due to induced or suppressed travel effects. These limitations are inherent in RTP and SB 375-related analysis until such time that the models are improved. Each MPO should be working to improve model sensitivity and accuracy

related to measuring GHG emissions associated with both land use or transportation network decisions. However, the application of these quality control criteria will vary based on the size of the MPO, severity of non-attainment status, sophistication of transit system, degree of model sophistication, and the presence of pricing variables, among other characteristics.

Recommendations:

1. Models should be tested for sensitivity to changes in inputs, parameter values, and policies. Elasticities for several variables should be calculated and compared to theory and those generated by other models.

2. As part of the model development process, all models should, as applicable to the region, be sensitive to the following items, or acknowledge the model limitations:
    a. Price sensitivity, such as in tolling or congestion pricing applications
    b. Destination proximity: accessibility of an area to other activities
    c. Density, or clustered development
    d. Diversity, or mixture of land uses
    e. Distance to transit
    f. Design and layout of an area's transportation facilities
    g. Evaluation of development in known industrial areas
    h. Equity and environmental justice sensitivities, such as effects of transportation and development scenarios on low-income, minority and transit-dependent households
    i. Sensitivity to different types of transportation options, including transit (broken down by mode), walking and bicycling[27]
    j. Sensitivity to different economic/income growth rates

3. Experimental sensitivity tests, wherein a single factor or variable is adjusted higher and lower from its baseline value, should be run to determine the corresponding changes in model output variables. Results should be documented. Minimally, the outputs shown would be: total VMT; light-duty vehicle VMT total and per capita; light-duty vehicle greenhouse gas total and per capita; total person trips; person trips by automobile modes; person trips by transit modes; and person trips by bike and walk modes.

4. Results of planning scenario tests, wherein the modeled results of planning scenarios are tabulated and correlated to show the overall sensitivity of the travel demand model to a combination of factors and policies included in the planning scenario should be documented.

5. The documentation of the sensitivity tests should identify the range of reasonable sensitivity based on research literature, and account for where in this range the travel demand model sensitivity falls.

6. Where results of planning scenario tests are reported, the MPO should show a correspondence between the planning scenario test results and the experimental, single factor sensitivity testing. Part of this documentation should assess the degree of interaction of factors and policies (i.e. the difference between the sum of all scenario variables taken individually, and the total change in modeled results).

[27] Addresses California Government Code Section 14522.1(b)(2) and 14522.1(b)(4)

7. Model assessment and documentation should identify areas where the model lacks capacity for analysis of a factor or policy, and any factors or policy for which the model sensitivities fall outside the range of results documented in research literature.

Requirements (Shall)

Federal: None

State: California Government Code Section 14522.2 requires the metropolitan planning organization to share modeling documentation in a transparent manner with the public.

Recommendations (Should)

Federal: None

State: *Recommendations of the Regional Targets Advisory Committee (RTAC) Pursuant to SB 375*

3.5 RTP Modeling as a Policy Tool

The RTP analyses could provide to decision-makers and the public:

1. A clear explanation of the modeling and analytical techniques applied in assessing the implications of the land use scenarios or other alternatives studied;
2. Reasonable transparency to that modeling and analytical process;
3. An understanding of the sensitivity of the forecast results to various policy assumptions; for example, where feasible, offering estimates of the elasticities and cross elasticities of demand for various modes of travel with respect to critical variables such as access time, travel time, reliability, safety, and cost;
4. The degree to which analytical results can be expected to be more indicative of a general expected trend or order of magnitude change rather than a quantifiably valid forecast, in other words, given the model inputs, do the model outputs appear to be reasonable based on the modeler's significant, technical, and professional judgment; for quantifiably valid forecasts, provide a qualitative sense of each forecast's expected reliability; and
5. Pertinent insights gained through research into the variables that influence consumer choice of transit vs. single occupant vehicles, particularly in transit oriented and mixed use development.

3.6

Modeling References

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8. Barton-Aschman Associates Inc. and Cambridge Systematics, Inc. "Model Validation and Reasonableness Checking Manual." 1997 Federal Highway Administration. http://tmip.fhwa.dot.gov/resources/clearinghouse/docs/mvrcm/.

9. SB 375 Regional Targets Advisory Committee. "SB 375 Regional Targets Advisory Committee Final Report." September 29, 2009 California Air Resources Board. http://www.arb.ca.gov/cc/sb375/rtac/report/report.htm.

10. Virginia Department of Transportation. "Implementing Activity-Based Models in Virginia." July 2009 Virginia Department of Transportation. http://tmip.fhwa.dot.gov/resources/clearinghouse/browse/list/16/1336

11. Center for Neighborhood Technology. "The Housing + Affordability Index" http://htaindex.cnt.org/

12. California Department of Transportation. "Guidance for Preparers of Growth-related, Indirect Impact Analyses" http://www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/gri_guidance.htm

13. Caroline J. Rodier, John E. Abraham, Robert A. Johnston, and John Douglas Hunt. "Anatomy of Induced Travel: using an integrated land use and transportation model in the Sacramento region." 2001 Paper no. 01-2582 presented at the 80th Annual Meeting of the Transportation Research Board. http://www.des.ucdavis.edu/faculty/johnston/pub22.htm

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Chapter 4

RTP Consultation and Coordination

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Consultation and Coordination

4.1 Consultation & Coordination

Transportation planning is a collaborative process, led by the MPO~~/RTPA~~ and other key stakeholders in the regional transportation system. Transportation planning activities include visioning, forecasting population/employment, identifying major growth corridors, projecting future land use, assessing needs, developing capital and operating strategies to move people and goods, and developing a financial plan. The required planning processes are designed to foster involvement by all interested parties, such as the business community, community groups, walking and bicycling representatives, environmental organizations, the Native American community, neighboring MPOs~~/RTPAs~~ and the general public through a proactive public participation process.

Coordination is the cooperative development of plans, programs and schedules among agencies and entities with legal standing in order to achieve general consistency. Consultation means that one or more parties confer with other identified parties in accordance with the established process and, prior to taking action(s), considers the views of the other parties and periodically informs them about action(s) taken. It is very important for the development of the RTP to be conducted both in coordination and consultation with interested parties.

In addition to having an extensive public participation process, each MPO~~/RTPA~~ should coordinate its regional transportation planning activities with all transportation providers, facility operators such as airports, appropriate federal, state, local agencies, Native American Tribal Governments, environmental resource agencies, air districts, pedestrian and bicycle representatives and adjoining MPOs~~/RTPAs~~. The RTP shall (Title 23 CFR Part 450.32~~24~~(g)(1) and (2)) reflect consultation with resource and permit agencies to ensure early coordination with environmental resource protection and management plans, for additional information regarding consultation with resource agencies see Section 4.9.

RTPs are required to be developed in coordination with local and regional air quality planning authorities and shall reflect specific consultation activities with air quality agencies on the development of the RTP (Title 40 CFR Part 93.105 (b)). MPOs~~/RTPAs~~ participate in air quality planning by providing vehicle counts for emissions inventories. They also develop methods to reduce transportation related emissions. This participation helps lay the groundwork for future SIP conformity determinations. All MPOs in nonattainment and maintenance areas shall coordinate the development of their RTPs with their respective Air Quality Management District(s), the California Air Resources Board, Caltrans, local transportation agencies, EPA, and US DOT in order to ensure conformity with the SIP. The federal Clean Air Act Amendments of 1990 requires SIP development to be coordinated with the transportation planning process (Title 42 Section 7504(b)). Detailed requirements may also be found in Title 40 CFR Parts 51 and 93 (Transportation Conformity rules).

~~Due to the importance of including a wide range of various parties in the development of the RTP, non-MPO RTPAs will also need to conform to the same coordination and consultation requirements as MPOs.~~ Development of the Public Participation Plan and the RTP shall include consultation and coordination with all interested parties and shall, at a minimum, describe explicit procedures, strategies and desired outcomes.

Consultation shall not be limited to a public hearing notice to the general public and stakeholders. Providing access to information to the general public, incorporating public comments and input on plans, programs and policies should also be embraced.

In summary, the consultation process shall:

1. Provide adequate public notice and the opportunity to comment on proposed RTPs and public participation plans;
2. Employ visualization techniques to describe the RTP;
3. Make the RTP electronically accessible, such as placing it on the Internet;
4. Hold public hearings at convenient and accessible locations and times;
5. Demonstrate explicit consideration and response to public input on the RTP (documentation);
6. Seek out and consider the needs of those traditionally underserved by existing transportation systems, such as low income and minority households;
7. Provide additional opportunities to comment on the RTP and the FTIP, if the final version differs due to additional comments;
8. Coordinate with the state transportation planning and public involvement processes; and,
9. Periodically review intended RTP outcomes, products and/or services.

Requirements (Shalls)
Federal: Transportation Conformity Regulations of Title 40 CFR Part 93.105
State: ~~None~~ Government Code Section 65080(b)(2)(E)

Recommendations (Shoulds)
Federal: Title 23 CFR Part 450.316 encourages MPOs to develop a process and mechanism in which all parties may provide comments/input on the MPOs public participation plan and in the development of the RTP.
State: None

Best Practices: By documenting how specific comments are considered, the MPO~~/RTPA~~ can demonstrate its responsiveness to community input during the consultation and coordination process associated with development of the RTP. To the extent that it is practicable and resources are available, the Draft RTP as well as any comments received to the draft could be posted on the MPO~~/RTPAs~~ website in a way that is easily accessible to the public. Responsiveness to community input provides increased assurance of an open and collaborative planning process. The links below provide examples of plans that demonstrate extensive consultation, coordination and consideration of public input.

http://www.sjcog.org/Programs%20&%20Projects/Transportation_files/RTP.htm

http://www.mtc.ca.gov/planning/2035_plan

4.2 ~~Social Equity and~~ Environmental Justice Considerations in the RTP

The inclusion of the entire range of community interests in the development of the RTP is a key element in the process and is required by both federal and state law. Providing more transportation and mobility choices such as increased transit, bicycle, and pedestrian facilities, as well as appropriate housing choices near job centers increases opportunities for all segments of the population at all income levels. Each region is required by federal regulation and state

law to plan for and implement transportation system improvements that will benefit all residents. Title VI of the federal Civil Rights Act of 1964, Section 11135 of the California Government Code, and Executive Order 12898 on Environmental Justice require MPOs ~~and RTPAs~~ to be sensitive to how all residents, particularly low-income communities and communities of color, may be impacted by possible transportation and land use changes identified in the RTP. Existing federal regulations require MPOs ~~and RTPAs~~ to ensure that any planned regional transportation improvements do not have a disproportionate adverse impact on low income or other under-represented groups, and that minority and low-income populations receive equal benefits, on an equally timely basis, as other populations.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.316(a)(1); Title VI of the federal Civil Rights Act of 1964, Title 49 CFR Part 21.5, Title 42 USC Chapter 21 Section 2000(d); implementing orders under Executive Order 12898 on Environmental Justice (1994): US DOT Order 5610.2 (1997) and US DOT Order 6640.23 (1998).
State: Government Code Section 11135

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

4.3 Social Equity Factors

Social equity factors relevant to RTP development include, but are not limited to, housing and transportation affordability, access to transportation, displacement and gentrification, and the jobs/housing fit.

Title 23 CFR Part 450.316(a)(1)(vii) requires that an MPO's public participation plan describe explicit procedures, strategies and desired outcomes for seeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income and minority households, who may face challenges accessing employment and other services.

Best Practices: As a best practice, MPOs can ensure the involvement of low-income and minority households by proactively seeking the input of these households and by making public meetings as accessible as possible. Recommended practices may include: holding meetings outside of traditional working hours (e.g. evenings and weekends); locating meetings in low-income communities and communities of color; locating meetings at sites accessible via affordable transit; translating meeting materials for non-English speakers; providing interpretation at meetings for non-English speakers; and ensuring meetings are attended by MPO decision makers in addition to MPO staff.

In addition to the practices listed above, MPOs are also encouraged, to the extent practicable, to develop partnerships with local, regional and state-wide organizations that can assist in achieving RTP participation goals.

Federal guidance for Environmental Justice analysis can be found at:

http://www.fhwa.dot.gov/environment/ej2.htm

Chapter 6 of Kern Council of Government's 2007 RTP provides a good example of an Environmental Justice analysis within an RTP:

http://www.kerncog.org/docs/rtp/2007_RTP.pdf

~~4.3~~ 4.4 Participation Plan

Involving the public in planning and project development poses a major challenge as well as an opportunity. Many people are skeptical about whether they can truly influence the outcome of a transportation project. Others feel that transportation plans are too abstract and long-term to warrant attention. At the same time, especially for MPOs as a result of SB 375, there ~~may be~~ has been and continues to be, increased interest in regional transportation planning by individuals and groups not previously involved.

The RTP is one of the key processes an MPO~~/RTPA~~ undertakes. It is a primary avenue for public participation in the long-range transportation planning process. Title 23 CFR Part 450.316(a) states the following concerning participation and consultation:

"The MPO shall develop and use a documented participation plan that defines a process for providing individuals, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, public ports representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with reasonable opportunities to be involved in the metropolitan transportation planning process."

Title 23 CFR Part 450.316(a)(1) also requires that public participation plans be developed by MPOs in consultation with all interested parties and describe explicit procedures, strategies, and desired outcomes for:
(i) Providing adequate public notice of public participation activities and time for public review and comment at key decision points, including but not limited to a reasonable opportunity to comment on the proposed metropolitan transportation plan and the TIP;
(ii) Providing timely notice and reasonable access to information about transportation issues and processes;
(v) Holding any public meetings at convenient and accessible locations and times;
(vii) Seeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income and minority households, who may face challenges accessing employment and other services.

The purpose of the MPO's~~/RTPA's~~ participation plan is to establish the process by which the public can participate in the development of regional transportation plans and programs. The public participation plan should be designed to assist MPO~~/RTPA~~ staff in implementing an effective public participation process through a variety of strategies. It provides MPO~~/RTPA~~ staff with a menu of techniques or activities from which they can tailor their specific program's input process. MPOs should also refer to the CTP Public Participation Plan document, or the CTP/FSTIP Public Participation Plan, which can provide the most effective methods for engaging with the public. This document can be accessed through the following link: http://www.dot.ca.gov/hq/tpp/offices/osp/ppp_files/CTPE_PPP_Final_052913_dg_29.pdf#zoom=75. Which public participation methods the MPO~~/RTPA uses~~ will require a careful analysis of what is desired to be accomplished as well as the scope of the particular transportation project(s). Plenty of flexibility is available to MPOs~~/RTPAs~~ in developing specific public

involvement programs. Every given situation or region in California is different, and each approach to a specific public involvement challenge will be unique.

When significant written and oral comments are received on the draft RTP and as a result of the participation process or the interagency consultation process required under the EPA transportation conformity regulations (Title 40 CFR Part 93), a summary, analysis, and report of the proposed comments shall be made as part of the final RTP.

It is important to note that the public participation plan should be prepared prior to the development of the RTP. The public participation plan should have public input during its preparation and have a 45-day comment period before the MPOs~~/RTPAs~~ board adopts it. This enhanced public participation plan is a requirement as a result of SAFETEA-LU. MPOs that currently have a public participation plan per federal requirements do not need to adopt another plan to meet new SB 375 requirements for additional public participation. The public participation requirements for development of the Sustainable Communities Strategy, pursuant to the requirements of SB 375, can be incorporated into the existing plan.

Title 23 CFR Part 450.316(a)(1)(iii) requires the participation plan to use visualization techniques to describe the RTP and FTIP. Visualization techniques range from a simple line drawing or hand written chart to technologically complex web cast public meetings, GIS modeling and computer generated maps. The specific type of visualization technique is determined by the MPO/~~RTPA.~~

The public participation plan, the draft and adopted RTP shall be posted on the MPO~~/RTPA's~~ website to the maximum extent practicable and for the life of the RTP. It is also recommended that MPOs~~/RTPAs~~ place hard copies of the draft and adopted copies of RTPs in local libraries and other locations where the public would have access to these documents.

Public involvement programs for regional transportation plans in California are required to follow state and federal requirements. If the minimum state and federal requirements are inadequate for the region, the MPO/~~RTPA~~ may develop a more specialized public involvement program if that promises to be more effective.

In developing RTPs, the MPO~~/RTPA~~ should consult with agencies and officials responsible for other planning activities within their region that are affected by transportation or at least coordinate the planning process to incorporate input. These areas include, but are not limited to, the listed examples:

1. State and local growth;
2. Housing;
3. Economic development;
4. Environmental protection;
5. Airport operations; and,
6. Goods Movement.

When the MPO/~~RTPA~~ region includes California Indian Tribal Lands (reservations, Rancherias, and allotments) the MPO~~/RTPA~~ shall appropriately involve the federally recognized Native American Tribal Government(s) in the development of the RTP. The MPO~~/RTPA~~ should also seek input even from tribes that are not federally recognized or from other "interested parties" that may have a background and/or history of Native American culture within the region. In

addition, Assembly Bill 52 (2014, Gatto) mandates that agencies must consult with tribes regarding impacts to Tribal Cultural Resources as an impact under CEQA.

Similarly, when the MPO/~~RTPA~~ region includes federal public lands, the MPO/~~RTPA~~ shall appropriately involve the federal land management agencies in the development of RTP.

The MPO shall also, to the extent practicable, develop a documented process that outlines roles, responsibilities, and key decision points for consulting with other governments and agencies. ~~Non-MPO public participation efforts shall at minimum develop a documented process that outlines roles, responsibilities and provides outreach efforts to all sectors of the local community.~~

~~Non-MPOs (RTPAs) may include a separate Public Participation Plan, however non-MPOs shall at minimum include a detailed discussion of public participation efforts within the RTP. For example, public hearings, workshops, surveys, brochures and other methods that invite comments or input for the public participation efforts and RTP development.~~

MPOs ~~and RTPAs~~ are also encouraged to involve the media, including ethnic media as appropriate, as a tool to promote public participation in the RTP development, review and commenting process.

For MPOs ~~only~~, SB 375 increased the minimum level of public participation required in the regional transportation planning process including collaboration between partners in the region during the development of a Sustainable Communities Strategy (see Sections 4.6 and 4.7).

Public participation and consultation for the development of the RTP remains an essential element of the overall RTP process. Mapping and visualization tools should be used, to the extent practicable, to create visual representations of proposed scenarios, the SCS and the APS, if applicable. Use of these tools will help facilitate more effective and meaningful public involvement in development and refinement of the SCS and APS, if applicable. A Public Participation Plan includes public outreach, public awareness, and public input beginning with the planning stage.

The MPO shall adopt a Public Participation Plan in advance of developing an SCS and/or APS to include:

- Outreach efforts encouraging the active participation of a broad range of stakeholders in the planning process, consistent with the agency's adopted Federal Public Participation Plan. This includes, but is not limited to, affordable housing advocates, transportation advocates, neighborhood and community groups, environmental advocates, home builder representatives, broad-based business organizations, landowners, commercial property interests, and homeowner associations.
- Consultation with congestion management agencies, transportation agencies, and transportation commissions.
- Regional public workshops with information and tools providing a clear understanding of policy choices and issues. At least one workshop in each county. At least three workshops for counties with a population greater than 500,000. To the extent practicable, each workshop shall include urban simulation computer modeling to create visual representations of the SCS and APS.
- Preparation and circulation of a draft SCS (and APS, if one is prepared) not less than 55 days before adoption of a final RTP.

- For multiple-county MPOs at least three public hearings shall be held on the draft SCS in the RTP (and APS, if any). For a single county MPO, at least two public hearings shall be held. To the maximum extent feasible, the hearings shall be in different parts of the region to maximize the opportunity for participation by members of the public throughout the region.
- A process enabling the public to provide a single request to receive notices, information and updates.

Pursuant to Government Code Section 65080 (b)(2)(A)(ii), the MPO shall hold at least one public workshop within the region, after receiving the Regional Targets Advisory Committee (RTAC) recommendation report regarding methods and factors for setting regional GHG targets (which was released on September 29, 2009).

This public participation plan is not required to be reviewed or approved by any state agency and is not necessary to be included as part of the RTP. However, the MPO should maintain a record of its public participation efforts relative to the SCS and APS if applicable, and therefore, it is recommended these additional requirements should be included in the federally required public participation plan.

For additional information on the consultation process with elected officials please refer to Section 4.6.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.316 requires that the MPO shall develop and use a documented participation plan that defines a process for providing reasonable opportunities for all parties to comment and be involved in the metropolitan transportation planning process.
State: Government Code Section 65080; Public Resources Code Section 5097.94, and Sections 21073 through 21084.3.

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices:

http://www.mtc.ca.gov/get_involved/participation_plan.htm

http://www.mtc.ca.gov/planning/2035_plan/outreach.htm

http://www.sandag.org/programs/transportation/comprehensive_transportation_projects/2030rtp/2007rtp_C_final.pdf

http://www.sandag.org/index.asp?publicnoticeid=141&fuseaction=notices.detail

http://www.sjcog.org/Programs%20&%20Projects/Transportation_files/RTP.htm

~~4.4~~ 4.5 Private Sector Involvement

Private sector involvement relates to how the goods movement industry and other business or commercial interests are represented in the development of the RTP. Trucks, freight trains, taxis, limousines all use the transportation network and are an integral part of the regional transportation system. Other examples of private sector involvement in the development of the RTP include Transportation Management Associations, private transit operators, developers, and Chambers of Commerce. Their absence in the regional transportation planning process adversely impacts the efficiency of the transportation network.

In ~~most~~ urbanized areas of California, the number of trucks on the highway system has substantially increased. This has had a direct impact on traffic congestion within these areas. An increased level of truck activity has also had an impact in rural areas of the state, although primarily on the principal routes in rural counties. For these reasons, an RTP that does not include the "Private Sector" in the planning process is not a viable plan. The impact of the private sector on the transportation system is ~~just too~~ significant and must ~~not to~~ be included and documented in the RTP process.

Unfortunately, in many plans, the private sector is not identified as a planning partner. Where addressed, goods movement is discussed in the abstract with minimal long-range assumptions identified or assessed.

MPOs~~/RTPAs~~ should take necessary actions to ensure major trucking firms, large employers and business organizations are formally invited to participate in the preparation of the RTP. The MPO~~/RTPA~~ should strive to include any major long-range plans of these organizations that may have an impact on the regional transportation system. The purpose is to provide private sector transportation providers a process of communication and involvement into the region's transportation planning process. The specific outreach techniques developed and ultimately used is dependent on the size and composition of the region. These efforts to solicit input into the long-range regional transportation planning process should be documented in the RTP.

Requirements (Shalls)
Federal: Federal regulations require private sector involvement as a component of the regional transportation planning process. Title 23 USC Part 134 (g)(4), Title 23 USC Section 135(e) and Title 23 CFR Part 450.316 (a) require the transportation planning process include input from the goods movement industry and other transportation organizations.
~~**State:** None~~

Recommendations (Shoulds)
~~**Federal:** None~~
State: California Government Code Section 14000(d) recommends that a comprehensive multimodal transportation planning process should be established which involves all levels of government and the private sector in a cooperative process to develop coordinated transportation plans.

Best Practices:

http://www.sacog.org/regional-plans.

http://www.nhi.fhwa.dot.gov/training/course_search.aspx?sf=0&course_no=139009

~~http://www.sacog.org/goodsmovement~~

~~4.5~~ 4.6 Consultation with Interested Parties

The U.S. DOT defines consultation as when: "*one or more parties confer with other identified parties in accordance with an established process and, prior to taking action(s), considers the views of the other parties and periodically informs them about action(s) taken*." Some areas of consultation could include transportation, land use, employment, economic development, housing, community development and environmental issues.

The U.S. DOT definition of "interested parties" to be engaged in statewide and metropolitan transportation planning has been expanded. The MPO~~/RTPA~~ shall provide the following interested parties with reasonable opportunity to comment on the proposed RTP:

1. ~~Citizens~~ Residents;
2. Affected public agencies;
3. Representatives of public transportation employees;
4. Warehousing and logistics representatives;
5. Deep water ports;
6. Class I and short line rail providers;
7. Freight shippers;
8. Private providers of transportation;
9. Representatives of users of public transportation;
10. Representatives of users of pedestrian walkways and bicycle transportation facilities;
11. Representatives of people with disabilities;
12. Providers of freight transportation services; and,
13. Other interested parties.

Requirements (Shalls)
Federal: Consulting with interested parties on plans, programs and projects shall include individuals or organizations that are mentioned in Title 23 CFR Part 450.316(a). Title 23 CFR Part 450.316(d) requires MPOs to consult with federal land use management agencies as appropriate during the development of RTP. ~~RTPAs shall comply as well.~~ Title 23 CFR part 450.32~~2~~24(g) states that MPOs shall consult as appropriate with state and local agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation during the development of their RTP. ~~RTPAs shall comply with this as well.~~
State: None

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

~~http://www.sjcog.org/Programs%20&%20Projects/Transportation_files/RTP.htm~~

http://www.sjcog.org/index.aspx?nid=181

http://rtpscs.scag.ca.gov/Pages/default.aspx

http://www.nhi.fhwa.dot.gov/training/course_search.aspx?sf=0&course_no=139009

~~http://www.scag.ca.gov/rtp2004/2004/FinalPlan.htm~~

~~http://www.edctc.org/_rtp.htm~~

4.7 Input & Consultation with Local Elected Officials on SCS Development

This section applies only to federally-designated Metropolitan Planning Organizations that are required to prepare a Sustainable Communities Strategy (SCS), and Alternative Planning Strategy (APS), if applicable.

Existing federal regulations require MPOs to ensure the general public, resource agencies and Native American Tribal Governments are consulted during the development of the RTP. As a result of SB 375, this consultation requirement has been expanded.

During the development of the SCS (and APS if applicable), the MPO must conduct at least two informational meetings in each county for members of the board of supervisors and city councils. Only one informational meeting is needed in each county if it is attended by representatives of the county board of supervisors and city councils that represent a majority of the cities representing a majority of the population in the incorporated areas of that county. The purpose of this meeting (or meetings) shall be to discuss the SCS (and APS if applicable), including the key land use and planning assumptions, with the members of the board of supervisors and city council members in that county and to solicit and consider their input and recommendations. Notices of these meetings are to be sent to the clerk of the board of supervisors and city councils.

Continuing with a collaborative transportation planning process, MPOs work and consult with local elected officials as key stakeholders in the regional transportation system. While local elected officials serve on regional agency boards, expanded consultation is required pursuant to Government Code Section 65080(b)(2)(E) and (F) to provide outreach to all local elected officials and their member jurisdictions affected by the SCS (and APS if applicable). This is particularly significant in those regions where not all cities and counties have a permanent seat on the MPO board. Early consultation with all member agencies may avoid future conflicts with implementation of the RTP including the SCS (and APS, if applicable).

Pursuant to Government Code Section 65080(b)(2)(G), in preparing an SCS, the MPO shall consider spheres of influence that have been adopted by Local Agency Formation Commissions (LAFCOs) within the region. MPOs should also consult with LAFCOs regarding special districts within the region that provide property-related services such as water or wastewater services, and should consult with these regional special districts, as appropriate, during development of an SCS (and APS if applicable).

Additionally, MPOs should consider consultation with school districts within their region during development of the RTP. School-related trips constitute a significant portion of all vehicle trips. For that reason, MPOs are encouraged to share data on growth projections and consult with

school districts in the development of the SCS (and APS if applicable), especially with respect to land uses and the regional transportation system. Where possible, an SCS should incorporate current and future school needs into the RTP.

For additional information on the consultation process please refer to Section 4.1.

~~4.7~~ 4.8 Interagency Coordination on SCS Development

As the MPO works on RTP development and approval, interagency coordination with both federal and state agencies provides necessary information for the RTP, and notification to all interested parties. Advanced and continuous coordination with all appropriate agencies is highly recommended. MPO development of the RTP should include interagency coordination with, but not limited to, the following entities:

1. Federal agencies including: Federal Highways Administration (FHWA), Environmental Protection Agency (EPA), and Federal Transit Administration (FTA)
2. California Department of Housing and Community Development (HCD)
3. California Air Resources Board (ARB)
4. California Department of Transportation (Caltrans)
5. Appropriate Resources Agencies (see list in Section 4.10)
6. Adjacent MPOs ~~and RTPAs~~ with which the MPO shares a significant amount of interregional travel.

ARB must exchange technical information with MPOs, local air districts, and local governments in developing the regional GHG reduction targets for the MPOs. MPOs are strongly encouraged to participate in the target update process by providing ARB with region-specific target recommendations supported by modeling, technical data and analysis.

The California Transportation Commission (CTC) also encourages State agencies to work with the MPOs to provide the best data and information available as they develop their greenhouse gas emissions modeling methodology together with ARB.

MPOs are also encouraged to work with HCD to incorporate the appropriate Regional Housing Needs Allocation (RHNA) within their RTPs.

A Sequencing Flowchart showing the RTP development and approval process for MPOs as they work with these entities is located in Section 2.7 of the RTP Guidelines.

~~4.8~~ 4.9 Native American Tribal Government Consultation and Coordination

During the development of the RTP, Tribal Government ***consultation*** can be described as the meaningful and timely process of seeking, discussing, and considering carefully the views of leaders ~~representatives~~ of federally recognized Tribal Governments and, where feasible, seeking agreement on important matters. The MPO~~/RTPA~~ can do this by sharing information and conducting meetings with ~~representatives~~ leaders of the federally recognized Tribal Governments during the preparation of the RTP prior to taking action(s) on the plan and by making sure to consider input from the tribe as decisions are made. Consultation should be conducted in a way that is mutually respectful of each party's sovereignty. Tribal Government ***coordination*** is the comparison of the MPOs~~/RTPAs~~ transportation plans, programs, projects

and schedules with similar documents prepared by the tribe. The MPO~~/RTPA~~ needs to ensure consistency with tribal plans and the RTP.

Currently there are ~~110~~ 109 federally recognized tribes in California. The federally recognized Tribal Governments hold inherent power of limited sovereignty and are charged with the same responsibility as other governmental authorities. In addition, California is home to the largest Native American population in the country, including non-federally recognized tribes, and urban Indian communities.

The MPO ~~or RTPA~~ should include a discussion of consultation, coordination and communication with federally recognized Tribal Governments when the tribes are located within the boundary of an MPO/RTPA. The MPO~~/RTPA~~ should establish a government-to-government relationship with each tribe in the region. This refers to the protocol for communicating between the MPOs~~/RTPAs~~ and the Tribal Governments as ~~a~~ sovereign nation~~s~~. This consultation process should be documented in the RTP. The initial point of contact for Tribal Governments should be the Chairperson for the tribe.

The MPO~~/RTPA~~ should develop protocol and communication methods for outreach and consultation with the Tribal Governments. However these protocol~~/~~ and communication methods should be re-evaluated if the agencies are un-successful in obtaining a response during the development of the RTP.

It is important to ensure that efforts in establishing channels of communication are documented in the RTP. For further information and assistance in the consultation process, contact the California Department of Transportation Native American Liaison Branch (NALB) at: http://dot.ca.gov/hq/tpp/offices/ocp/nalb . The NALB webpage also provides contact information for the California Department of Transportation Districts' Native American Liaisons.

As mentioned above, California is home to many non-federally recognized tribes as well as Native Americans living in urban areas. MPOs~~/RTPAs~~ should involve the Native American communities in the public participation processes. Establishing and maintaining government-to-government relations with federally recognized Tribal Governments through consultation is separate from, and precedes the public participation process.

Requirements (Shalls)

Federal: Title 23 CFR part 450.316(c) requires MPOs to involve the federally recognized Native American Tribal Government in the development of the RTP and FTIP. ~~RTPAs shall comply as well.~~ Title 23 CFR part 450.316 (a)(1), the participation plan shall be developed by the MPO in consultation with all interested parties and shall, at a minimum, describe explicit procedures, strategies and desired outcomes. The requirement of including interested parties in the development of the participation plan and the RTP would include federally recognized or non-federally recognized tribes.

State: ~~None~~ Public Resources Code Section 5097.94, and Sections 21073 through 21084.3. Assembly Bill (AB) 52 (2014, Gatto) added Tribal Cultural Resources as an impact under CEQA and required consultation to mitigate those impacts with the California Native American tribes as defined in California Public Resources Code Section 21073. Because RTPs are subject to CEQA and a program EIR is prepared to analyze the impacts of implementing an RTP, AB 52 means that MPOs must consult with tribes with regards to Tribal Cultural Resources as part of the CEQA process.

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State**: None~~

Best Practices:
U.S. Department of Transportation Order 5301.1 ensures that programs, policies and procedures administered by the U.S. DOT are responsive to the needs and concerns of Native Americans. This Order provides a very thorough overview of the various Federal regulations and Executive Orders on this subject. This Order is available at:

http://environment.fhwa.dot.gov/guidebook/vol2/5301.1.pdf

In addition to the best practice noted above, it is recommended that federally and non-federally recognized Tribal Governments be consulted when historic, sacred sites, subsistence resources or traditional collecting properties are present in the MPOs jurisdiction.

A current example of tribal government coordination in California can be found at:

http://www.sandag.org/?subclassid=105&fuseaction=home.subclasshome

A current example of tribal government coordination in a multi-MPO setting is the California Central Valley Tribal Environmental Justice Project:

http://www.catribalej.com/index.html

~~4.9~~ 4.10 Consultation with Resource Agencies

Current federal regulations require MPOs to consult with resource agencies, State and local agencies responsible for land use management, environmental protection, conservation, and historic preservation concerning the development of the RTP. As part of SCS development, MPOs must gather and consider the best available scientific information on resource areas and farmlands within the region which may be impacted by the RTP. State and federal resource agencies may be able to assist MPOs by providing data, maps, or other information.

The consultation efforts shall involve:

1. Comparing transportation plans with State conservation plans, maps and other data, if available; and,

2. Comparing transportation plans with inventories of natural and historic resources, if available.

New federal requirements seek to receive input/comments from resource agencies early in the planning process. The reason for proactive consultation and engagement is to prevent project delays at a later time. In other words, coordinating and consulting with resources agencies early in the planning process, may lead to better coordination, minimal litigation, possible project cost savings and an upfront understanding of resource agency issues.

Some examples of resource agencies that could be included in a more seamless multi-agency process, but are not limited to California Environmental Protection Agency (CalEPA), California

Coastal Commission, and US Fish and Wildlife, U.S. Army Corp of Engineers, California Department of Fish and Game and California Department of Parks and Recreation.
An MPO/~~RTPA~~ shall coordinate and consult with resource agencies on data or information sharing, if available. The following is a preliminary list of resource agencies that should be consulted in the development of the RTP:

1. Federal Highway Administration;
2. Federal Transit Administration;
3. U.S. Environmental Protection Agency;
4. U.S. Army Corps of Engineers;
5. NOAA Fisheries Services;
6. U.S. National Park Service;
7. U.S. National Marine and Fishery Service;
8. U.S. Fish and Wildlife Service;
9. California Coastal Commission;
10. California Energy Commission;
11. California Office of Planning and Research;
12. California Environmental Protection Agency;
13. California Natural Resources Agency;
14. California Water Resources Control Board;
15. California Regional Water Quality Control Board;
16. California Department of Fish and ~~Game~~ Wildlife;
17. California Department of Resources, Recycling, and Recovery;
18. California Air Resources Board;
19. California Department of Parks and Recreation;
20. California Department of Conservation;
21. California State Mining and Geology Board;
22. Any additional California environmental, energy, resource and permit agencies;
23. Bay Conservation and Development Commission (Bay Area);
24. Regional Air Quality Management Districts, and;
25. Private sector carpools / rideshare coordinators.

The challenge is obtaining timely response and comments to the RTP, its programs and projects. It is understandable that these efforts will depend on the specific region. MPOs in the Sacramento Valley and Southern California have chosen to send letters requesting comment/s on plans, programs and projects. When responses are not received these MPOs follow-up on the request by asking for a reason from the resource agency as to why a response was not received.

Interagency Consultation for Transportation Conformity – The transportation conformity rule requires that State and local agencies establish formal procedures to ensure interagency coordination on critical transportation conformity issues. Nonattainment and maintenance areas have adopted consultation procedures to meet these requirements. These procedures are federally enforceable and should be followed for each conformity determination.

Additional guidance regarding federally required consultation with resource agencies during the RTP development process is available in Section 5.3 ~~SAFETEA-LU~~ Federal Environmental Requirements.

Requirements (Shalls)

Federal: Title 23 CFR part 450.32~~24~~(g)(1) & (g)(2) requires that the MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate: (1) Comparison of transportation plans with State conservation plans or maps, if available; or (2) Comparison of transportation plans to inventories of natural or historic resources, if available. In addition, the discussion of mitigation activities required by ~~SAFETEA-LU Section~~ 23 CFR 450.32~~24~~(f)(~~7~~10) (and described more fully in Section 5.3) shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies.

State: California Environmental Quality Act (CEQA), consultation with agencies, governments or individuals that could potentially be impacted by transportation projects in the RTP. Government Code Section 65080(b)(2)(B)(v) requires that MPOs develop a sustainable communities strategy (which is part of the RTP) that shall gather and consider the best practically available scientific information regarding "resource areas" and "farmland" as defined in subdivisions (a) and (b) of Government Code Section 65080.01.

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices: Two prime examples of resource agency consultation relating to Habitat conservation plans can be found at San Joaquin Council of Governments' Habitat Programs and Projects websites:

http://www.sjcog.org/Programs%20&%20Projects/Transportation_files/RTP.htm

http://www.sjcog.org/Programs%20&%20Projects/Habitat_files/Participation.htm

The San Diego Association of Governments' *TransNet* Environmental Mitigation Program (EMP) is unique in that it goes beyond traditional mitigation for transportation projects by including a funding allocation for habitat acquisition, management, and monitoring activities as needed to help implement the Multiple Species Conservation Program (MSCP) and the Multiple Habitat Conservation Program (MHCP). Information regarding the *TransNet* EMP is available at:

http://www.sandag.org/index.asp?projectid=263&fuseaction=projects.detail

~~4.10~~ 4.11 Coordinated Public Transit/Human Services Transportation Plans

The aim of the Coordinated Public Transit/Human Services Transportation Plan is to improve transportation services for persons with disabilities, older adults and individuals with lower incomes by ensuring that communities coordinate the available transit resources. Coordination enhances transportation access, minimizes duplication of services and facilitates the most appropriate cost-effective transportation system possible with available resources.

Federal transit law requires that projects selected for funding under the following Federal Transit Administration (FTA) programs be derived from a coordinated plan: Elderly Individuals and Individuals with Disabilities Program (Title 49 U.S.C Section 5310), Job Access and Reverse Commute Program (Title 49 U.S.C Section 5316), and New Freedom Program (Title 49 U.S.C Section 5317). Information on these programs can be found at:

http://www.dot.ca.gov/hq/MassTrans

MPOs~~/RTPAs~~ are not required to be the lead agency in the development of the coordinated plan. Federal guidance states that the coordinated plan may be developed separately or as a part of the metropolitan transportation planning process. In any case, MPOs~~/RTPAs~~ should ensure that the plan is coordinated and consistent with their regions' metropolitan transportation planning process.

The coordinated plan must be developed through a process that includes representatives of public, private, and non-profit transportation and human services providers and participation by members of the public. The public participation requirements may be shared with those for the development of the RTP.

As with all FTA programs, transit projects selected for funding must be consistent with the RTP and FTIP. Further, the annual list of obligated projects is a planning requirement that will necessitate active involvement by the MPO in those programs.

Requirements (Shalls)

Federal: None

State: None

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450.306(~~g~~h) states the regional planning process should be coordinated and consistent with the preparation of the coordinated public transit-human services transportation plan as required by Title 49 U.S.C. Parts 5310, 5316 and 5317.

~~**State:** None~~

~~**Best Practices:** None~~

Chapter 5

RTP Environmental Considerations

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RTP ENVIRONMENTAL CONSIDERATIONS

5.1 Introduction

This section will briefly discuss the context for environmental requirements, options for RTP environmental document preparation, ~~SAFETEA-LU~~ federal requirements and recommendations, key environmental considerations for best practices and finally, a description of air quality and transportation conformity will be provided.

The federal government has shown its commitment to the environment through the passage of the National Environmental Policy Act (NEPA) in 1969, which requires federal agencies to consider the environmental impacts of their actions. In a similar vein, California passed the California Environmental Quality Act (CEQA) in 1970, which was designed to ensure that public agencies consider the environmental impacts of their decisions.

In California, the environmental review associated with the RTP and the subsequent project delivery process is two-fold. MPOs ~~and RTPAs~~ are responsible for the planning contained in the RTP that precedes project delivery. Typically a local government, consultant or Caltrans is responsible for the actual construction of the project i.e. project delivery. CEQA applies to the planning document (RTP) while both NEPA and CEQA may apply to the individual projects that implement the RTP during the project delivery process.

A change to transportation analysis in environmental review under CEQA occurred with the Governor's approval of SB 743. It requires an update in the metric of transportation impact used in CEQA from Level of Service and vehicle delay to one that promotes the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. Per ARB Vision Model results, reductions in VMT growth are needed to achieve sufficient greenhouse gas emissions reduction for climate stabilization, as reflected in executive orders on 2030 and 2050 greenhouse gas targets. ~~when determining significant transportation impacts. This helps better support active transportation, greenhouse gas emission reduction, and smart growth.~~ The regulatory language (CEQA Guidelines changes) to implement the law are pending, though VMT has been identified by the Governor's Office as the preferred metric to determine significant impacts. A future update of the RTP Guidelines will capture any "shoulds" or "shalls" resulting from the formal rulemaking process.

Given that protection of the environment is an important public policy goal and it is an important aspect of public acceptance during project delivery, best regional planning practices would seek to plan and implement transportation projects that would avoid or minimize environmental impacts.

5.2 Environmental Documentation

The RTP planning document as well as the projects listed in it are considered to be projects for the purposes of CEQA. Subsequent RTP amendments or updates are discretionary actions that can also trigger CEQA compliance. As defined in CEQA statute section 21065, a project means "an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following: (a) An activity directly undertaken by any public agency or (b) An activity undertaken

by a person which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies".

To initiate CEQA compliance, the MPO as the lead agency determines if the proposed action is a project and whether the project is statutorily or categorically exempt. If the project is not exempt from CEQA, an Initial Study or equivalent environmental assessment is completed. Based on the outcome of the Initial Study the appropriate type of environmental document is then prepared. The Initial Study can indicate the use of an Environmental Impact Report (EIR), a Mitigated Negative Declaration (MND) or a Negative Declaration (ND). Additionally, there are several types of EIRs such as a Master EIR, a Project EIR or a Program EIR.

Program EIR

Many MPOs prepare a program Environmental Impact Report to analyze the environmental impacts of implementing their RTP. The purpose of the program EIR is to enable the MPO to examine the overall effects of the RTP i.e. broad policy alternatives, program wide mitigation, growth inducing impacts and cumulative impacts can be considered at a time when the agency has greater flexibility to avoid unnecessary adverse environmental effects. Additionally, environmental documents subsequently prepared for the individual projects contained in the RTP can be tiered off of the Program EIR thus saving time and reducing duplicative analysis (See glossary for a definition of 'tiering'). The program EIR is a device that was originally developed by federal agencies under NEPA. The County of Inyo v. Yorty court case established its use under CEQA.

Changes to the RTP/FTIP

When the MPO~~/RTPA~~ modifies its RTP/FTIP, it must determine whether the proposed changes have the potential to impact the environment and trigger CEQA review. Often changes to the RTP do not require the detailed analysis of an EIR. An abbreviated or focused type of CEQA document will usually suffice. The most common alternatives to an EIR, MND or ND are an Addendum, a Supplement, or a Subsequent environmental document.

Addendum

An Addendum may be prepared when minor technical changes or additions are made to the RTP. The Addendum makes the prior EIR, MND or ND adequate when the proposed changes to the RTP do not create any new or substantially more severe significant environmental impacts. An addendum does not require public circulation.

Supplement

A Supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised. The supplement only needs to meet the circulation and public review requirements of a *draft* EIR.

Subsequent

A Subsequent EIR, MND or ND is used when there are substantial or major changes in the project, in the circumstances of the project or when new environmental information is discovered. A subsequent EIR, MND or ND is intended to be a complete environmental document and it requires the same full level of circulation and public review as the previous EIR, MND or ND.

NEPAs Applicability to the RTP

NEPA does not apply to the RTP. In the *Atlanta Coalition on the Transportation Crisis, Inc. v. Atlanta Regional Commission*, 559 F.2d 1333 (5th Cir. 1979) court case, federal judges found

that "Congress did not intend NEPA to apply to state, local or private actions…" The courts recognized the development of the RTP and TIP as a matter of state and local sovereignty.

However, NEPA review does apply to the individual projects identified in the RTP during the project delivery process when the individual projects are federally funded and/or a federal approval is required (e.g. a permit for wetlands impacts).

Requirements (Shall)
~~**Federal: None**~~
State: Public Resources Code 21000 et seq, Environmental Protection, and CEQA guidelines section 15000 et seq.

~~**Recommendations(Should)**~~
~~**Federal: None**~~
~~**State: None**~~

Best Practices: Additional information regarding the CEQA process and guidelines for implementation can be found at:

www.opr.ca.gov

http://opr.ca.gov/index.php?a=ceqa/index.html

http://ceres.ca.gov/ceqa/

http://www.califaep.org/CEQA

http://ag.ca.gov/globalwarming/ceqa.php

California Air Pollution Control Officers Association (CAPCOA) White Paper on CEQA and Green House Gases:
http://www.capcoa.org/modelpolicies/CAPCOA%20Model%20Policies%20for%20Greenhouse%20Gases%20in%20General%20Plans%20-%20June%202009.pdf

5.3 ~~SAFETEA-LU~~ Federal Environmental Requirements

~~SAFETEA-LU~~ Federal requirements ~~in Section 6001, Metropolitan Transportation Planning,~~ are intended to enhance the consideration of environmental issues in the transportation planning process. Pursuant to Title 23 CFR Part 450.32~~42~~, the RTP must provide a discussion of potential environmental mitigation activities and areas, including those mitigation activities that might maintain or restore the environment that is affected by the plan. This mitigation discussion must happen in consultation with Federal, State and Tribal land management and wildlife regulatory agencies. Additionally, federal regulations ~~SAFETEA-LU~~ contain a planning process mandate that requires the MPO to compare the RTP with available state conservation plans or maps and inventories of natural or historic resources. This comparison is facilitated by the requirement to "consult as appropriate with state and local agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation".

Requirements (Shall)
Federal:
Title 23 CFR Part 450.32~~24~~(f)(~~7~~10):

Requires that the RTP shall include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies.

Title 23 CFR Part 450.32~~24~~(g)(1) and (2):

Requires that the MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate: (1) Comparison of transportation plans with State conservation plans or maps, if available; or (2) Comparison of transportation plans to inventories of natural or historic resources, if available.

Title 23 CFR Part 450.306(~~a~~b)(5):

Requires that the metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following factors: Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns. See Section 5.5 for key environmental considerations for best practices as well as best practices described below.

~~**State:** None~~

~~**Recommendations(Should)**~~

~~**Federal:** None~~

~~**State:** None~~

Best Practices: Advanced mitigation planning to identify areas for mitigation prior to project-by-project discussion is a best practice. Elkhorn Slough Early Mitigation Project and Regional Advance Mitigation Planning (RAMP) are important examples of such efforts. By coordinating early with agencies responsible for project-level permitting to evaluate the individual and cumulative impacts of one or several projects and focusing mitigation on regional priority conservation opportunities, ecosystem-scale conservation needs can be met, providing more effective conservation and mitigation. In addition, the time and cost inefficiency of project-by-project review, permitting, and mitigation can be avoided thereby making mitigation more efficient. MPOs ~~and RTPAs~~ may consider using RAMP in siting and mitigating for infrastructure projects, in order to maximize time efficiency, reduce mitigation costs, and protect regional natural resources.

RTPs should include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. This discussion should be developed in consultation with Federal, State and Tribal land management, wildlife, and regulatory agencies.

The regional planning process should be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following factors: Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.

http://elkhornslough.ucdavis.edu/

http://www.environment.fhwa.dot.gov/ecological/eco_toc.asp

5.4 ~~SAFETEA-LU~~ Federal Environmental Recommendations

Appendix A - Linking the Transportation Planning and NEPA processes
Appendix A of Title 23 CFR Part 450 encourages environmental information developed during the transportation planning process to be applied to the project delivery process. The goal is to make planning decisions more sustainable and to maximize the effectiveness of mitigation strategies. Appendix A is optional. It provides details on how the information and analysis from the RTP can be incorporated into and relied upon in the NEPA documents prepared for the individual projects that will implement the RTP in the future. Appendix A presents environmental review as a continuum of sequential study, refinement, and expansion of information. The actual text of Appendix A to Title 23 CFR Part 450 is contained in Appendix D of this document. More guidance is available in Appendix E, which addresses the legal aspects of integrating planning and project delivery.

~~**Requirements (Shalls)**~~
~~**Federal:** None~~
~~**State:** None~~

Recommendations (Shoulds)
Federal: Title 23 CFR Part 450.3~~00~~18 and Appendix A to Part 450 "Linking Planning and NEPA" describes the steps for streamlining the project delivery process by providing environmental information in the RTP.
~~**State:** None~~

Best Practices: Implementation of the strategies contained in Appendix A of Title 23 CFR Part 450 is a state of the art best practice.

Programmatic Mitigation
On May 27, 2016, the FHWA and Federal Transit Administration issued a final rule that updates regulations governing the development of metropolitan transportation plans including an updated section on programmatic mitigation. This rule codifies changes in 23 CFR Section 450.214 on the development of programmatic mitigation plans and indicates that "a State may utilize the optional framework to develop programmatic mitigation plans as part of the statewide transportation planning process to address the potential environmental impacts of future transportation projects." The FHWA supports an ecological approach to planning infrastructure and transportation projects and provides guidance on establishing a Regional Ecological Framework (REF). *Eco-logical* is a nine-step, voluntary framework that identifies an ecosystem approach to developing infrastructure projects. It outlines a framework for partners to integrate their planning processes, share data, and prioritize areas of ecological significance in order to harmonize economic, environmental, and social needs and objectives. Regionally significant resources like fish passage, terrestrial and aquatic habitat connectivity, migration corridors, and coastal trails can be incorporated into the regional transportation planning process. In addition, regional and local planning stakeholders can coordinate on mitigation strategies and conservation priorities as part of the regional transportation planning process. If the region elects to include the preparation of a REF or programmatic mitigation plan as part of the Regional Transportation Plan update, the region can notify other stakeholders to allow for a more collaborative partnering and planning effort.

https://www.environment.fhwa.dot.gov/ecological/ImplementingEcoLogicalApproach/

5.5 Key Environmental Considerations for Best Practices

The intent of this section is to highlight those environmental resources that typically require avoidance alternatives and mitigation. Taking these environmental resources and laws into account during the transportation planning process can expedite the delivery of the projects that are contained in the RTP. The transportation planning process and the NEPA environmental analysis required during project delivery can work in tandem with the results of the transportation planning process informing the NEPA process. The RTP can identify plan-level environmental constraints and consider potential impacts that could allow projects in the plan to be modified to avoid or minimize impacts. For a more in-depth discussion of potential environmental impact and resource areas, please see Volume 1 of the Standard Environmental Reference at:

http://www.dot.ca.gov/ser/vol1/vol1.htm

During project delivery SAFETEA-LU Section 6002, (Efficient Environmental Reviews for Project Decision-making) sets forth a new environmental review process. The first step under Section 6002 is to initiate the environmental review process by notifying FHWA's Secretary of the type of work, termini, length, general location of the project, and a listing of anticipated federal permits. One means of initiating the process is to include the required information in the discussion of each EIS-level project that is contained in the RTP. The resource areas of concern are enumerated below. **(Update to MAP-21/FAST as appropriate)**

Wetlands

Wetlands and other waters are protected under a number of laws and regulations, including the federal Clean Water Act, federal Executive Order for the Protection of Wetlands (E.O. 11990), and state Porter-Cologne Water Quality Control Act and parts of the state Fish and Game Code. Section 404 of the Clean Water Act establishes a permit program that prohibits any discharge of dredged or fill material into wetlands or other "waters of the United States" if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (ACOE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

The Executive Order for the Protection of Wetlands (E.O. 11990) states that a federal agency, such as the Federal Highway Administration, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds that there is no practicable alternative to the construction and the proposed project includes all practicable measures to minimize harm.

At the state level, primarily the Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (RWQCB) regulate wetlands and waters. (In certain circumstances, the California Coastal Commission or Bay Conservation and Development Commission may also be involved.) Impacts on wetlands, lakes, streams or rivers may require a Lake or Streambed Alteration agreement with CDFG. The RWQCB issues water quality certifications in compliance with Section 401 of the Clean Water Act.

Parks, Refuges, Historic Sites

Section 4(f) of the Department of Transportation Act (Title 49 U.S.C. Section 303) states that FHWA and FTA may not approve the use of land from a significant publicly-owned park, recreation area, wildlife and waterfowl refuge, or any significant historic site unless a determination is made that there is no other feasible and prudent alternative to the use of that land. Section 4(f) evaluations require the development of an avoidance alternative, however, if no feasible choices exist, extensive planning must be done to minimize harm to the property resulting from such use.

http://www.parks.ca.gov/

California Coastal Trail (CCT)

The CCT is a state-mandated trail system pursuant to the passage of SB 908 in 2001. AB 1396 in 2007 added Section 65080.1 to the Government Code, which mandates that provision for the CCT be provided in each RTP for those MPOs/~~RTPAs~~ located along the coast. More information and guidance relative to the CCT can be found in Section 6.13 and at:

http://www.scc.ca.gov/

www.coastal.ca.gov

http://www.scc.ca.gov/webmaster/pdfs/CCT_Siting_Design.pdf

Floodplains

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative.

Threatened and Endangered Species

The primary federal law protecting threatened and endangered species is the federal Endangered Species Act (ESA) (Title 16 USC Section 1531 et seq.). This act provides for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not taking actions likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat.

California has enacted a similar law at the state level, the California Endangered Species Act (CESA) (Fish and Game Code, 2050, et seq.). CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats.

http://www.dfg.ca.gov/

http://bios.dfg.ca.gov/

Cumulative Impacts

As defined in CEQA, cumulative impacts refer to "two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts". Because the RTP addresses long-range future transportation improvements, cumulative impacts are inherent and need to be fully discussed within the environmental document. Guidance on preparing cumulative impact analysis is available at:

http://www.dot.ca.gov/ser/cumulative_guidance/approach.htm.

Growth-Related Indirect Impacts

Growth-related indirect impacts are those impacts associated with a project or plan that would encourage or facilitate development or would change the location, rate, or type, or amount of growth. RTPs typically contain proposed actions that will be built along a new alignment and/or provide new access and those are the types of projects that will typically require a growth-related impact analysis. Where such impacts are identified, appropriate and reasonable steps to avoid or minimize indirect impacts can be considered early in the process, and incorporated into the RTP and its associated environmental document. Additional guidance on growth-related indirect impacts is available at:

www.dot.ca.gov/ser/Growth-related_IndirectImpactAnalysis/gri_guidance.htm

Climate Change/GHG Emissions

State CEQA regulations require an analysis of the impacts of greenhouse gas (GHG) emissions on climate change. The transportation sector is a significant source of GHG emissions and therefore the analysis of these emissions indirectly resulting from the implementation of RTPs is especially important to analyze and mitigate. Each MPO must identify thresholds of significance for GHG emissions, disclose whether the RTP could result in exceeding those thresholds, and propose feasible and enforceable mitigation measures to reduce or minimize the emissions. Simply demonstrating that an RTP can achieve the GHG reduction targets set by the ARB is not sufficient to conclude that the RTP has no impact on climate change.

Requirements (Shalls)

Federal: Title 23 CFR Part 450.306(~~a~~b)(5) requires that the metropolitan planning process addresses protection and enhancement of the environment, among other planning factors

State: Government Code Section 65080(b)(2)(B)(v) requires that MPOs develop a sustainable communities strategy (which is part of the RTP) that shall gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Government Code Section 65080.01.

Recommendations (Shoulds)

Federal: Title 23 CFR 450.3~~00~~18 and Appendix A to Part 450 "Linking Planning and NEPA" describe the steps for streamlining the project delivery process by providing environmental information in the RTP.

State:

Best Practices: Voluntarily addressing all of the applicable topics noted above during the preparation of the RTP would be considered as a best practice. As a best practice to comply with the requirements of CA Government Code Section 65080(b)(2)(b) as well as Title 23 CFR Parts 450.32~~2~~4(f)(~~7~~10), 450.32~~2~~4(g)(1) and (2), MPOs may develop a Regional Open Space and Conservation Area Framework that identifies and considers "resource areas" and "farmland" defined in Government Code Section 65080.01(a) and (b).

For additional information regarding regional open space conservation please see the following EPA website:

http://www.epa.gov/dced/openspace.htm

5.6 Project Intent Statements/Plan Level Purpose and Need Statements

The 2003 RTP Guidelines Supplement referred to "**Project Intent Statements**" which were defined as **Plan Level Statements of Purpose and Need**. A Plan Level Statement of Purpose and Need is a short statement, which serves as a justification for a project or a group of projects. These brief plan level justifications would be contained in the RTP. An example of a Plan Level Statement of Purpose and Need would be the problem of reducing congestion on a specific route. The Plan Level Statements of Purpose and Need briefly identify the transportation needs or problems and describe the intended outcome of the project(s) that would meet these needs or solve the identified problems.

A more detailed, project specific **Project level Purpose and Need Statement** is written during the project delivery process and is contained in the project initiation document (Project Study Report) and the subsequent environmental document.

MPOs/~~RTPAs~~ may wish to prepare Plan Level Statements of Purpose and Need during the development of the RTP for the following reasons:

1. To provide justification for the lead agency's projects in the RTIP
2. To justify expenditure of transportation funds to the public and the CTC
3. During project selection, to provide the rationale for selecting specific projects over other projects
4. To provide the foundation for Project Level Purpose and Need information in the environmental documents.
5. To provide consistent project justification from planning through project Implementation.

~~**Requirements (Shalls)**~~
~~**Federal:** None~~
~~**State:** None~~

Recommendations (Shoulds)
~~**Federal:** None~~
State: The 2003 RTP Guidelines Supplement states that the RTP should include a project justification that identifies the specific need for the project and describes how these needs or problems will be addressed.

Best Practices

http://www.stancog.org/rtp.shtm

5.7 Air Quality and Transportation Conformity

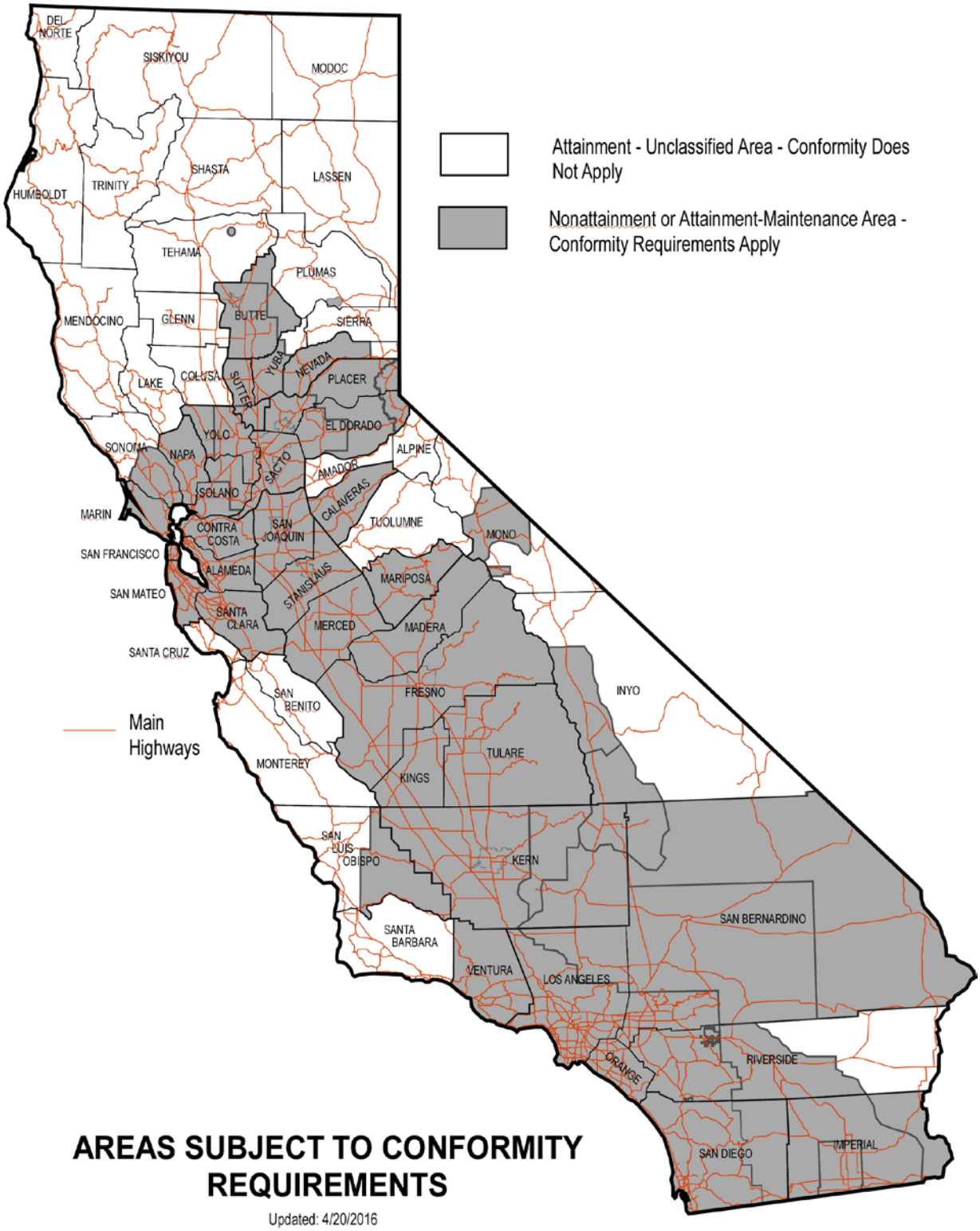
Federal and State Clean Air Act

The Clean Air Act as amended in 1990 is the primary federal law that governs air quality. This law mandates the US EPA to establish ~~sets~~ the standards for the quantity of pollutants that can be in the air. Subsequently, the US EPA revises the standards from time to time. These standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2). The State Implementation Plan (SIP) is the statewide plan for achieving the goals of the Clean Air Act and describes how the NAAQS will be met. The SIP has both statewide and regional components. The California Air Resources Board is responsible for submitting the SIP to the U.S. Environmental Protection Agency (EPA), and for developing and implementing statewide control measures such as those related to on-road mobile sources (vehicle emission controls).

There is a California Clean Air Act in the Health and Safety Code that is generally similar in concept to the Federal Clean Air Act. Under the California Clean Air Act, the California Air Resources Board sets and updates State air quality standards. The State air quality standards are usually more stringent than the Federal, but the State air quality planning structure does not include the fixed attainment deadlines and conformity process found in the Federal program.

Air pollution control and air quality management districts (APCD or AQMD) perform regional air quality planning in consultation with the MPO~~/RTPA~~, including development of on-road mobile source emission budgets that are part of the State Implementation Plan (SIP) required by the Federal Clean Air Act. APCDs and AQMDs are the main implementation agencies for stationary source emission control programs.

The U.S. EPA designates an area as “attainment” if the area meets the national ambient air quality standards (NAAQS) mandated by the Clean Air Act. If the area does not meet the NAAQS, it is designated as a non-attainment area. Once a non-attainment area attains a NAAQS, ~~if~~ the area may develop~~s~~ a maintenance SIP and submits a re-designation request, the U.S. EPA can re-designate the area as a “maintenance” area. The shaded areas on the map below illustrate the areas of the State that have not attained, or have attained with a maintenance SIP, the National Ambient Air Quality Attainment Standards. All of California except Lake County fails to attain one or more of the State ambient air quality standards.


Attainment - Unclassified Area - Conformity Does Not Apply
Nonattainment or Attainment-Maintenance Area - Conformity Requirements Apply
Main Highways
DEL NORTE
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
LAKE
COLUSA
SUTTER
YUBA
NEVADA
PLACER
YOLO
EL DORADO
SONOMA
NAPA
SACTO
ALPINE
AMADOR
SOLANO
CALAVERAS
MARIN
CONTRA COSTA
SAN JOAQUIN
TUOLUMNE
MONO
SAN FRANCISCO
ALAMEDA
STANISLAUS
MARIPOSA
SAN MATEO
SANTA CLARA
MERCED
MADERA
SANTA CRUZ
SAN BENITO
FRESNO
INYO
MONTEREY
TULARE
KINGS
SAN LUIS OBISPO
KERN
SAN BERNARDINO
SANTA BARBARA
VENTURA
LOS ANGELES
ORANGE
RIVERSIDE
SAN DIEGO
IMPERIAL
AREAS SUBJECT TO CONFORMITY REQUIREMENTS
Updated: 4/20/2016
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SIP Conformity Requirement

In nonattainment and maintenance areas, federal regulations require that RTPs, FTIPs and Federally funded or approved highway and transit projects demonstrate transportation conformity. Under the 1990 Federal Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to the SIP (Clean Air Act Section 176 (c), codified in 42 USC 7506(c)). The U.S. EPA has issued extensive regulations covering how conformity is determined for transportation planning, programming, and projects in 40 CFR 93 Subpart A. Under the EPA regulations, the RTP's regional conformity analysis must include all regionally significant transportation (road and transit) projects regardless of funding source.

RTP Conformity

Transportation conformity is intended to ensure that Federal funding and approval are given to those transportation activities that support the purpose and goals of the SIP. Conformity ensures that these transportation activities do not degrade air quality and that they support attainment of the NAAQS. The MPO and the U.S. DOT (FHWA/FTA) have a responsibility to ensure that the RTP conforms to the SIP.

Transportation conformity requirements apply to all U.S.EPA designated non-attainment and maintenance areas. When areas are designated as non-attainment for the first time, or for a new NAAQS, a conformity determination must be made within one year of the effective date of the designation. RTP and FTIP amendments, Federal project approvals and Federal funding are all contingent upon the conformity determination that shows that the total emissions projected in the RTP and FTIP are within the motor vehicle emission limits or 'budgets' established in the SIP.

No new transportation conformity requirements were created by SAFETEA-LU. However, previous requirements were modified to shorten or lengthen the time period for conformity determinations and re-determinations, to add or substitute transportation control measures (TCMs) in an approved SIP, and to adjust the frequency of conformity determinations. The Clean Air Act section 176(c) (42 USC 7506(c)) was amended, and U.S. EPA regulations at 40 CFR 93 Subpart A have been amended to conform to the Clean Air Act changes, as noted below.

Requirements (Shalls):

Federal: RTPs prepared by MPOs in areas subject to conformity requirements shall meet the requirements of Title 42 USC Section 7506(c) and Title 40 CFR Part 93 Subpart A regarding transportation conformity.

Title 40 CFR Part 93.104(b)(3) and (c)(3) sets the required frequency of transportation conformity determinations for RTPs and FTIPs at four years; Title 42 USC Section 7506(c)(2)(E) and Title 40 CFR Part 93.104(e) provide two years to determine conformity after new SIP motor vehicle emissions budgets are either found adequate, approved or promulgated; Title 42 USC Section 7506(c)(9) adds a one-year grace period before the consequences of a conformity lapse apply; Title 42 USC Section 7506(c)(4)(e) and Title 40 CFR Part 93.105 streamline requirements for conformity SIPs; and, Title 42 USC Section 7506(c)(8), Title 40 CFR Part 93.113, and EPA's policy January 2009 guidance (EPA420-B-09-002) identify procedures for areas to use in substituting or adding transportation control measures (TCMs) to approved SIPs.

Transportation Control Measures

The RTP shall discuss ways in which activities in the plan will conform to the SIP, including TCM implementation. To achieve consistency between the RTP and the SIP, all TCMs identified in the SIP must be identified in the RTP by MPOs in areas subject to conformity requirements (Title 40 CFR Part 93.113).

The conformity analysis prepared for the RTP shall describe both completed TCMs and TCMs that are underway. TCMs that are included in the SIP must be implemented in a timely fashion. Implementation of the TCMs must be coordinated with the SIP implementation schedule. When there is a delay in TCM implementation, the conformity analysis document must describe the measure and the steps that the MPO~~/RTPA~~ is taking to address the delay. TCM projects must receive priority for funding.

Interagency Consultation
There is a formal interagency consultation requirement in areas subject to conformity requirements; see Title 40 CFR Parts 93.105 and 93.112. Consultation for key decisions related to the conformity analysis (and to many individual projects in areas subject to conformity because of particulate matter NAAQS nonattainment or maintenance) must include FHWA, FTA, U.S. EPA, ARB, Caltrans, the MPO, and local transit providers. The air pollution control/air quality management districts(s) shall also be included. Identifying the consultation partners and defining the form of local consultation procedures is the core of the "Conformity SIP" required by Title 40 CFR Part 51.390.

State: None. There is no conformity process in the California Clean Air Act. However, air quality is normally addressed as part of the CEQA environmental documentation for the RTP.

Recommendations (Shoulds)
Federal: Title 42 USC Section 7506(c)(7)(A) and Title 40 CFR Part 93.106 provide an option for reducing the time period addressed by conformity determinations. Normally, a regional conformity analysis must cover at least 20 years, but under certain circumstances the time period covered may be reduced to not less than 10 years.

~~**State:** None~~

Best Practices The conformity analysis should be prominently referenced in the RTP document. For more detailed information about transportation conformity please see the following key websites:

http://www.dot.ca.gov/hq/env/air/index.htm

http://www.fhwa.dot.gov/environment/air quality/index.cfm

http://www.epa.gov/otaq/stateresources/transconf/index.htm

5.8 Achievement of SB375 GHG Targets

State law requires that an MPO demonstrate that its SCS would, if implemented, achieve the GHG reduction targets set by ARB. These targets are established for each MPO region, for the years 2020 and 2035. MPOs are required to submit their final SCSs and quantification of the GHG emissions reductions to ARB for review and concurrence with the MPO's determination. If the SCS would not achieve the targets, then the MPO must prepare and adopt an Alternative

Planning Strategy, describing the obstacles to achievement of the targets and alternative measures that would need to be taken to achieve the targets.

Chapter 6

Regional Transportation Plan Contents

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6.1 Summary of RTP Components

The development of the RTP is based on state and federal statutory and regulatory requirements in addition to CTC policy direction. As per Government Code 65080, each MPO/~~RTPA~~ shall prepare and adopt an RTP directed at achieving a coordinated and balanced regional transportation system including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement and aviation. In addition, the RTP shall be action oriented and pragmatic, considering both short-term (0-10 years) and long-term (10-20 years) periods. The RTP shall be an internally consistent document and shall include all of the following:

The Policy Element

The purpose of the Policy Element is to identify legislative, planning, financial and institutional issues and requirements, as well as any areas of regional consensus. Consider referring to the CTP policy framework which provides goals and policies that can help with development of policies and strategies at the most regional level. The Policy Element presents guidance to decision-makers of the implications, impacts, opportunities, and foreclosed options that will result from implementation of the RTP. Moreover, the Policy Element is a resource for providing input and promoting consistency of action among state, regional and local agencies including; transit agencies, congestion management agencies, employment development departments, the California Highway Patrol, private and public groups, tribal governments, etc. California statutes state that each RTP shall (Government Code Section 65080 (b)) include a Policy Element that:

1. Describes the transportation issues in the region;
2. Identifies and quantifies regional needs expressed within both short and long-range planning horizons (Government Code Section 65080 (b) (1));and,
3. Maintains internal consistency with the Financial Element and fund estimates.

State law requires that the objectives shall (Government Code Section 65080 (b)(1)) be linked to short-range and long-range transportation implementation goals or horizons. Each objective should be consistent with the needs identified in the RTP as a means of strengthening the linkage between statewide system planning and ultimate project implementation. The RTP shall consider factors specified in Section 134 of Title 23 of the United States Code.

The Policy Element should clearly convey the region's transportation and land use policies. As part of this Element, the discussion should: (1) relay how these policies were developed, (2) identify any significant changes in the policies from the previous plans and (3) provide the reason for any changes in policies from previous plans. The Policy Element should clearly describe the SCS strategies, including land use, transportation, and other measure intended to reduce GHG emissions from passenger travel. It should also explain how the financial commitments are consistent with and support the land use pattern and personal mobility objectives of the RTP.

While maintaining the current transportation network is often a priority for MPOs, MPOs need to be planning ahead for a future in which technology will transform the way that people move and live. MPOs are ideally positioned to anticipate and be responsive to the needs of future generations.

~~MPOs/RTPAs with populations that exceed 200,000 persons have the option to quantify a set of indicators~~ Although not required by law, MPOs should identify a set of indicators that will be used to assess the performance of the RTP, including, but not limited to, all of the following:

A. Measures of mobility and traffic congestion;
B. Measures and needs for road and bridge maintenance and rehabilitation;
C. Measures of means of travel;
D. Measures of safety reliability and security;
E. Measures of equity and accessibility;
F. Other sources of data and information may also be used, such as a regions own source/s of information and data.

In addition, the RTP should identify the criteria that the MPO used to select the transportation projects on the constrained and unconstrained project lists.

The Sustainable Communities Strategy (SCS)

The second component of the RTP (for MPOs only) is a Sustainable Communities Strategy (SCS), as required by Government Code Section 65080(b)(2)(B). The SCS is statutorily required to:

1. Identify the general location of uses, residential densities, and building intensities within the region.
2. Identify areas within the region sufficient to house all the population of the region, including all economic segments of the population over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth.
3. Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Government Code Section 65584.
4. Identify a transportation network to service the transportation needs of the region.
5. Gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Government Code Section 65080.01.
6. Consider the state housing goals specified in Sections 65580 and 65581.
7. Utilize the most recent planning assumptions, considering local general plans and other factors (see Section 6.25 for additional guidance).
8. Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the ARB.
9. Provide consistency between the development pattern and allocation of housing units within the region (Government Code 65584.04(i)(1)
10. Allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Section 7506)

The Action Element

The third major component as required in Government Code Section 65080 states that RTPs shall have an Action Element. The Action Element of the RTP must describe the programs and actions necessary to implement the RTP, including the SCS, and assigns implementation responsibilities. The action element may describe the transportation projects proposed to be completed during the RTP plan horizon, and must consider congestion management activities

within the region. All transportation modes (highways, local streets and roads, mass transportation, rail, maritime, bicycle, pedestrian and aviation facilities and services) are addressed. The action element is critical to providing clear direction about the roles and responsibilities of the MPO and other agencies to follow through on the RTP's policies and projects. It consists of short and long-term activities that address regional transportation issues and needs. In addition, the Action Element should also identify investment strategies, alternatives and project priorities beyond what is already programmed.

The Action Element is divided into two sections. The first section includes a discussion of the preparatory activities such as identification of existing needs, assumptions, and forecasting and potential alternative actions. The second section addresses the data and conclusions.

The Financial Element

The Financial Element is also statutorily required. The Financial Element is fundamental to the development and implementation of the RTP. It identifies the current and anticipated revenue sources and financing techniques available to fund the planned transportation investments described in the Action Element. The intent of the Financial Element is to define realistic financing constraints and opportunities. Finally, with this financing information, alternatives are developed and used by State and local decision-makers to determine which projects should be planned for funding.

There are six major components that constitute the Financial Element:

1. Summary of costs to operate and maintain the current transportation system;
2. Estimate of costs and revenues to implement the projects identified in the Action Plan;
3. Inventory of existing and potential transportation funding sources;
4. List of candidate projects if funding becomes available;
5. Potential funding shortfalls; and,
6. Identification of alternative policy directions that affect the funding of projects.

Government Code Section 65080 (b)(4)(C) states that the MPO or county transportation agency, whichever entity is appropriate, shall consider financial incentives for cities and counties that have resource areas or farmland, as defined in Government Code Section 65080.01, for the purposes of, for example, transportation investments for the preservation and safety of the city street or county road system and farm to market and interconnectivity transportation needs. The MPO or county transportation agency, whichever entity is appropriate, shall also consider financial assistance for counties to address countywide service responsibilities in counties that contribute towards the greenhouse gas emission reduction targets by implementing policies for growth to occur within their cities.

It is very important that RTPs reflect the transportation needs of the specific region. There are State statutory content requirements for the Policy, Action and Financial Elements of the RTP; however, there is flexibility in choosing a format for the presentation of this information. Most MPOs/RTPAs use the categories of Policy, Action and Financial to organize their RTP. Now pursuant to Government Code Section 65080(b)(2), MPOs are also required to incorporate a Sustainable Communities Strategy as part of the RTP.

Consistency between the SCS and the RTP Policy, Financial and Action Elements

The RTP shall be an "internally consistent" document. This means that the contents of the Policy, Action, Financial Elements, and Sustainable Communities Strategy shall be consistent

with one another. As a result, transportation investments and the forecasted development pattern in the SCS should be complementary and not contradictory. For information regarding transportation projects exempt from the internal consistency provisions of SB 375 pursuant to Government Code Section 65080(b)(2)(L) please refer to Section 6.16 of these Guidelines.

For more detailed information regarding the contents of an SCS please refer to Section 6.24 of the RTP Guidelines.

Other RTP Contents:

The RTP should also include the following:

1. Executive Summary – An Executive Summary of the RTP as an introductory chapter. The Executive Summary should provide a regional perspective, and identify the challenges and transportation objectives to be achieved.
2. Reference to regional environmental issues and air quality documentation needs.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.32~~24~~
State: California Government Code Section 65080
~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

6.2 Financial Overview

Federal statute and regulations and California State statute requires RTPs to contain an estimate of funds available for the 20-year planning horizon. This discussion of financial information is fundamental to the development and implementation of the RTP. The financial portions of the RTP identify the current and anticipated revenue sources and financing techniques available to fund the planned transportation investments described in other portions of the RTP. The intent is to define realistic financing constraints and opportunities. All projects, except illustrative projects i.e. unconstrained projects, must be fully funded in order to be included in the RTP. With this financing information, alternatives are developed and used by the MPO/~~RTPA,~~ local agencies and State decision-makers in funding transportation projects. During programming and project implementation the total cost of the project is refined and broken out by cost per phase.

~~Section 6001 of Public Law 109-59, (SAFETEA-LU)~~ Federal law requires each transportation plan and each transportation improvement program prepared by the MPO to include a financial plan that demonstrates how the adopted Plan and TIP can be implemented. The Financial Plan should also indicate resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan and FTIP, identify innovative financing techniques to finance projects, programs and strategies, and recommend any additional financing strategies for needed projects and programs. The Federal statutory requirements are codified in Title 23 USC Section 134(i)(2)(C) and 134(j)(2)(B). Federal regulations pertaining to financial planning and constraint for statewide and metropolitan transportation plans and programs are codified in Title 23 CFR Part 450.

There are six major components that should be addressed in the financial portion of the RTP:

1. Projected Available Funds – The MPO/~~RTPA,~~ public transit operators and the State shall cooperatively develop estimates of funds that will reasonably be available to support RTP implementation. All anticipated public and private financial resources available over the next 20 years, including estimated highway, local streets and roads, bicycle and pedestrian and transit funds, shall be identified. The financial plan shall include recommendations for additional financing strategies. New funding sources and strategies shall also be identified. Beginning December 11, 2007, all revenue estimates for the financial plan must use an inflation rate that reflects the "year of expenditure dollars" developed cooperatively by the MPO, State and transit operators.

2. Projected Costs – The MPO shall take into account all projects and strategies proposed for funding with Federal, State, local and private fund sources in developing the financial plan. Estimate of costs to implement the projects identified in the four year FTIP and the RTP must be included. Beginning December 11, 2007, both the revenue and construction cost estimates must use inflation rates to reflect "year of expenditure dollars" based on reasonable financial principles and information developed cooperatively by the MPO/~~RTPA,~~ State and public transportation operators.
3. Projected Operation and Maintenance Costs – The financial plan shall contain system level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways and public transportation. Best practices in developing the RTP financial plan would also include revenue sources for the operation and maintenance of local streets and roads as well as bicycle and pedestrian facilities. A summary of costs to operate and maintain the current transportation system should be included. This should be identified by mode and include the cumulative cost of deferred maintenance on the existing infrastructure. Financial plans that support the RTP process must assess capital investment and other measures necessary to ensure the preservation of:

    A) The existing transportation system, including requirements for operational improvements;
    B) Resurfacing, restoration, and rehabilitation of existing and future major roadways, as well as operations, maintenance, modernization, and rehabilitation of existing and future transit facilities.

4. Constrained RTP - Financially constrained list of candidate projects with the available funding (short and long-term).

5. Un-Constrained (Illustrative) List of Projects - Un-constrained (Illustrative) list of candidate projects if additional funding becomes available (short and long-term). The financial plan may include additional projects that would be included in the adopted transportation plan if additional resources were to become available.

6. Potential Funding Shortfall. The short and long-term needs for system operation, preservation, and maintenance can be enormous. Simply maintaining the existing system can demand a huge investment, while system expansion demands investments of a similar scale. At times, the combination of these competing demands can cause temporary shortfalls to an MPOs ~~or RTPAs~~ budget. To the extent there appear to be shortfalls, the MPO~~/RTPA~~ must identify a strategy to address these gaps in funding prior to the adoption of a new RTP - or the amendment of an existing RTP. The strategy should include an action plan that describes the steps to be taken that will make funding available within the time frame shown in the financial plan and needed to implement the

projects in the long-range transportation plan. There should be, among other things, a range of options to address projected shortfalls. The strategy may rely upon the MPO/~~RTPAs~~ or transit operators' past record of obtaining funding. If it relies on new funding sources, the MPO~~/RTPA~~ must demonstrate that these funds are reasonably expected to be available.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.32~~24~~(f)(~~10~~11)
State: California Government Code Section 65080(b)

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices:

http://www.mtc.ca.gov/planning/2030_plan/index.htm
http://www.bcag.org/Planning/index.html

6.3 Fiscal Constraint

Fiscal constraint is the demonstration of sufficient funding (Federal, State, local and private) to operate and maintain transportation facilities and services and to implement planned and programmed transportation system improvements. Fiscal constraint can also be thought of as the description of fully funded projects in the RTP based on the projected available revenues during the 20 plus year planning horizon.

Title 23 CFR Part 450.104 provides the following definition of fiscal constraint or fiscally constrained: "(it) means that the metropolitan transportation plan, TIP, and STIP includes sufficient financial information for demonstrating that projects in the metropolitan transportation plan, TIP and STIP can be implemented using committed, available or reasonably available revenue sources, with reasonable assurance that the federally supported transportation system is being adequately operated and maintained. For the TIP and the STIP, financial constraint/fiscal constraint applies to each programming year. Additionally, projects in air quality nonattainment and maintenance areas can be included in the first two years of the TIP or STIP only if funds are 'available' or 'committed'."

To support air quality planning under the 1990 Clean Air Act Amendments, a special requirement has been placed on air quality nonattainment and maintenance areas, as designated by the U. S. Environmental Protection Agency (EPA). Specifically, projects in air quality nonattainment and maintenance areas can be included in the first two years of the FTIP only if funds are "available or committed" (Title 23 CFR Part 450.324(e)). Available funds include those derived from an existing source of funds dedicated to or historically used for transportation purposes. For Federal funds, authorized and/or appropriated funds and the extrapolation of formula and discretionary funds at historic rates of increase are considered "available." Committed funds include funds that have been bound or obligated for transportation purposes. For State funds that are not dedicated to or historically used for transportation purposes, only those funds over which the Governor has control may be considered as "committed." For local and private sources not dedicated to or historically used for transportation purposes, a commitment in writing/letter of intent by the responsible official or

body having control of the funds constitutes a “commitment.” Additionally, EPA's transportation conformity regulations specify that an air quality conformity determination can only be made on a fiscally constrained RTP and FTIP (Title 40 CFR Part 93.108). Therefore, nonattainment and maintenance areas may not rely on proposed new taxes or other new revenue sources for the first two years of the FTIP. New funding for RTP projects from a proposed gas tax increase, a proposed regional sales tax, or a major funding increase still under debate would not qualify as "available or committed" until it has been enacted by legislation or referendum i.e. the period of time between the sunset date of the current regional sales tax and before the next legislative or referendum action to restore or increase funding.

Requirements (Shalls)
Federal: :Title 23 CFR Part 450.32~~24~~(f)(~~10~~11)
State: California Government Code Section 65080(b)

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices:

http://www.sandag.org/index.asp?projectid=292&fuseaction=projects.detail

http://www.scag.ca.gov/rtp2004/2004/FinalPlan.htm

6.4 Listing of Constrained and Un-constrained Projects

In addition to the current list of financially constrained projects identified in the RTP, each Plan should contain a list of needed unconstrained projects (Illustrative projects). illustrative projects are additional transportation projects that may (but is not required to) be included in the RTP if reasonable additional resources were to become available. This unconstrained list will identify projects that are recommended by the MPO~~/RTPA~~ without a funding source identified. The list should be included separately from the financially constrained project list. It is also preferred that projects on the unconstrained list be identified by transportation corridor within the region.

The following is accomplished by including a list of regionally desired un-funded (Illustrative) transportation projects in the RTP:

1. Identifies projects that could be funded, should additional funding become available.
2. Allows for a more accurate determination of overall transportation needs.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.32~~24~~(f)(~~10~~11) Requires a fiscally constrained list of projects.
~~**State:** None~~

Recommendations (Shoulds)
Federal: Title 23 CFR part 450.32~~24~~(f)(~~10~~11)(vii) For illustrative purposes, the list of projects may include additional projects if an additional source of funds is located.
State:

Best Practices:

http://www.mtc.ca.gov/planning/2035_plan/

http://www.sacog.org/mtp/2035

6.5 Revenue Identification and Forecasting

Revenue forecasts for RTPs can take into account new funding sources that are "reasonably expected to be available." New funding sources are revenues that do not currently exist or that may require additional steps before the MPO~~/RTPA~~ or transit agency can commit such funding to transportation projects. As ~~required~~ codified in federal regulations~~ SAFETEA-LU~~, strategies for ensuring the availability of these planned new revenue sources must be clearly identified. Future revenues may be projected based on historical trends, including consideration of past legislative or executive actions. The level of uncertainty in projections based on historical trends is generally greatest for revenues in the "outer years" (10 years or more) of an RTP.

According to Title 23 CFR Part 450.32~~24~~(f)(~~10~~11)(iv), the MPO shall take into account all projects and strategies proposed for funding under Title 23 U.S.C.; Title 49 U.S.C. Chapter 53; other Federal funds; State transportation funds; local funding sources and private sources of funds for transportation projects. Beginning December 11, 2007, funding estimates contained in the RTP must use an inflation rate to reflect “year of expenditure dollars”.

Title 23 CFR Part 450.32~~24~~(f)(~~10~~11)(viii) states: “In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e. by legislative or administrative actions), the FHWA and FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.” The same policy applies if project costs or operations/maintenance cost estimates change after an RTP or FTIP is adopted. Such a change in cost estimates does not invalidate the adopted transportation plan or program. However, the revised costs must be provided in new or amended RTPs and FTIPs. In such cases, FHWA will expect the MPO to identify alternative sources of revenue as soon as possible. In such cases the FHWA/FTA will not act on new or amended RTPs or FTIPs unless they reflect the changed revenue and project cost situation. If FHWA and FTA find an RTP or FTIP to be fiscally constrained and the planned/programmed projects are included based on outdated or invalid cost estimates, then FHWA/FTA will not make funding or environmental approval actions for the listed project(s) unless the RTP and FTIP are updated or amended to reflect the latest project cost estimate.

The estimated revenue by existing revenue source (local, State, Federal and private) available for transportation projects shall be determined and any shortfalls identified. Proposed new revenues and/or revenue sources to cover shortfalls shall be identified, including strategies for ensuring their availability for proposed investments. Existing and proposed revenues shall cover all forecasted capital, operating, and maintenance costs. All cost and revenue projections shall be based on the data reflecting the existing situation and historical trends. For nonattainment and maintenance areas, the financial plan element shall address the specific financial strategies required to ensure the implementation of projects and programs (TCMs) to reach air quality compliance

Requirements (Shalls)
Federal: Title 23 CFR Part 450.3224(f)(1011)
State: California Government Code Section 65080(b)

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~
Best Practices:

http://www.bcag.org/Planning/index.html

http://www.fresnocog.org/document.php?pid=320&x=272

6.6 Estimating Future Transportation Costs

~~As a result of SAFETEA-LU~~ Federal regulations require that (Title 23 CFR Part 450.3224(f)(1011)(iv)) costs of future transportation projects must use "year of expenditure dollars" rather than "constant dollars" in cost and revenue estimates to better reflect the time-based value of money. ~~After December 2007,~~ MPOs~~/RTPAs~~ must ensure project costs identified in both the RTP and FTIP are in year of expenditure dollars. This is particularly crucial for large-scale projects with construction/implementation dates stretching into the future. For those MPOs located in air quality nonattainment and maintenance areas the financial plan developed by the MPO shall address the specific financial strategies and funding sources required to ensure the implementation of TCMs whether or not the TCMs are identified in the SIP pursuant to Title 23 CFR Part 450.3224(f)(1011)(vi).

Reporting the costs in year of expenditure dollars will provide the proper context to express a more realistic estimate of future construction costs. After cost estimates are prepared for the RTP and FTIP, the costs should be expressed in year of expenditure dollars. This can be done by assigning an inflation rate per year to the proposed midpoint of construction. Make certain that the selected year of expenditure reflects a realistic scenario, taking into account project planning and development durations, as well as construction. Inflation rates may be different for specific cost elements (e.g. construction vs. right-of-way). The RTP should clearly specify how inflation is considered in the estimate and clearly State that the estimate is expressed in year of expenditure dollars. Consider multiple sources for determining the inflation rate, including nationwide and local references. Include consideration of any locality-specific cost factors that may reflect a growth rate significantly in excess of the inflation rate, such as land acquisition costs in highly active markets. The inflation rate(s) should be based on sound, reasonable financial principles and information, developed cooperatively by the MPO~~/RTPA~~ and transit agencies. To ensure consistency, similar financial forecasting approaches ideally should be used for both the RTP and FTIP. In addition, the financial forecast approaches, assumptions, and results should be clear and well documented.
Revenues and related cost estimates for operations and maintenance should be based on a reasonable, documented process. Some accepted practices include:

Trend analysis - A functional analysis based on expenditures over a given duration, in which costs or revenues are increased by inflation, as well as a growth percentage based on historic levels. This analysis could be linear or exponential. When using this approach, however, it is important to be aware of new facilities or improvements to existing facilities. Transit operations and maintenance costs will vary with the average age of the bus or rail car fleet.

Cost per unit of service – Examples include: lane-mile costs; centerline mile costs; traffic signal cost; transit peak vehicles by vehicle type; revenue hours; and vehicle-miles by vehicle type.
Regardless of the methodology employed, the assumptions should be adequately documented by the MPO~~/RTPA~~ and transit agency. Estimating current and reasonably available new revenues and required operations and maintenance costs over a 20-year planning horizon is not an exact science. To provide discipline and rigor, MPOs~~/RTPAs~~ and transit operators should attempt to be as realistic as possible, as well as ensure that all costs assumptions are publicly documented.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.32~~24~~(f)(~~10~~11)
State: California Government Code Section 65080(b)

Recommendations (Shoulds)
Federal: Title 23 CFR Part 450.32~~24~~(f)(~~10~~11)(v) authorizes the option to use aggregate cost ranges or bands in the outer years of the RTP.
~~**State:** None~~

Best Practices: In keeping with the Federal and State efforts to streamline the project delivery and NEPA review process at the project level by providing environmental information at the earliest point in time, it is recommended that the RTP also include a preliminary cost estimate for the mitigation activities that are identified.

6.7 Asset Management

The transportation system in California continues to experience substantial wear and tear ~~F~~from increased vehicle miles traveled, growing population, and greater congestion to aging infrastructure and escalating operating costs~~.~~. ~~today's~~ These challenging circumstances put greater demands ~~greater~~ than ever on the transportation system. The goal of asset management is to minimize the life-cycle costs for managing and maintaining transportation assets, including roads, transit, bridges, tunnels, runways, rails, and roadside features.

As the state becomes more multimodal, consideration of policies from the CTP regarding the importance of evaluating the multimodal life cycle cost can help preserve and maintain transportation facilities. These policies can also assist in developing a strategic approach to assess and prioritize transit assets helping to select projects most in need of funding.

The American Association of State Highway and Transportation Officials (AASHTO) define asset management as:

> *"A strategic and systematic process of operating, maintaining, upgrading, and expanding physical assets effectively through their life cycle. It focuses on business and engineering practices for resource allocation and utilization, with the objective of better decision making based upon quality information and well defined objectives."*

Through the use of asset management systems, engineering and economic analysis, and other tools, MPOs~~/RTPAs~~ and transit operators can more comprehensively view the big picture and evaluate collected data before making decisions as to how specific resources should be deployed. Asset management principles and techniques should be applied throughout the

planning process, from initial goal setting and long-range planning to development of the TIP and then through operations, preservation, and maintenance.

MPOs~~/RTPAs~~ should ensure the transportation system is managed to meet both current and future condition and performance demands and that expenditures are optimal. Asset management principles and techniques are valuable tools that can be applied by an MPO~~/RTPA~~ and result in more effective decision making. The MPO~~/RTPA~~ role in a successful asset management program includes defining performance measures for assets through public involvement, serving as a repository for asset data, and promoting standard data collection ~~and~~ technology applications, and making investment decisions based on measured performance relative to established goals. MPOs~~/RTPAs~~ can also educate the public and decision makers and work cooperatively with stakeholders across transportation modes.

Title 23 CFR Part 450.306(e) states the following concerning asset management:

> *"In carrying out the metropolitan transportation planning process, MPOs, States, and public transportation operators may apply asset management principles and techniques in establishing planning goals, defining TIP priorities, and assessing transportation investment decisions, including transportation system safety, operations, preservation, and maintenance, as well as strategies and policies to support homeland security and to safeguard the personal security of all motorized and non-motorized users."*

MPOs~~/RTPAs~~ should consider including asset management principles in the development of their RTPs. The following are the benefits of applying transportation asset management during the planning process:

1. Maximize transportation system performance.
2. Improve customer satisfaction.
3. Minimize life-cycle costs.
4. Mitigate system vulnerabilities.
5. Match service provided to public expectations.
6. Make more informed, cost-effective program decisions and
7. Better use of existing transportation assets.

Additional information is available from the FHWA at:

http://www.fhwa.dot.gov/infrastructure/asstmgmt/tpamb.cfm

Requirements (Shalls)
Federal: ~~None~~ MAP-21/FAST establish limitations on federal funding flexibility if the aggregate bridge condition in California does not meet certain minimum conditions for National Highway System (NHS) bridges. MPOs shall monitor the current structurally deficient bridge deck area and make the necessary investment decisions that result in less than 10% of the agencies' NHS bridge deck area.
~~**State:** None~~

Recommendations (Shoulds)
Federal: Title 23 CFR Part 450.306(e) - MPOs, States, and public transportation operators may apply asset management principles and techniques in establishing planning goals, defining TIP priorities, and assessing transportation investment decisions.
State: None

Best Practices: To ensure a sustainable transportation system, MPOs are encouraged to address existing infrastructure condition and performance prior to considering expansion of the system. This general approach is considered a best practice that will ensure that the agencies funding for the transportation will be adequate to sustain the system into the future.

http://www.sjcog.org/Programs%20&%20Projects/Transportation_files/RTP.htm

http://www.hcaog.net/docs/RTP.2006

http://www.mtc.ca.gov/planning/2035_plan/T2035-Project_Notebook_web.pdf

Modal Discussion

The RTP is the key document prepared by the MPO~~/RTPA~~ that reflects future plans of the transportation system for the region. This future vision includes all modes of transportation and is one of the key functions of the RTP.

Both federal regulations and state statute require RTPs to address each transportation mode individually. Title 23 CFR Part 450.32~~24~~(b) states: "*the transportation plan shall include strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand*."

It is also important for MPOs ~~and RTPAs~~ to integrate modal considerations to enable the development of a complete and connected multimodal transportation system. As modes often overlap (e.g. transit vehicles and private vehicles use the same modes, and people and goods use multiple modes), consider how all transportation modes interact with one another, and how improvements in one mode can benefit the entire transportation system.

Title 23 CFR Part 450.32~~24~~(f)(2) requires that RTPs address both existing and proposed transportation facilities such as major roadways, transit lines (both rail and primary bus routes), multimodal and intermodal connector facilities, pedestrian walkways and bicycle facilities.

California Government Code Section 65080(a) states that transportation planning agencies shall prepare and adopt an RTP directed at achieving a coordinated and balanced regional transportation system that includes mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement, and aviation facilities.

6.8 Highways

The section of the RTP discussing highways should consider the following:

1. An overview of the primary highway and arterial road system within the region;
2. National and State highway system, and regionally significant streets and roads;
3. Any corridor preservation processes for possible future transportation projects (i.e. right of way, historic highways, abandoned highways or rails);
4. Maintenance of State highways;

5. Data collection and other infrastructure requirement for ITS~~; and~~,
6. Unmet highway needs
7. Consider CTP policy suggesting to invest strategically to optimize performance; and
8. Consider CTP policy suggesting for the application of sustainable preventative maintenance and rehabilitation strategies.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.32~~24~~(b) requires short and long-range strategies for an integrated multimodal transportation system.
State: Government Code Section 65080(a) requires that the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices:

http://www.scrtpa.org/RTplan.htm

http://www.pctpa.org/library/rtp2027/rtp2027_final.htm

http://www.trpa.org/default.aspx?tabindex=13&tabid=317

6.9 Local Streets & Roads

Local streets and roads are critical to provide an interconnected, multi-modal transportation system where every trip begins and ends. Investment in local streets and roads is an investment in public safety, economic growth, goods movement and farm to market needs. According to ~~2008 California Public Road Data[1] compiled by Caltrans Division of Transportation System Information~~, 2013 California Public Road Data compiled by Caltrans Division of Research, Innovation & System Information, counties and cities maintain 81 percent of the maintained miles within the State of California and carry 45 percent of the total annual miles of vehicle travel. The condition of local streets and roads continue to deteriorate due to the funding shortfalls and will be further challenged by the escalating repair costs in future years. Adequately investing in the local system is critical to protect the public's current investment. The local system will become ever more important in supporting the goals of climate change and building sustainable communities, as local streets and roads serve as the right-of-way for transit, bicycle and pedestrian travel.

The section of the RTP discussing local streets and roads should consider the following:

1. The preservation needs for the local road system, including but not limited to pavement and essential components to support travel by bicycle, bus, pedestrian, or automobile (including the unmet need for maintaining and preserving the existing local streets and road, public transit, bicycling and pedestrian transportation system);
2. Bi-annual Data collection and periodic collaborative efforts to update system-wide local streets and road preservation needs (including deferred maintenance);
3. Encouraging all agencies to utilize Pavement Management Software (PMS) in their data collection efforts;

4. The benefits of achieving Best Management Practices (BMPs) for the local streets and roads and maintaining them at that level;
5. The issue of declining local streets and roads maintenance revenues in connection with rising maintenance costs and achieving SB 375 goals;
6. System preservation assessments such as bridges, safety, traffic signals, transit stop, signage, lane and crosswalk striping, sidewalks, curb ramps, lighting, drainage, landscaping, and other elements within the road right-of-way to support a functioning and integrated multi-modal system.

References

1. ~~2008~~ 2013 California Public Road Data – Statistical Information derived from the Highway Performance Monitoring System. Prepared by Caltrans Division of ~~Transportation System Information~~ Research, Innovation & System Information. Available online at:

   http://www.dot.ca.gov/hq/tsip/hpms/datalibrary.php

Requirements (Shalls)

Federal: Title 23 CFR Part 450.32~~24~~(b) requires short and long-range strategies for an integrated multimodal transportation system.

State: Government Code Section 65080(a) requires that the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

~~**Recommendations (Shoulds)**~~

~~**Federal:** None~~

~~**State:** None~~

~~**Best Practices:** None~~

6.10 Transit

Transit plays a key role in the regional effort to reduce traffic congestion, VMT and vehicle emissions particularly in urbanized areas. The increased use of transit ~~by the general public will also be~~ is a key element to meeting legislative requirements such as AB 32 and SB 375 that aim to reduce ~~requirements and reducing~~ greenhouse gas emissions that contribute to global warming. Transit systems also play an important role in the mobility for those who are unable to drive, including ~~of~~ youth and the elderly, ~~people who are~~ as well as low-income individuals, and people with disabilities. Given these reasons, it is crucial for MPOs~~/RTPAs~~ to engage in a continual and comprehensive dialogue with the transit operators within their region. The CTP highlights the positive impacts of public transportation and suggests the integration of multimodal transportation and land use development which can help establish areas within regions that can be possible locations for Transit Oriented Developments (TODs).

The section of the RTP addressing mass transportation issues (including regional transit services and urban rail systems) should address:

1. Identification of passenger transit modes within the region (bus, light and heavy rail, etc.);
2. Integration with transit, highway, street and road projects (including identification of priorities);

3. Implementation plans, operational strategies and schedule for future service (including construction and procurement);
4. Operational integration between transit fleets, and other modes (passenger rail, aviation, taxis, etc.);
5. Summation of the short and long range transit plans along with the capital finance plans for the 20-year period of the RTP;
6. Short and long-range transit plans and capital finance plans for the 20-year RTP period;
7. Inventory of bus fleets by fuel type (diesel, natural gas, and other alternative fuels);
8. Unmet transit needs;
9. Urban and commuter rail project priorities;
10. ITS elements to increase efficiency, safety and level of service;
11. Integration with local land use plans that could increase ridership and,
12. A measure of transit capacity utilization for peak and off-peak service to evaluate service effectiveness.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.32~~24~~(b) requires short and long-range strategies for an integrated multimodal transportation system.
State: Government Code Section 65080(a) the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

6.11 Goods Movement (Maritime/Rail/Trucking/Aviation)

Developing, operating and maintaining a robust goods movement transportation system is vital to California's economy. For many reasons, including its proximity to Asian markets, its strong agricultural economy, and its large population, high volumes of goods are moved within and through California. With the diversity of products being moved, and the complexity of origins and destinations, the transportation system that supports goods movement within California must be multimodal. The system spans the entire state, and the needs for urban and rural goods movement infrastructure can differ between, and within, regions. However, throughout the state, goods movement has both positive and negative impacts. Through the regional planning process, MPOs ~~and RTPAs~~ can create strategies for improving the regional goods movement transportation system so positive impacts (e.g. job creation, access to goods) are maximized and negative impacts (e.g. land use conflicts, air pollution, and environmental justice) are minimized.

MPO ~~and RTPAs~~ must plan for the goods movement infrastructure in the same way they plan the transportation infrastructure for the movement of people to support projected population growth and economic development. Goods movement planning is in the public interest because of the potential economic benefits. Improvements to the goods movement transportation system often result in co-benefits to the overall system. The CTP recognizes the importance of enhancing freight mobility, reliability, and global competitiveness, which is why MPOs should consider deploying cost-effective technologies that can help expedite goods movement and reduce congestion at our ports. As a rail improvement project takes trucks off the highway, congestion is reduced and potentially reduces greenhouse gas emissions. A seamless, efficient

and well-maintained, multi-modal transportation system is paramount to the state's economic strength and its ~~citizens'~~ residents' quality of life. Planning this system involves a broad base of stakeholders, including affected community representatives, local organizations ~~agencies~~ in charge of seaports and airports, trucking associations, Class I and short line railroads, and freight shippers.

The RTP section discussing goods movement should include the following:

1. A discussion of the role of goods movement within the region (the types and the magnitudes of goods moved through the region and their economic importance);
2. An inventory of all major highway and roadway routes consistent with the National Highway Freight Network, including critical urban freight corridors, ~~used for trucking,~~;
3. An inventory of seaport facilities, air cargo facilities, freight rail lines, and major warehouses and freight transfer facilities within the region;
4. An analysis of the efficiency of existing goods movement transportation infrastructure (e.g. bottlenecks, gaps, etc.);
5. Discussion of how the region's projected population growth will affect the demand for goods movement, and identification of land areas where goods movement facilities (such as intermodal facilities and warehouses) necessary to support this demand can and should be located;
6. Specific projections, by mode, of future freight demand;
7. Identification of freight-elated highway and roadway improvement needs;
8. Identification of expansion or improvement needs at seaport and airport facilities that handle cargo and issues regarding land side access to these facilities;
9. Identification of expansion or improvement needs for freight rail lines within the region;
10. Identification of intermodal connection issues between different modes (e.g. freight, rail and seaport facilities), as applicable;
11. Identification of USA/Mexico border crossing issues, if applicable;
12. Discussion of ITS and advanced technology opportunities for goods movement, with the aim of maximizing operational efficiencies and minimizing emissions; and,
13. Identification of opportunities or innovations that improve freight efficiency.

California Sustainable Freight Action Plan

In July 2015, Governor Brown issued Executive Order B-32-15 which prioritizes California's transition to a more efficient and less polluting freight transportation system. This transition of California's freight transportation system is essential to supporting the State's economic competitiveness in the coming decades while reducing greenhouse gas emissions and air quality impacts. The Executive Order directed State agencies to develop an integrated action plan by July 2016 that established clear targets to improve freight efficiency, transition to zero-emission technologies, and increase the competitiveness of California's freight system. It is suggested that regional transportation agencies consult the California Sustainable Freight Action Plan when developing the freight related strategies in their respective RTPs.

Requirements (Shalls)

Federal: Title 23 CFR Part 450.32~~24~~(b) requires short and long-range strategies for an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods. Title 23 CFR Part 450.32~~24~~(f)(1) states that the RTP shall include the €§§§projected transportation demand of persons and goods in the metropolitan planning area over the period of the plan, and Title 23 CFR Part 450.32~~24~~(f)(3) states that the RTP shall

include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods. Title 23 CFR Part 450.324(j)~~2(h)(i)~~ and Title 23 Part 450.316(a) require that the MPO shall provide freight shippers and providers of freight transportation services, among other stakeholders, a reasonable opportunity to comment on the RTP using the adopted Public Participation Plan. Title 23 USC Section 134 reflects similar requirements in federal statutes.
State: Government Code Section 65080(a) requires that the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

Recommendations (Shoulds)
Federal: ~~None~~

The FAST Act continues the Metropolitan Planning program. The Program establishes a cooperative, continuous, and comprehensive framework for making transportation management decisions in metropolitan areas. Program oversight is a joint Federal Highway Administration/Federal Transit Administration responsibility, FAST Act § 1201; 23 USC 134. The FAST Act continues to encourage MPOs to consult with officials responsible for other types of planning activities, including freight.

The FAST Act directs the Department of Transportation to establish a National Multimodal Freight Network to:

- Assist States in strategically directing resources toward improved system performance for the efficient movement of freight on the Network;
- Inform freight transportation planning;
- Assist in the prioritization of Federal investment; and
- Assess and support Federal investments to achieve the goals of the National Multimodal Freight Policy established in 49 USC 70101 and of the National Highway Freight Program described in 23 USC 167.

The FAST Act established a National Highway Freight Network (NHFN). The NHFN includes the following subsystems of roadways:

- **Primary Highway Freight System (PHFS):** This is a network of highways identified as the most critical highway portions of the U.S. freight transportation system determined by measurable and objective national data. The network consist of 41,518 centerlines miles, including 37,436 centerline miles of Interstate and 4,082 centerline miles of non-Interstate roads.
- **Other Interstate portions not on the PHFS:** These highways consist of the remaining portion of Interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities. These portions amount to an estimated 9,511 centerline miles of Interstate, nationwide, and will fluctuate with additions and deletions to the Interstate Highway System.
- **Identification and Designation of Critical Urban Freight Corridors (CUFCs):** These are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities.

~~**State:** None~~

Best Practices: The state's ~~Goods Movement Action Plan (GMAP)~~ California Freight Mobility Plan (CFMP) is a policy and action agenda document that supports the improvement of

California's goods movement infrastructure while preserving the environment. MPOs ~~and RTPAs~~ are encouraged to review the ~~GMAP~~ CFMP for guidance, and ensure consistency while addressing goods movement within their RTPs. The RTPs and the ~~GMAP~~ CFMP will ideally function in a feedback loop, as the goods movement strategies and projects identified in RTPs will be incorporated into the next update of the ~~GMAP~~ CFMP.

~~http://www.dot.ca.gov/hq/tpp/offices/ogmlinks_files/gmap-1-11-07.pdf~~

~~http://www.scag.ca.gov/rtp2008/index.htm~~

~~http://www.mtc.ca.gov/planning/rgm~~

~~http://www.sandag.org/index.asp?projectid=292&fuseaction=projects.detail~~

http://www.dot.ca.gov/hq/tpp/offices/ogm/

http://rtpscs.scag.ca.gov/Pages/default.aspx

http://www.alamedactc.org/goodsmovement

http://www.ops.fhwa.dot.ca.gov/freight/infrastructure/nfn/index.htm

http://www.sandag.org/index.asp?classid=13&fuseaction=home.classhome

6.12 Regional Aviation System

Aviation contributes to California's triple bottom line (people, prosperity, and planet) at all levels from local to global. Aviation gives the State's multimodal transportation system access, range, and speed. California's aviation system consists of 246 public-use airports made up of both commercial and general aviation airports, 68 special-use airports, 8 sea plane bases, 356 hospital and/or corporate, police, fire, or private heliports, 22 military/NASA bases, and 1 joint-use facility. (Division of Aeronautics Aviation in California: Fact Sheet (MAY 2016))

Aviation improves mobility options, generates tax revenue, saves lives through emergency response, medical, and firefighting services, produces over $170 billion in air cargo revenues annually, and generates over $14 billion to the State's tourism industry. The Division of Aeronautics Economic study, *Aviation in California: Benefits to Our Economy and Way of Life* (2003), reports that aviation creates almost 9 percent to the State's jobs (1.7 million jobs), and generates revenues totaling ($110.7 billion). The report is available on line at: http://dot.ca.gov/hq/planning/aeronaut/publication.htmhttp://dot.ca.gov/hq/planning/aeronaut/publication.htm

The 2014 Caltrans Airport Forecasting Study, T*he Role of California Airports in Smart Growth and Economic Vitality* created tools for communities and regions to use for developing their local airports to their full economic potential. Airports can be used to help locate new business opportunities for a region, and improve quality of life by providing a unique access opportunity. The study includes best practices, available at: http://www.dot.ca.gov/aeronaut/index.htm

To preserve the economic and access benefits aviation contributes to California, airports must be protected through comprehensive planning practices at all levels of government. A large part of protecting airports comes from policies that protect airports from encroachment from incompatible land uses. Every county in California having an airport that is "operated for the benefit of the general public" (PUC Section 21670(b) must have an airport land use commission (ALUC) who's function is accomplish proper airport land use compatibility planning. The PUC recognizes six types of ALUC. Counties are free to select the type of ALCU that works best for their needs. The PUC further specifies the types of powers and duties reserved for ALCU (PUC Section 21674). ALUCs do not have jurisdiction over airports, but their airport land use compatibility plans (ALUCP) are developed from an airport's layout plan or master plan. And, general plans shall be consistent with ALUCPs, (PUC Sections 21674(c) and 21675).

Federal laws (Title 23 CFR Part 450.324(g) and. Title 23 CFR Part 450.316(a) (1)) requires MPOs to consult with stakeholders responsible for land use management, as appropriate. Although not specifically named in statute, airports and ALUCs meet this criteria, and should be included in the consultation process during the RTP development. See Section 3 for guidance on the consultation process. State law (California Government Code Section 65080(a) and California Government Code Section 65080(a)) requires a coordinated and balanced regional transportation system. State law further requires RTPAs that have a primary air carrier airport (i.e. an airport with over 10,000 annual enplanements) within their jurisdiction shall have an Airport Ground Access Improvement Program (AGAIP). Annual passenger enplanement and air cargo reports are available from either the Caltrans Division of Aeronautics or from the Federal Aviation Administration (FAA), Airports Office: Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports. See the Division of Aeronautics web site for annual reports of both enplanement and cargo data at**:**
http://dot.ca.gov/hq/planning/aeronaut/documents/statistics/paxstats.htm

Requirements (Shalls)

Federal: Title 23 CFR 450.324, Development, and Content of the Metropolitan Transportation Plan. Subsection (b) requires short and long-range strategies for an integrated multimodal transportation system**.** Title 23 CFR Part 450.324(g) states that MPOs shall consult as appropriate with stakeholders and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation during the development of the RTPs. Title 23 CFR Part 450.316(a) (1) also requires that public participation plans be developed by MPOs in consultation with all interested parties and describe explicit procedures, strategies, and desired outcomes.

State: California Government Code Section 65080(a) states that "Each transportation planning agency…shall prepare and adopt a regional transportation plan directed at achieving a coordinated and balanced regional transportation system, including…aviation facilities and services." Government Code Section 65081.1(b) requires consideration of highway, rail, and mass transportation and states that, "The program shall address the development and extension of mass transit systems, including passenger rail service, major arterial, and highway widening and extension projects, and any other ground access improvement projects the planning agency deems appropriate."

Recommendations (Shoulds)

State: MPOs should consider the needs of public-use airports, special-use heliports and military airfields when planning transportation and infrastructure projects (i.e. by consulting with the sponsors) to further sustainable and compatible land use and circulation patterns.

Best Practices:
As a best practice, MPOs should include the following aviation planning topics in the development of their RTPs:

1. An overview of the role that all public use airports including both commercial, and general aviation airports, heliports, and military airfields play in the region's multimodal transportation system.
2. Describe the functional relationship between the region's airports, and heliports, and explain specific RTP policies that support and preserve the long term viability of the region's airports.
3. Identify current airport conditions such as noise, safety, and future airport improvement projects that can be found in either an airport's layout plan, or master plans.
4. Provide a list of all public-use airports, including their State functional class developed by the Division of Aeronautics for all commercial and general aviation airports, and military installations in the region, and a description of their facilities and uses, and a map of their location.
5. Provide a discussion of any future airport(s) growth and improvement needs found in each airport's master plan or airport layout plan.
6. A discussion of multimodal ground access issues and any required ground access program or plan.
7. A separate list of short (5 year) and long-range (10 year) Airport Capital Improvement Plan (ACIP) projects within the region.
8. Identify which governing body serves as each county's ALUC for the region established pursuant to PUC 21670(a), as well as the title and date of the most current ALUCPs, Airport Master Plans or Airport Layout Plans; and military Air Installation Compatible Use Zone Plans.
9. Demonstrate consistency with the State of California Office of Planning and Research's document entitled *Community and Military Compatibility Planning; Supplement to the General Plan Guidelines* (December 2009) for military installations available at: https://www.opr.ca.gov/docs/Military_GPG_Supplement.pdf

   Additional aviation best practice studies can be found at:
   http://dot.ca.gov/hq/planning/aeronaut/publication.htm
   http://www.faa.gov/airports/planning_capacity/ga_study
   http://www.gao.gov/products/GAO-10-120
   http://www.gao.gov/products/GAO-13-261

   For questions and additional information regarding the state aviation program and its airport planning activities for a specific region please visit the Caltrans Division of Aeronautics website:
   http://www.dot.ca.gov/hq/planning/aeronaut/planners.htm

   For additional information regarding land use compatibility concerns affecting airports please visit the Caltrans Division of Aeronautics website: http://www.dot.ca.gov/hq/planning/aeronaut/landuse.htm

Military Airfields and Installations

California's military installations are vital to America's national security, and the State is home to some of the Department of Defense's (DOD) most important military installations globally. All five of the services (Army, Navy, Air Force, Marines, and Coast Guard) have a major presence in the State. They are major contributors to the State's triple bottom line (people, prosperity, place), and users of the transportation system. In 2009 California's DOD installations employed over 354,769 civilian and military personnel, with a payroll of over $56 billion. Military expenditures and contracts awarded to California companies totaled almost $99 billion. Source: DOD in California brochure. Military installations are subject to strict environmental regulation, and vulnerable to climate change impacts, and sea leave rise. Each installation has plans that address environmental and sustainability needs for their installation and practices in place that protect the environment and ensure the Service's ability to execute their mission.

Military transportation needs can be broken down into three broad categories, troop transport, military cargo, and installation employees commuter needs. These needs include surge capabilities as needed. Military facilities are spread throughout California, in all sizes of communities from rural locations to heavily urbanized areas. They share the same transportation needs as their neighboring communities. Although not specifically named in planning statue and codes, the requirement to consult with all users of the transportation system apply to the military as well, see Chapter 4 RTP Consultation and Coordination for detailed discussion of users and the consultation process. In addition to transportation needs, military installations also need protection from encroachment of incompatible land uses that could hamper the facilities ability to meet its mission needs. Military installations with airfields are required by DOD to prepare Air Installation Compatible Use Zone Plan (AICUZ) that address their compatibility needs. ALUC are required to develop an ALUCP for the airfield that is consistent with the AICUZ. The federal government, Transportation Research Board, and some states (Texas, Colorado, North Carolina, New Jersey, and Virginia) offer guidance and best practices regarding how to address land use compatibility issues for military installations. General plans must be consistent with the AICUZ and ALUCP for the military airfields in their jurisdiction. California's Office of Planning and Research (OPR) publishes a guide for how to incorporate land use compatibility planning for military installations in the State. https://www.opr.ca.gov/docs/Military_GPG_Supplement.pdf.

Requirements (Shalls)

Federal: Consulting with interested parties on plans, programs, and projects shall include individuals or organization that are mentioned in Title 23 CFR Part 450.316(a). Title 23 CFR Part 450.316(d) requires MPOs to consult with federal land use management agencies as appropriate during the development of RTP. Title 23 CFR part 450.324(g) states that MPOs shall consult as appropriate with stakeholders and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation during the development of the RTPs. Title 23 CFR Part 450.316(a) (1) also requires that public participation plans be developed by MPOs in consultation with all interested parties and describe explicit procedures, strategies, and desired outcomes.

Recommendations (Shoulds)

State: RTPAs should consider the needs of public-use airports, and heliports and military airfields when planning transportation and infrastructure projects (i.e. by consulting with the sponsors) to further encourage sustainable and compatible land use and circulation patterns.

Best Practices:

As a best practice, MPOs should include a discussion of military installations transportation and land use compatibility needs in their RTPs by addressing of the following:

1. A list and map of all military airfields and installations in the region.
2. An overview of the role that these military airfields and installations play in the region including a brief description of the installation's current and future mission(s).
3. Discuss the land use needs, and potential encroachment issues that each installation faces in both the near and long term.
4. Discuss multimodal ground access needs to installations for both people and freight, as well any needed ground access programs or plans that support its needs to complete its mission(s).
5. Demonstrate consistency with California's OPR document *Community and Military Compatibility Planning; Supplement to the General Plan Guidelines* (December 2009) available at: https://www.opr.ca.gov/docs/Military_GPG_Supplement.pdf.
6. Integrate military installation plans with other existing plans as described in Chapter 2, Sections 2.4 through 2.6.
7. Model installation travel demands and forecasts described in Chapter 3 as needed, especially for regions that are in non-attainment areas throughout the State.

Additional military installation Best Practices can be found at:
http://www.napawash.org/2009/1378-strengthening-national-defense-countering-encroachment-through-military-community-collaboration.htm
http://militarycouncil.ca.gov/s_economicdata.php
https://www.sdmac.org/ImpactStudy.htm
http://hrtpo.org/page/military-transportation-needs
http://www.nctcog.org/trans/aviation/jlus/JLUS_bkg.asp
http://hrtpo.org/page/military-transportation-needs
http://www.militarycommunitytransport.org/resources.htm
http://www.nceastmgtf.org/studies-and-analyses
www.nj.gov/.../military/docs/Military%20Task%20Force%20Report.pdf
https://www.enterpriseflorida.com/wp.../FDSTF-Report-Best-Practices-Study.pdf

For questions and additional information regarding the state aviation program and its airport planning activities for a specific region please visit the Caltrans Division of Aeronautics website: http://www.dot.ca.gov/hq/planning/aeronaut/planners.htm

For additional information regarding land use compatibility concerns affecting airports please visit the Caltrans Division of Aeronautics website: http://www.dot.ca.gov/hq/planning/aeronaut/landuse.htm

~~Airports are a major contributor to the local, state and national economy and aviation plays a significant role in California's multimodal transportation system. This includes the movement of people and goods within and beyond the State's network of over 400 public-use airports, hospital heliports and military airfields. According to the economic impact study, *Aviation in California: Benefits to Our Economy and Way of Life* (2003), aviation contributes about 9 percent of both total State employment (1.7 million jobs) and total state annual output ($110.7 billion). Aviation improves mobility, generates tax revenue, saves lives through emergency response medical and firefighting services, annually transports air cargo valued at over $170~~

billion and annually generates tourist dollars in excess of $14 billion, thereby sustaining our economy and improving our quality of life.

In order to maintain the economic fabric of California, aviation should be protected. Consistent state, regional and local government policies can support a strong multimodal transportation system by providing plans for aviation, addressing aircraft noise mitigation and ground access congestion concerns, and avoiding encroachment from incompatible land uses.

Federal law for MPOs requires that their RTP reflects the goal of an integrated, multimodal transportation system. State law requires a coordinated and balanced regional transportation system. State law further requires RTPAs that have a primary air carrier airport (i.e. an airport with over 10,000 annual enplanements) within their jurisdiction to have an Airport Ground Access Improvement Program (AGAIP). Airports that trigger the AGAIP requirement are listed below by county. Annual passenger enplanement reports are available from either the Caltrans Division of Aeronautics or from the Federal Aviation Administration (FAA), Airports Office: Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports. The FAA weblink is:

http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/

Commercial Service: Primary Air-Carrier Airport Annual Enplanements (2008)

County	**Airport**	**Enplanements**
Alameda	Metropolitan Oakland International	5,724,888
Butte	Chico Municipal	24,818
Del Norte	Jack McNamara International	12,673
Fresno	Fresno Yosemite International	627,498
Humboldt	Arcata	109,941
Kern	Meadows Field, Bakersfield	142,866
Kern	Inyokern	11,549
Los Angeles	Los Angeles International	29,709,490
Los Angeles	Bob Hope	2,664,875
Los Angeles	Long Beach	1,457,209
Los Angeles	Palmdale Plant 42	11,168
Monterey	Monterey Peninsula	214,451
Orange	John Wayne	4,492,626
Riverside	Palm Springs International	774,056
Sacramento	Sacramento International	4,988,274
San Bernardino	Ontario International	3,110,767
San Diego	San Diego International	9,066,343
San Diego	McClellan Palomar	40,682
San Joaquin	Stockton Metropolitan	36,982
San Luis Obispo	San Luis Obispo	157,421
San Mateo	San Francisco International	18,528,972
Santa Barbara	Santa Barbara International	412,256
Santa Barbara	Santa Maria Public	57,720

Santa Clara	San Jose International, Norman Y. Mineta	4,847,764
Shasta	Redding Municipal	66,239
Sonoma	Charles M. Schulz	102,698
Stanislaus	Modesto City-County	37,795
Ventura	Oxnard	17,137
	Total	**87,449,158**

Requirements (Shalls)

Federal: Title 23 CFR 450.322, Development and Content of the Metropolitan Transportation Plan. Subsection (b) requires short and long-range strategies for an integrated multimodal transportation system.

State: California Government Code Section 65080(a) states that "Each transportation planning agency…shall prepare and adopt a regional transportation plan directed at achieving a coordinated and balanced regional transportation system, including…aviation facilities and services." California Government Code Section 65081.1(a) requires each RTPA with a primary air-carrier airport to have an Airport Ground Access Improvement Program (AGAIP). Government Code Section 65081.1(b) requires consideration of highway, rail and mass transportation and states that, "The program shall address the development and extension of mass transit systems, including passenger rail service, major arterial and highway widening and extension projects, and any other ground access improvement projects the planning agency deems appropriate."

Recommendations (Shoulds)

Federal: None

State: MPOs and RTPAs should consider the needs of public-use airports, special-use heliports and military airfields when planning transportation and infrastructure projects (i.e. by consulting with the sponsors) to further sustainable and compatible land use and circulation patterns.

Best Practices:

As a best practice, MPOs and RTPAs should include the following aviation planning topics in the development of their RTPs:

1. An overview of the role that the aviation system plays in the region's multimodal transportation system;
2. List and explain how specific RTP policies support a healthy regional aviation system;
3. Identification of current airport conditions such as noise, safety and the land use compatibility of General Plan and zoning designations around airports;
4. An inventory of aviation facilities and a map of their location;
5. A discussion of future aviation needs;
6. A discussion of multimodal ground access issues and any required ground access program or plan;
7. A separate list of short (5 year) and long-range (10 year) Airport Capital Improvement Plan (CIP) projects within the region;
8. Identification of the region's Airport Land Use Commission established pursuant to Public Utilities Code 21670(a), as well as the title and date of the most current

~~aviation related planning documents: the airport and military land use compatibility plans, the Airport Master Plan and the Airport Layout Plan; and,~~

~~9. Demonstrate consistency with the State of California Office of Planning and Research's document entitled *Community and Military Compatibility Planning; Supplement to the General Plan Guidelines* (December 2009).~~

~~For questions and additional information regarding the state aviation program and its airport planning activities for a specific region please visit the Caltrans Division of Aeronautics website:~~

~~http://www.dot.ca.gov/hq/planning/aeronaut/planners.html~~

~~For additional information regarding land use compatibility concerns affecting airports please visit the Caltrans Division of Aeronautics website:~~

~~http://www.dot.ca.gov/hq/planning/aeronaut/landuse.html~~

6.13 Bicycle & Pedestrian – Including AB 1396 California Coastal Trail

The use of bicycles and walking as a means of transportation has increased dramatically in California over the last 20 years. Both modes of transportation promote a healthy lifestyle and reduce environmental impacts. Higher levels of physical activity are associated with well-connected transportation networks. The CTP acknowledges that viable and equitable multimodal choices are created through Complete Streets and high quality transit access in communities. The CTP can be a helpful resource for MPOs to refer to during their RTP development. Additional information regarding the Complete Streets planning process which emphasizes bicycle and pedestrian access and circulation is available in Section 2.6. The RTP section discussing bicycle and pedestrian issues should identify the following:

1. A well-connected transportation network within the region that includes routes with all types of bicycle and pedestrian facilities on local streets which provide low stress[28] trips to destinations;
2. ~~Bicycle routes within the region (including bicycle routes on local streets);~~
3. Policies, plans and programs used to promote the usage of bikes and walking;
4. Transit and rail interface with bicyclists and pedestrians;
5. Unmet bicycle and pedestrian needs; and,
6. Existing and potential California Coastal Trail (CCT) network segments and linkages, as well as gaps and related coastal access trail needs.

AB 1396 – California Coastal Trail

Enacted in 2007, AB 1396 added Section 65080.1 to the Government Code which requires transportation planning agencies whose jurisdictions include a portion of the California Coastal Trail (or property designated for the coastal trail) to coordinate with specified agencies regarding development of the coastal trail, and to include provisions for the coastal trail in their Regional Transportation Plans.

[28] http://www.peopleforbikes.org/blog/entry/mapping-comfort-part-i-how-psychological-stress-influence-bike-maps

Provisions for the CCT should include identification of existing and potential trail network segments and linkages as well as gaps and related coastal access trail needs. Coastal access trail needs could include identification of accommodations for non-motorized modes, critical linkages to parking, bicycle racks, bathrooms and other support facilities, and connections to CCT trailheads. Any necessary trail alignment near motorized traffic should provide for adequate separation.

Additional information and maps regarding the California Coastal Trail is available from the State Coastal Conservancy and the California Coastal Commission at:

http://scc.ca.gov/2010/01/07/the-california-coastal-trail/

http://scc:ca.gov/webmaster/pdfs/CCT_Siting_Design.pdf

~~http://www.coastalconservancy.ca.gov/Programs/cct/Coastal_Trail.htm~~

http://www.coastal.ca.gov/access/accndx.html

http://www.coastal.ca.gov/access/coastal-trail-map.pdf

Requirements (Shalls)

Federal: Title 23 CFR Part 450.324(f)(12)~~2(f)(8)~~ requires MPOs to include a discussion of pedestrian walkways and bicycle transportation facilities in accordance with Title 23 USC Section 217(g)

State: Government Code Section 65080(a) requires that the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

Government Code Section 65080.1 requires that transportation planning agencies whose boundaries include a portion of the California Coastal Trail or property designated for the trail, coordinate with appropriate agencies including the State Coastal Conservancy, the California Coastal Commission and the Department of Transportation regarding development of the California Coastal Trail, and include provisions for the California Coastal Trail in their Regional Transportation Plan.

~~**Recommendations (Shoulds)**~~

~~**Federal:** None~~

~~**State:**~~

Best Practices: Local and Regional plans for bicycle and pedestrian trails and related facilities, including the California Coastal Trail should be supported by RTPs. Additional best practice information regarding the California Coastal Trail is available at the following links:

Completing the California Coastal Trail Plan – California Coastal Conservancy
http://www.coastal.ca.gov/access/coastal-trail-report.pdf

Information regarding California Coastal Trail Definition and Design and Siting Standards is available at:

http://www.scc.ca.gov/webmaster/pdfs/CCT_Siting_Design.pdf

Programming/Operations

6.14 Transportation System ~~Operations & Management~~ Management and Operations

The RTP shall address ~~operational and management~~ management and operations strategies aimed at improving the performance of the existing regional transportation system in order to reduce transportation congestion issues and maximize the safety and mobility of people and goods. Examples of operational and management include: (a) Traffic incident management (b) Travel information services(c) Roadway weather information (d) Freeway management (e) Traffic signal coordination and (f) Bicycle and transit trip planning.

Although operational and management strategies may be implemented on a regional, area-wide, or project-specific basis, those strategies included in an RTP should typically be those that have importance on a regional level.

RTPs shall include existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities and connectors) that should function as an integrated regional transportation system with emphasis on those facilities that serve important national and regional needs.
If applicable, the locally preferred alternative selected from an Alternative Analysis under the FTA's Capital Investment Grant Program (Section 5309) needs to be adopted as part of the RTP as a condition for funding under Title 49 USC Section 5309.

Requirements (Shalls)
Federal: Title 23 USC Section 134 and Title 23 CFR Part 450.324(f)(5)~~2(f)(3)~~ requires strategies for improving the regional transportation system and reducing congestion.
~~**State:** None~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices: A U.S. Department of Transportation document titled; "Management & Operations in the Metropolitan Transportation Plan: A Guidebook for Creating an Objectives-Driven, Performance-Based Approach" provides a very good overview on how to integrate transportation system management and operations into the planning process. See:

http://www.ops.fhwa.dot.gov/publications/moguidebook/index.htm

In addition, the U.S. Department of Transportation document titled, "Traffic Signal Operations and Maintenance Staffing Guidelines," provides guidelines to estimate the staffing and resource needs required to effectively operate and maintain traffic signal systems. Specifically, Chapter 1.3.1 provides a suggestion on the level of maintenance that is necessary. See:

http://ops.fhwa.dot.gov/publications/fhwahop09006/fhwahop09006.pdf

6.15 Coordination With Programming Documents

The Federal Transportation Improvement Program (FTIP) is a four-year prioritized listing of federally funded and non-federally funded regionally significant transportation projects that is developed and formally adopted by an MPO as part of the metropolitan transportation planning process. MPOs work cooperatively with public transportation agencies as well as other local, state, and federal agencies to propose projects for inclusion in the FTIP. Each project or project phase in the FTIP must be consistent with the approved RTP. The FTIP must be updated at least every four years. MPOs may also refer to the FTIP as the Metropolitan Transportation Improvement Program (MTIP). Specific requirements for the development and content of the FTIP are contained in Title 23 CFR Part 450.32~~64~~.

As with the RTP, some MPOs refer to their four-year FTIP by other terms. Below is a table outlining the various terms used by federal, state and the MPOs to refer to the same documents:

Federal Term Used	State Term Used	Terms Used by MPOs
TIP	FTIP	TIP, MTIP, FTIP, RTIP
STIP	FSTIP	FSTIP

Projects included in the FTIP may include projects from two other State programming documents: (1) the State Highways Operation and Protection Program (SHOPP), and (2), the State Transportation Improvement Program (STIP). The purpose of the SHOPP program is to maintain safety, operational integrity and rehabilitation of the State Highway System. The STIP is a five-year capital improvement program of transportation projects on and off the State Highway System funded with revenues from the State Highway Account and other sources. Caltrans manages the SHOPP program, while the CTC manages the STIP. The STIP is a five-year document and is updated every other year. The SHOPP is a ten-year document and is adopted by the CTC in August of each odd numbered year. These two programs are major components of the FTIP.

The Federal Statewide Transportation Improvement Program (FSTIP) is a compilation of the FTIPs prepared by the 18 MPOs. It also includes projects in rural areas of the state not represented by an MPO (the Department programs projects in the FSTIP for the rural areas). The FSTIP is prepared by Caltrans and submitted to the Federal Highway Administration and Federal Transit Administration for approval. The FSTIP covers a four-year period and must be updated at least every four years. States have the option to update more frequently, if desired. Federally funded projects or non-federally funded regionally significant projects cannot be added to the FTIP or FSTIP unless they are included in the RTP. Specific requirements for the development and content of the FSTIP are contained in Title 23 CFR Part 450.21~~86~~.

The diagram in Appendix B illustrates the federal/state programming process.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.32~~46~~(a) requires MPOs to prepare a transportation improvement program (TIP). Title 23 CFR Part 450.21~~86~~(k) states that each project or project phase included in the STIP shall be consistent with the long range statewide transportation plan developed under Title 23 CFR Part 450.21~~64~~ and, in metropolitan planning areas, consistent with the approved metropolitan transportation plan developed under Title 23 CFR Part 450.32~~42~~.
~~**State:** None~~

Recommendations (Shoulds)
Federal: None
State: None

Best Practices: None

6.16 Transportation Projects Exempted from Senate Bill 375

Government Code Section 65080 (b)(2)(L) provides that projects programmed for funding on or before December 31, 2011, are not required to be subject to the provisions required in Government Code Section 65080 (b)(2), a Sustainable Communities Strategy and Alternative Planning Strategy, if they are:

- Contained in the 2007 or 2009 Federal Statewide Transportation Improvement Program, or
- Funded pursuant to the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, Chapter 12.49 (commencing with Section 8879.20) of Division 1 of Title 2, or
- Were specifically listed in a ballot measure prior to December 31, 2008, approving a sales tax increase for transportation projects.

Nothing in Government Code Section 65080 (b)(2)(L) shall require a transportation sales tax authority to change the funding allocations approved by the voters for categories of transportation projects in a sales tax measure adopted prior to December 31, 2010. For purposes of this subparagraph of the Government Code, a transportation sales tax authority is a district, as defined in Section 7252 of the Revenue and Taxation Code, that is authorized to impose a sales tax for transportation purposes.

Programmed for funding refers to the inclusion of funding in the 2007 or 2009 FSTIP; the approval of funding by the State Legislature or appropriate administrative agency; or the approval of funding by voters in a sales tax expenditure plan.

For the purposes of Government Code Section 65080 (b)(2)(H), prior to adopting a Sustainable Communities Strategy (SCS), the MPO shall quantify the reduction in greenhouse gas emissions (GHG) projected to be achieved by the SCS and set forth the difference, if any, between the amount of that reduction and the target for the region established by the ARB. As a result, an MPO shall include exempted projects in their SCS for purposes of modeling the impacts of the RTP on regional greenhouse gas (GHG) emissions. These projects, however, are exempt from the internal consistency requirement. In other words, these projects may be included in the RTP even if they are inconsistent with the SCS or other policies to reduce regional GHG emissions.

A project's status as exempt does not preclude an MPO from evaluating it for inclusion in the RTP and ultimately excluding it from the RTP at its discretion based on financial constraint, policy, or other considerations.

Requirements (Shalls)
Federal: None

~~**State:** California Government 7Code Section 65080 (b)(2)(H) and (L)~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

6.167 Regionally Significant Projects

Title 40 CFR Part 93.101 defines regionally significant projects as follows:

> *"Regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guide way transit facilities that offer an alternative to regional highway travel."*

All regionally significant projects must be included in an RTP air quality conformity determination by the MPO and FHWA regardless of its funding source. These regionally significant projects should be specifically identified and noted in the project-listing portion of RTP.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.326(f)~~4(d)~~ requires all regionally significant projects be included in the TIP regardless if the projects are to be funded with federal funds or not.
~~**State:** None~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

6.178 Regional ITS Architecture

Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion and improve safety. ITS is one way to increase the efficiency, safety and security of a transportation system. ITS involves the use of advanced computer, electronic and communications technologies and emphasizes *enhancing travel on existing infrastructure* (highways, streets, bridges, trains). Some examples of ITS technologies include advanced traffic signals, roadway and weather monitoring stations, bus and maintenance vehicle location systems, electronic roadside information signs and automated vehicle control systems.

The National ITS Program was established by ISTEA in 1991. Further federal regulations focused on extending ITS to regional planning efforts and training transportation professionals to deal with the range of issues associated with the adoption of advanced transportation technology. The development of the regional ITS architecture is not meant to compete with the formal transportation planning process. In fact, key ITS projects and initiatives are targeted early in the planning process. When updating RTPs, MPOs~~/RTPAs~~ should be sure to comply with current federal regulations. Title 23 CFR Part 450.306(g)~~(f)~~ states that "*The metropolitan transportation planning process shall, to the maximum extent practicable, be consistent with the development of applicable regional intelligent transportation systems (ITS) architectures, as defined in Title 23 CFR Part 940.*"

Title 23 CFR Part 940 establishes the protocol for developing a regional architecture plan that, in turn, conforms to national ITS architecture standards. The ITS regulations defines the responsibilities for creating and maintaining Regional ITS Architecture (RA) frameworks. Architecture maintenance is the process of updating a regional architecture with references to new projects and activities, new stakeholders; additions, retirement or replacement of equipment; and, changes to standards and protocols. Maintenance is an ITS program responsibility under Title 23 CFR Part 940.

The intent of the federal ITS requirement is to encourage reciprocal consistency. Title 23 CFR Part 940.5, Intelligent transportation system architecture and standards, calls for the "development of the regional ITS architecture (to) be consistent with the (Metropolitan) transportation planning process…". It is important to coordinate the general RTP planning efforts with plans for specific projects that entail the use of ITS technology. These 'nested' plans should be developed in an open forum and they should be consistent. The resultant plans would reflect consideration of both documents during the planning process.

The National ITS Architecture and other related resources can be found at the United States Department of Transportation's (US DOT's) Architecture website:

http://www.its.dot.gov/arch/arch.htm

Requirements (Shalls)
Federal: Title 23 CFR Part 450.306(g)~~(f)~~ states that the RTP shall (to the extent practicable) be consistent with the development of applicable regional ITS architectures as defined in Title 23 CFR Part 940.
~~**State:** None~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices:

http://www.bcag.org/Planning/index.html

6.1~~89~~ Performance Measures (Update for MAP-21/FAST)

Transportation performance measures consist of a set of objective, measurable criteria used to evaluate the performance and effectiveness of the transportation system, government policies,

plans and programs. Performance measures use measured metrics ~~statistical evidence~~ to determine progress toward specific and defined objectives. This includes both evidence of fact, such as measurement of pavement surface smoothness or the percentage of transit service delivered on time (quantitative) and measurement of customer perception determined through customer surveys (qualitative). Performance measures help set goals and outcomes, detect and correct problems, evaluate multi-year trends and document accomplishments.

These performance measures in the RTP set the context for judging the effectiveness of the FTIP as a program, by further RTP goals and objectives, whereas, the STIP Guidelines address performance measures of specific projects. Government Code Section 14530.1 (b)(5) requires more detailed project specific "objective criteria for meeting system performance and cost effectiveness of candidate projects" in the STIP Guidelines (Section 19). For additional information on the State Transportation Improvement Program (STIP) and the Fund Estimate (FE), please refer to Caltrans Division of Transportation Programming website at:

http://www.dot.ca.gov/hq/transprog/ctcliaison.htm

In small urban areas or rural areas, we recommend developing partnerships with neighboring jurisdictions, and collecting data and information in order to make a good case for more funding such as for re-pavement or rehabilitation of road projects.

The policy element could mention the goals and objectives, and the Action element is what would provide the result/s. For example, the Action element should provide a comparison of what is being measured, how it is measured and the results and analysis of the eventual outcomes.

On highway projects Caltrans considers system condition and performance measurements for interregional planning and the setting of State planning and programming activities. The State performance measures will focus on interregional trips between, into and through the regions. Caltrans coordinates its performance measure activity with MPOs~~/RTPAs.~~ MPOs~~/RTPAs~~ should develop and implement their own performance measures on regional roads, transit, rail, bicycle and pedestrian facilities etc. Examples of performance measures include:

1. ~~Improve Mobility/Accessibility;~~
2. Preserve the Transportation System;
3. Safety & Security;
4. Improve Mobility/Accessibility;
5. System Reliability;
6. Economic Well Being;
7. Investment Equity;
8. Cost-effectiveness;
9. Environmental Quality; and,
10. Customer Satisfaction.

The following criteria can measure the performance of specific projects:

1. Reduction in vehicle occupant, freight and goods travel time or delay;
2. Reduction in collisions and fatalities;
3. Reduction in vehicle and system operating costs;
4. Increase in access to jobs, markets and commerce;

5. Increase in transit ridership resulting from increased frequency and reliability of rail/transit service;
6. Reduction in air pollution emissions and greenhouse gas (GHG) emissions consistent with regional GHG emissions reduction targets set by ARB ;
7. Reduction in vehicle miles traveled;
8. Increase in bicycling and walking trips; and
9. Increase in freight and goods movement system efficiency.

Tradeoffs between performance measure thresholds should be clearly identified and priorities set to avoid confusion about project objectives, because some of these measures may compete or conflict with one another depending on the specific thresholds that are set. Regions should consider the following criteria for measuring cost-effectiveness of specific projects in their RTP:

1. Decrease in vehicle occupancy travel, freight and goods time per thousand dollars invested;
2. Decrease in collisions and fatalities per thousand dollars invested;
3. Decrease in vehicle and system operating cost per thousand dollar invested;
4. Improved multimodal access to jobs, markets and commerce per thousand dollars invested;
5. Increased frequency and reliability of rail/transit service per thousand dollars invested;
6. Increased transit ridership per thousand dollars invested;
7. Decrease in air pollution emissions and greenhouse gas (GHG) emissions per thousand dollars invested;
8. Increase in destinations accessible by walking, bicycling, and taking public transportation per thousand dollars invested; and,
9. Decrease in freight and goods movement system operating costs per thousand dollars invested.

The goals and objectives in the RTP should be linked and consistent with the goals and objectives of the FTIPs/RTIP and ITIP. Each MPO~~/RTPA~~ and Caltrans is being asked to provide a quantitative and/or qualitative evaluation of their FTIPs/RTIP and ITIP, commenting on each of the performance indicators and performance measures outlined in Table A of the STIP Guidelines. Attachment 1 has been developed to assist agencies with this task. Furthermore, Attachment 1 will be considered the evaluation report and will fulfill the requirement outlined in Section 19 of the STIP Guidelines, which can be accessed from the Caltrans Division of Programming website at: **verify information**

http://www.dot.ca.gov/hq/transprog/ctcliaison.htm

Requirements (Shall)
Federal: Update for 23 CFR 450.324(f)(3&4)
State: California Government Code Section 14530.1(b)(5) requires more detailed project specific information.

~~**Recommendations (Should)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices: Caltrans recommends using performance measures to measure the progress of regional projects. MPOs~~/RTPAs~~ should take into account the benefits of using performance

measures to establish a base of measurement and cross-reference the measurement with the performance measure outcome/results. These measurements can be used to justify the need for funding on specific projects. The scientific data may support regional needs and highlight the justification for funding a project that demonstrates the potential for improved performance on the Caltrans system or regional road network.

Caltrans has also developed a guidebook on how to implement performance measures in rural and small urban regions. This guidebook provides a toolbox from which to select appropriate methodologies for performance measures in your rural or small urban area. The Guidebook on "Performance Measures for Rural Transportation Systems" can be accessed at:

http://www.dot.ca.gov/perf

6.1920 Transportation Safety

While Caltrans supports consideration of security as separate from safety as a planning area, it also recognizes that security and emergency responses efforts are often inextricably linked. Clearly both are linked to ensuring system security and availability of emergency response services in the event of a natural or human-caused disaster. Due to unexpected large-scale security incidents or natural disasters, the potential for the necessity of a wide scale evacuation exists in almost every area of California. MPOs can use the CTP as a resource for recommendations for public safety and security improvements, such as supporting the implementation of Positive Train Control (PTC) into existing intercity rail cars.

Under a prior federal surface transportation reauthorization known as TEA-21, safety and security were lumped together in one federal planning factor. SAFETEA-LU ~~has~~ changed this in order to signal the importance of these two items. Safety and security were again updated with MAP-21/FAST and are separate federal planning factors. According to Title 23 CFR Part 450.306(~~a~~b), these two planning factors are:

1. Increase the safety of the transportation system for all motorized and non-motorized users; and,
2. Increase the security of the transportation system for ~~ability of the transportation system to support homeland security and to safeguard the personal security of all~~ motorized and non-motorized users.

The public expects, and demands, that the transportation system be safe and efficient for all users. Addressing the improvement of transportation safety can help alleviate a myriad of health, financial, and quality-of-life issues for travelers. Fatalities and injuries from motor vehicles crashes are a major public health problem. Historically, transportation safety has not been included as part of the transportation planning process. A clear need has developed for safety to be considered as part of planning process instead of as a reactionary consideration as it as been. To be adequately addressed, safety must be a key goal within the process. Improving the safety of the transportation network requires an active, conscious approach to monitoring the transportation system for safety problems and anticipating problems before they occur.

(Update for MAP-21/FAST)

SAFETEA-LU requires MPOs to draw a strong link between the Strategic Highway Safety Planning process described in Title 23 U.S.C. Section 148 and the regional planning process. Federal regulations also require MPOs to summarize the priorities, goals, countermeasures or projects of the Strategic Highway Safety Plan in their RTPs. As a result of new requirements

contained in SAFETEA-LU, each State must have a Strategic Highway Safety Plan (SHSP) in place by October 1, 2007 to receive its full share of federal transportation funds. ~~RTPAs will also be held to this same level of addressing safety in during the development of their RTPs.~~

Each MPO ~~and RTPA~~ should review the California SHSP during the preparation of the portion of the RTP addressing safety. The SHSP:

1. Highlights challenges to roadway user safety on California's roads;
2. Provides a descriptive account of fatalities experienced on California's roads;
3. Proposes high-level strategies to reduce fatalities for each challenge; and,
4. Serves as a guide for the implementation of specific projects and activities through 2010.

The California SHSP is available on the Caltrans website at:

http://www.dot.ca.gov/hq/traffops/survey/SHSP/

Requirements (Shall)
Federal: Title 23 CFR Part 450.306(b~~a~~)(2) states the planning process will address the safety of the transportation system for the public.
State: None

Recommendations (Should)
Federal: Title 23 CFR Part 450.306(d)(4)~~(h)~~ states that RTPs should be consistent with the California Strategic Highway Safety Plan (SHSP) and other transit safety and security planning and review processes.
Title 23 CFR Part 450.32~~42~~(h) states the RTP should include a safety element that incorporates or summarizes the priorities, goals, countermeasures or projects for the MPOs region contained in the SHSP.
~~**State:** None~~

~~**Best Practices:** None~~

6.2~~01~~ Transportation Security (Update for MAP-21/FAST)

A report was prepared by the American Highway Users Alliance titled "*Emergency Evacuation Report Card 2006*". The report stated: *"The principal resources of urban evacuation are private cars and publicly provided highways. As a result of the threat of terrorism, the interstate system is reasserting itself as a major element of national security (and defense), principally due to its capacity for handling mass evacuations."* The report conducted an initial evacuation capacity evaluation for the 37 largest urbanized areas in the United States. These urbanized areas were graded from "A" to "F". Of the four California urbanized areas identified in the report, three (San Diego, San Francisco and Los Angeles) received a grade of "F". Sacramento, the fourth California city identified in this report received a "D".

Due to unexpected large-scale security incidents or natural disasters, the potential for the necessity of a wide scale evacuation exists in almost every area of California. One of the lessons learned from the terrorist attack on the World Trade Center in New York City was that effective coordination and communication among the many different operating agencies in a

region is absolutely essential. Such coordination is needed to allow law enforcement and safety responses to occur in an expeditious manner, while at the same time still permitting the transportation system to handle the possibly overwhelming public response to the incident. Complementary to this is the need to make sure the public has clear and concise information about the situation and what actions they should take.
Although the immediate organizational response to security incidents and disasters will be the responsibility of law enforcement/safety agencies, there is an important role that MPOs~~/RTPAs~~ can play in promoting coordinated planning among first responders and transit agencies in anticipation of unexpected events or natural disasters. In addition, MPOs~~/RTPAs~~ could also provide a centralized location of information on transportation system conditions and the responses that might be useful in an emergency.

The RTP should identify the primary agencies responsible for preparing the necessary plans should a wide scale evacuation be necessary. The MPO~~/RTPA~~ should consult the appropriate emergency plan for the region to determine what evacuation plans are in place. Examples of strategies that could be addressed in regional mass evacuation plans could include:

1. Signaling – Allows traffic signals to extend for up to four minutes in either red or green to allow large amounts of vehicles or pedestrians to proceed in one direction;
2. Traffic Control Guides – Deploy traffic control personnel to problem intersections to manually direct traffic;
3. Roadblocks and Barricades – Deploy various methods such as portable signs, cones or barrels;
4. Electronic Signage – Changeable message signs have been installed along a number of major routes that could be used to provide information to evacuees;
5. Lane Expansion – Involves the use of using road shoulders to increase vehicle capacity of evacuation routes;
6. Contra flow Lanes – Contra flow or lane reversal involves directing traffic to use lanes in both directions to move a large amount of vehicles in one direction;
7. Use of Mass Transit – Transit could be used to assist in the evacuation of the public should it become necessary; and,
8. Airport Use – Airports can be used as staging areas for medical and food supplies as well as evacuation.

Requirements (Shalls)
Federal: Title 23 CFR Part 450.306(~~a~~b)(3) states the planning process will address the security of the transportation system for the public. Update for 23 CFR 450.324(f)(7)
~~**State:** None~~

Recommendations (Shoulds)
Federal: Title 23 CFR Part 450.32~~2~~4(h) states that RTPs should be consistent with emergency relief and disaster preparedness plans, strategies and policies that support homeland security and safeguard the personal security of all motorized and non-motorized users.
~~**State:** None~~

~~**Best Practices:** None~~

6.212 Congestion Management Process

The RTP shall describe and identify the transportation system management (TSM) and operations strategies, actions and improvements it will employ to manage and operate the urban freeway system, its corridors and major local parallel arterials for highest or increased productivity. Increased productivity can include all modes, including transit, bicycles, and pedestrians. There may be many ways to increase mobility without increasing greenhouse gas emissions. One way may be to improve the efficiency and productivity of the corridor through operational, transit and highway projects. TSM and operations strategies, actions and improvements shall include at a minimum traffic detection, traffic control, incident response and traveler information. Transportation demand strategies shall also be identified and can include, but are not limited to: Pricing, Transportation Planning, and Investment Strategies. Section 6.27 and Appendix I of the Guidelines contain additional information on strategies that can be used to manage congestion and reduce regional greenhouse gas emissions. The approach to TSM and operations shall be integrated into system planning documents. the Corridor System Management Plans (CSMPs). TSM and operations strategies shall be identified on non-urban freeway and rural corridors to the extent applicable.

Coordination of Project Programming Projects

Programming of projects shall be scheduled so that project sequencing in a corridor achieves the most effective performance results. mobility gains. In State Highway System congested urban freeway corridors the system planning documents CSMP should identify the most effective project sequencing, including projects identified for major local arterials. System planning CSMP strategies to address performance issues can include: system evaluation and monitoring, maintenance and preservation, smart land use and demand management, Intelligent Transportation Systems, operational, and capacity strategies, multimodal and Complete Streets concepts.

Congestion Management Process in the RTP

The RTP should identify urban freeway corridors with current and projected recurrent daily vehicle hours of delay that are a priority for preparing corridor system management plans (CSMPs). and TCRs The RTP should include by corridor all strategies, actions and improvements identified in the adopted TCR or CSMP that are needed to restore capacity and describe how the corridor will be managed across jurisdictions and modes to improve corridor performance preserve corridor productivity based upon performance measurement. The RTP should include a reasonable time-line for each urban freeway corridor to be restored to full capacity and identify actions to preserve capacity restoration. The financial element of the RTP should identify funding by corridor to implement projects and strategies identified in system planning documents the CSMP. The CSMP approach can add Approaches to improving corridor performance can include new capacity, improved maintenance and operation of existing infrastructure, maintain existing infrastructure, invest in and encouraging the use of alternative modes (such as transit and rail, bicycling and walking), encouraging smart land use, integrated corridor management strategies, among others. transportation management systems, incident management and other appropriate strategies.

The RTP should describe roles and relationships among units of local government, modal agencies, the California Department of Transportation Caltrans and related agencies for managing the corridor for highest mobility benefits and for measuring and evaluating performance.

Title 23 CFR Part 450.3220 applies only to the MPOs below and are federally designated Transportation Management Areas (TMAs). These TMAs shall develop a congestion management process that results in a multimodal system performance measures and strategies that can be reflected in the RTP. TMAs are defined as an urbanized area with a population over 200,000 as defined by the U.S. Census Bureau. As of 2010, there are a total of nine designed TMAs in California. These MPOs designated as TMAs are:

1. Southern California Association of Governments (SCAG);
2. Metropolitan Transportation Commission (MTC);
3. San Diego Association of Governments (SANDAG);
4. Sacramento Area Council of Governments (SACOG);
5. Council of Fresno County Governments (COFCG);
6. Kern Council of Governments (KCOG);
7. San Joaquin Council of Governments (SJCOG);
8. Stanislaus Council of Governments (StanCOG); and,
9. Santa Barbara County Association of Governments (SBCAG) – Does not meet the 200,000 population threshold however the MPO requested to be designated a TMA.

Requirements (Shalls)

Federal: Title 23 CFR Part 450.3220(dc) states the congestion management process shall be developed, established and implemented as part of the planning process.

~~**State:** None~~

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450.3220(b) states the congestion management process should result in performance measures that can be reflected in the RTP. Update for 23 CFR 450.322(h)

~~**State:** None~~

~~**Best Practices:** None~~

Regional Greenhouse Gas Emissions Requirements and Considerations in the RTP

6.223 Greenhouse Gas Emissions and Targets Background

Current law requires that no later than ~~June 30, 2010~~ September 2018 the California Air Resources Board (ARB) shall ~~release draft GHG emissions reduction targets for each region and no later than September 30, 2010, ARB~~ shall provide each MPO with updates to the region's GHG emissions reduction targets for automobile and light trucks for 2020 and 2035. In the resolution adopting the scoping plan, the ARB stated its intent that the SB 375 GHG emissions reduction targets will be the most ambitious achievable. In 2010, the first targets were ~~These targets are~~ established with consideration given to methodology recommendations from an appointed Regional Targets Advisory Committee (RTAC). The RTAC released its Recommendation Report entitled: *Recommendations of the Regional Targets Advisory Committee (RTAC) Pursuant to SB 375* on September 29, 2009 which is available at the following link:

http://www.arb.ca.gov/cc/sb375/rtac/report/092909/finalreport.pdf

Add language on current status of Targets and ongoing Target update

6.234 Contents of the Sustainable Communities Strategy (SCS):

SCS Background

Integrating transportation, land use, and housing, in the planning process is vital to reducing regional greenhouse gas (GHG) emissions from cars and light trucks. The Sustainable Communities Strategy or SCS, was added as a new component of the RTP following the passage of SB 375 in September 2008, pursuant to Government Code Section 65080(b)(2).

For over 30 years, the primary purpose of the RTP has been to identify the transportation projects, programs and services needed to address both current conditions as well as future regional growth and to specify the major transportation projects to be programmed given the financial resources available. Pursuant to Government Code Section 65080(b)(2)(B) the SCS requires MPOs to work with local land use authorities and other appropriate entities to address regional land uses, regional housing needs, regional resource areas and farmland, as well as regional transportation needs in the RTP.

Government Code Section 65080(b)(2)(B)(vii) requires the SCS to set forth a forecasted development pattern for the region that when integrated with the transportation network, and other transportation measures and policies, will reduce regional GHG emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the regional GHG emission reduction target set by ARB. Government Code Section 65080.01(c) defines feasible as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. In its advisory report to the ARB board, the RTAC stated that, “if a SCS for a region cannot meet its target, the SCS should still be a substantial improvement over Business As Usual (BAU) land use and transportation planning and that their regions and member cities would see substantial co-benefits as a result of implementing the SCS as planned.”
If the RTP, including the SCS, does not achieve the regional GHG reduction target, the MPO can elect to either revise the SCS or prepare an Alternative Planning Strategy (APS) that is separate from the RTP. If a region must prepare an APS, that alternative scenario must describe why the development pattern, measures, and policies in the APS are the most practicable choices for achievement of the GHG emissions reduction targets as required by Government Code Section 65080(b)(2)(I)(iii).

Government Code Section 65080(b) requires that the RTP be an internally consistent document. This means that the contents of the Policy, Action, Financial, and Sustainable Communities Strategy elements of the RTP shall be consistent with one another. As a result, transportation investments and the forecasted development pattern in the SCS should be complementary and not contradictory. For information regarding transportation projects exempt from the internal consistency provisions of SB 375 pursuant to Government Code Section 65080(b)(2)(L) please refer to Section 6.16 of these Guidelines.

Requirements of a Sustainable Communities Strategy (SCS)

California Government Code Section 65080(b)(2)(B) requires that all MPOs shall prepare a Sustainable Communities Strategy, subject to the requirements of Part 450 of Title 23 of, and Part 93 of Title 40 of the Code of Federal Regulations, including the requirement to utilize the most recent planning assumptions considering local general plans and other factors. The Sustainable Communities Strategy shall:

1. Identify the general location of uses, residential densities, and building intensities within the region;
2. Identify areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth;
3. Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Government Code Section 65584;
4. Identify a transportation network to service the transportation needs of the region;
5. Gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in Government Code Section 65080.01(a) and (b);
6. Consider the state housing goals specified in Government Code Sections 65580 and 65581;
7. Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the state board;
8. Allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. 7506)

In addition, Government Code Section 65584.01(i)(1) states that it is the intent of the Legislature that housing planning be coordinated and integrated with the regional transportation plan. To achieve this goal the allocation plan shall allocate housing units within the region consistent with the development pattern included in the sustainable communities strategy.

Requirements (Shall):
Federal: Title 23 CFR Part 450 and Title 40 CFR Part 93
State: Government Code Section 65080, and 65584.04(i)(1)

~~**Recommendations (Should):**~~
~~**Federal:** none.~~
~~**State:** none.~~

6.2~~45~~ Sustainable Communities Strategy Development:

This section is intended to describe methods for the implementation of the statutory requirements for the development of an SCS recognizing that there is great variation among the 18 MPOs within the state and that flexibility is an important component in SCS development. The SCS shall be prepared in such a way as to allow for the quantification of regional GHG emissions reduction required pursuant to Government Code Section 65080(b)(2)(H).

Visualization and Mapping

Pursuant to Title 23 CFR Part 450.316(a), an RTP is required to include visualization techniques such as GIS-based information, graphs, maps, charts, and other visual aids that are useable and understandable to the public. Additionally, Government Code Section 65080(b)(2)(F)(iii) requires that public workshops held during the development of the SCS, to the extent practicable, shall include urban simulation computer modeling to create visual representations of the SCS, and APS if applicable. Visualization techniques associated with SCS development should be documented and included in the final SCS. These visualization techniques may build upon existing federal and state requirements for the RTP and could include maps, illustrations, diagrams, and other visual aids which illustrate the SCS requirements as outlined in Government Code Section 65080(b)(2)(B).

SCS Planning Assumptions

As required by Government Code Section 65080(b)(2)(B)(i) and (vii), the SCS shall identify the general location of uses, residential densities, and building intensities within the region as well as a forecasted development pattern for the region that is based upon the most recent planning assumptions considering local general plans and other factors. In addition, according to Government Code Section 65080(b)(2)(viii), the SCS must allow the RTP to comply with Section 176 of the Federal Clean Air Act (42 USC Section 7506). Federal air quality conformity regulations require that land use, population and employment model assumptions are based upon the best available information and that there is a reasonable relationship between the expected land use and the envisioned transportation system. The reasonableness of a particular planning assumption is determined through consultation involving the Federal Highway Administration and Environmental Protection Agency in addition to state, local, and MPO representatives. MPOs should refer to Part 450 of Title 23, and Part 93 of Title 40 of the Code of Federal Regulations as well as the EPA document *Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations (Revision to January 18, 2001 Guidance Memorandum)* (see link provided below) for more information about consultation and the use of current planning assumptions.

http://www.fhwa.dot.gov/environment/conformity/lpa_guid08.pdf

Pursuant to Government Code Section 65080(b)(2)(K), neither the SCS nor the APS regulates the use of land, and does not supersede the land use authority of cities and counties within the region. City and county land use policies and regulations, including general plans, are not required to be consistent with the RTP, SCS or the APS.

In developing an SCS, an MPO shall consult with cities and counties about their existing general plans and foreseeable changes to their general plans over the period covered by the RTP. MPOs are also required by Government Code Section 65080(b)(2)(G) to consider spheres of influence that have been adopted by the Local Agency Formation Commissions (LAFCOs) within the region during development of the SCS. Further, MPOs should consult with LAFCOs within the region regarding municipal service review boundaries, foreseeable changes to those boundaries and service capacities over the period covered by the RTP as well as any local LAFCO adopted policies regarding preservation of agricultural and open space land, island annexations, annexations, service extensions and sphere changes. MPOs are also encouraged to request the most recent Municipal Service Reviews for local agencies providing services in

the region, as well as, LAFCO-prepared GIS maps, if available, for all local agency boundaries and spheres of influence in the region.

The legislative findings for SB 375 identify that: "greenhouse gas emissions from automobiles and light trucks can be substantially reduced by new vehicle technology and by the increased use of low carbon fuel. However, even taking these measures into account, it will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." The legislative findings of SB 375 also recognize that: "California local governments need a sustainable source of funding to be able to accommodate patterns of growth consistent with the state's climate, air quality, and energy conservation goals." (Chapter 728, Statutes of 2008, Section 1(c) and (i))

In addition to the need for the SCS to be designed to achieve GHG emissions reductions, there are many other reasons why planning assumptions can be different than historical trends or existing plans and boundaries. The following is a non-exclusive list of circumstances when it may be appropriate or necessary to make an assumption that is different from historical trends or existing plans and boundaries:

1. The assumption accounts for new demographic, market, regulatory, or environmental trends that are likely to influence development choices, particularly in circumstances when it has been several years since a general plan has been updated.
2. The assumption accounts for adopted blueprints, habitat conservation plans or other plans which may accurately reflect likely future growth patterns.
3. The assumption accounts for general uses and densities within general plans that may be required to comply with state law. Examples required pursuant to Article 10.6 of the Planning and Zoning Law (housing element law) include: achieving an adequate housing site inventory for the previous or new planning period in order to meet the housing needs of all economic segments of the population; existing general plans do not yet include land use designations with zoning to accommodate the existing RHNA and cannot accommodate the next RHNA without amendment of land use designations and rezoning; local governments have not yet completed a scheduled rezoning program of an adopted housing element; or existing plans reflect ordinances, policies, voter-approved measures, or other standards which prevent the jurisdiction from accommodating the RHNA.
4. The assumption accounts for differences in the time horizons between the RTP (20 to 40 years or more) and local general plans (often 15 - 20 years).
5. The assumption accounts for increases or decreases in state, federal, or local funding of programs that influence the extent to which a program may or may not be implemented.
6. The assumption accounts for statutory requirements or other reasons identified through consultation with federal, state, and local agencies.

When planning and land use assumptions are made that are significantly different than historical trends, federal, state, and local agencies should be consulted as to whether the assumptions are reasonable, best available, and consistent with the transportation system set forth in the plan. The MPO should base its assumptions on the most reasonable forecasts taking into account changing population demographics and market demand over the life of the RTP. To the extent that they are reasonable and consistent with federal requirements, an MPO may base an SCS on planning assumptions that differ from historical trends, existing plans and boundaries. The MPO should document the assumptions made to develop the SCS.

Addressing Housing Needs in the SCS

The passage of SB 375 increased the linkage of the Regional Housing Need Allocation (RHNA) process required by State Housing Element Law with the RTP development and adoption process. Regional Transportation Plans are to be updated at least every four years for non-attainment areas, and every five years for attainment areas. Housing element updates are now to be adopted every 8 years for jurisdictions within non-attainment areas, except for those which must update every four years if they fail to adopt their housing element update within 120 days of the due date pursuant to Government Code Section 65588(e)(4). Housing elements for jurisdictions within attainment area MPOs ~~and RTPAs~~ not within MPOs are to continue to be adopted every 5 years except in those regions that elect to adopt an RTP every four years pursuant to Government Code Section 65080 (b)(2)(M).

The SCS shall accommodate the RHNA pursuant to Government Code Section 65584 and consider the state housing goals specified in Government Code Section 65580 and 65581. The development pattern of the SCS shall consider existing residential zoning obligations to accommodate the RHNA of the current housing element planning period as well as residential density implications for the pending RHNA with which the SCS is being coordinated. The SCS development pattern shall not preclude an individual community from accommodating its existing or pending RHNA.

Pursuant to Government Code Section 65080(b)(2)(B)(ii), the SCS shall identify areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan, taking into account net migration into the region, population growth, household formation, and employment growth. This is separate from the requirement pursuant to 65080(b)(2)(B)(iii) to identify areas sufficient to house an eight year projection of the housing need pursuant to the Regional Housing Needs Allocation (RHNA) process in Section 65584 *et seq.*

Unlike the RHNA process which allocates a minimum amount and economic distribution of housing to be accommodated within the housing element planning period, there are not comparable, formal parameters for the entire RTP planning period. The planning period for the RTP is at least 12 years longer than the housing element planning period accommodated in the RTP.

Thus, MPOs should include an analysis within the SCS that looks forward over the entire planning period and reasonably addresses what the housing need may be and where the region can meet its housing needs for all economic segments of the population over the course of the RTP planning period. This analysis should assume a variety of housing types and densities including multi-family densities in each jurisdiction. Documentation to support this analysis should be prepared and may include a narrative description, map, data, or other resources (or any combination thereof) that identifies where within the region this need can be met. Like all planning assumptions, assumptions related to identifying housing needs beyond the RHNA allocation period should be reevaluated each time the RTP is updated.

Government Code Section 65080(b) (2)(B)(iii) requires that the SCS identify areas within the region sufficient to house the projection of the regional housing need for the region pursuant to Government Code Section 65584. The Regional Housing Need Allocation (RHNA) process establishes a minimum amount of housing development capacity for each city's and county's housing element. Each city and county must demonstrate this capacity with adequate sites, and development standards and programs to accommodate the RHNA within the planning period of

an updated housing element. The RHNA process includes many steps and statutorily required deadlines which are included in more detail in Appendix J. Key steps of the RHNA process for Councils of Governments (COGs) which are MPOs, or which are within or coterminous with MPO boundaries, are as follows:

1. Methodology Development for COG's RHNA Plan (more than 24 months before housing element due date): the COG, with survey information and participation of its local governments, develops methodology for allocation of the region's housing need determination.
2. Housing Need Determination for the Region (24-26 months (the later applicable for COGs using subregional delegation) prior to the housing element due date): following consultation with the COG, the Department of Housing and Community Development (HCD) issues the total housing need determination for the region.
3. Draft Regional Housing Need Allocations (at least 18 months before the due date for adoption of the housing element): the COG develops a Draft RHNA Plan allocating the region's housing need among the cities and counties within the region. The Draft RHNA Plan is first subjected to requests for revision followed by opportunity for local government appeals. This plan is developed concurrently with development of the RTP, including the SCS.
4. RHNA Plan Adoption (adopted at least one year before the housing element due date): the COG adopts a Final RHNA Plan.
5. HCD Approval of Final RHNA Plan (HCD's finding for the Final RHNA Plan is due within 60 days of receipt): the final RHNA Plan is subject to review and approval by HCD for consistency of the plan with its (prior) housing need determination for the region. If not, HCD is authorized to revise the COG allocations for a Final RHNA Plan.
6. Housing Elements are Updated (must be updated within 18 months of adoption of the RTP): each local government within the region must adopt an updated housing element specifying housing sites, policies, and programs that will accommodate its allocation of units from the Final RHNA Plan approved by HCD.

For the eight-year planning period for housing element revisions, the COG shall allocate housing units to cities and counties within the region consistent with the development pattern included in the SCS as required by Government Code Section 65584.04 (i). Government Code Section 65584.09 (a)(b)(c) also requires that if a city or county in the prior planning period failed to identify or make available adequate sites to accommodate that portion of the regional housing need allocated pursuant to Section 65584, then the city or county shall, within the first year of the planning period of the new housing element, zone or rezone adequate sites to accommodate the un-accommodated portion of the regional housing need allocation from the prior planning period. Further, the law requires that this shall be in addition to any zoning or rezoning required to accommodate the jurisdiction's share of the regional housing need pursuant to Section 65584 for the new planning period.

Requirements (Shall):
Federal: Title 23 CFR Part 450 and Title 40 CFR Part 93
State: Government Code 65080, Government Code 65584.01 (c) & (d), Government Code 65583.2 (c), Government Code 65584.04 (d), (f) & (i), Government Code 65584.05 (g)

~~**Recommendations (Should):**~~
~~**Federal:** none.~~
~~**State:** none.~~

Relevant Links:

Appendix 1 of HCD Memorandum: Amendment of State Housing Element Law – AB 2348, Listing of Default Densities by Jurisdiction:

http://www.hcd.ca.gov/hpd/hrc/plan/he/ab2348stat04ch724.pdf

Best Practices:

To coordinate and integrate region-wide efforts regarding SCS development and implementation of SB 375 requirements, the Bay Area Joint Policy Subcommittee comprised of the Association of Bay Area Governments, the Bay Area Air Quality Management District, the Bay Area Conservation and Development Commission and the Metropolitan Transportation Commission developed *Policies for the Bay Area's Implementation of SB 375*. For additional information on this regional coordination effort please see:

http://www.abag.ca.gov/jointpolicy/jpc-sb375-implementation.htm

For information regarding the Sustainable Community Strategy development efforts in the San Diego Region coordinated by San Diego Association of Governments please see:

http://www.sandag.org/index.asp?projectid=360&fuseaction=projects.detail

For information regarding the Sustainable Community Strategy development efforts in Southern California coordinated by the Southern California Association of Governments please see:

http://www.scag.ca.gov/sb375/index.htm

As a best practice to evaluate the implementation of the land use development plan in the SCS, an on-going monitoring program and periodic reporting program could be conducted. The monitoring program should be at a sufficient spatial and temporal level of detail to satisfy several objectives: a) identify regional or sub-regional growth patterns, b) provide jurisdiction level information needed to evaluate their role in the regional plan, and c) evaluate the consistency requirement for land use projects under SB 375 CEQA streamlining.

Addressing Regional Transportation Needs

Government Code Section 65080 (b)(2)(B)(iv) requires that an SCS identify a transportation system to service the transportation needs of the region. While the SCS requirements for the RTP do not change the process used to establish transportation needs for the region, the SCS forecasted development pattern and transportation network, measures, and policies should complement one another to reduce regional GHG emissions from light duty trucks and automobiles. Decisions to expand or modify the transportation system should be made in recognition of the effects of transportation on development location and density, and also in recognition of the following relationships between land use and transportation:

- Transit investments need supporting levels of land use density and intensity.
- The speed of the network and the cost of travel may influence the location choices of new development.

- Placing land uses closer together and minimizing unnecessary barriers to circulation increases travel choices such that transit, walking, and bicycling become viable while also reducing transportation sector energy use and GHG emissions.

The SCS may also include transportation policies designed to reduce GHG emissions such as strategies for Transportation Demand Management (TDM) and Transportation System Management (TSM). Additional information regarding TDM, TSM and other strategies is available in Section 6.27 and Appendix I.

Addressing Resource Areas and Farmland

The SCS is required pursuant to Government Code Section 65080(b)(2)(B)(v) to gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in Government Code Section 65080.01 (a) and (b), listed below:

(a) "Resource areas" include:

(1) All publicly owned parks and open space;
(2) Open space or habitat areas protected by natural community conservation plans, habitat conservation plans, and other adopted natural resource protection plans;
(3) Habitat for species identified as candidate, fully protected, sensitive, or species of special status by local, state, or federal agencies or protected by the federal Endangered Species Act of 1973, the California Endangered Species Act, or the Native Plan Protection Act;
(4) Lands subject to conservation or agricultural easements for conservation or agricultural purposes by local governments, special districts, or nonprofit 501(c)(3) organizations, areas of the state designated by the State Mining and Geology Board as areas of statewide or regional significance pursuant to Section 2790 of the Public Resources Code, and lands under Williamson Act contracts;
(5) Areas designated for open-space or agricultural uses in adopted open-space elements or agricultural elements of the local general plan or by local ordinance;
(6) Areas containing biological resources as described in Appendix G of the CEQA Guidelines that may be significantly affected by the sustainable communities strategy or the alternative planning strategy; and
(7) An area subject to flooding where a development project would not, at the time of development in the judgment of the agency, meet the requirements of the National Flood Insurance Program or where the area is subject to more protective provisions of state law or local ordinance.

(b) "Farmland" means farmland that is outside all existing city spheres of influence or city limits as of January 1, 2008, and is one of the following:

(1) Classified as prime or unique farmland or farmland of statewide importance.
(2) Farmland classified by a local agency in its general plan that meets or exceeds the standards for prime or unique farmland or farmland of statewide importance.

The SCS may include a narrative description, map, data, or other resources (or any combination thereof), developed in consultation with the appropriate resource agencies including cities and counties, which identifies regional resource areas and farmland.

As a best practice to comply with the requirements of CA Government Code 65080 (b)(2)(B), MPOs, based on locally and regionally significant considerations, may develop a regional conservation framework that identifies and considers "resource areas" and "farmland" as defined in Government Code Section 65080.01(a) and (b). To demonstrate consideration of resource areas and farmland, the SCS could identify regional priority areas for conservation and mitigation efforts, based upon existing publicly available information and developed in consultation with the appropriate resource agencies including cities and counties.

The following represent best practice examples of how MPOs have conducted regional conservation planning efforts focusing on resource areas and farmland:

North County Multiple Habitat Conservation Program (MHCP) coordinated by SANDAG:
http://www.sandag.org/index.asp?projectid=97&fuseaction=projects.detail

Rural-Urban Connections Strategy (RUCS) developed by SACOG:
http://www.sacog.org/rucs/

The following represent possible sources of information to assist MPOs in gathering and considering the best practically available scientific information regarding resource areas and farmland:

Natural Community Conservation and Habitat Conservation Planning Information:

CA Department of Fish and Game Natural Community Conservation Planning information
http://www.dfg.ca.gov/habcon/nccp/

USFWS Endangered Species Habitat Conservation Planning Information
http://www.fws.gov/endangered/hcp/index.html

Pacific Southwest Region USFWS Offices for Ecological Information
http://www.fws.gov/cno/es/

Sacramento FWS Office list of Regional Habitat Conservation Plans
http://www.fws.gov/sacramento/es/hcp_list.htm

Carlsbad FWS Office information regarding Regional Habitat Conservation Plans
http://www.fws.gov/carlsbad/HCPs/CarlsbadCFWORegionalHCPs%20.html
Ventura FWS Office information regarding Regional Habitat Conservation Plans
http://www.fws.gov/ventura/endangered/hconservation/hcp.html

Information regarding City and County Zoning Ordinances:
http://ceres.ca.gov/planning/

Information regarding Farmland Mapping and Williamson Act:
www.conservation.ca.gov/dlrp/fmmp

www.conservation.ca.gov/dlrp/pages/index.aspx

Information regarding adopted Open Space Elements is available through the Governor's Office of Planning and Research (OPR) California Planner's Book of Lists:
http://www.opr.ca.gov/planning/publications/2010bol.pdf

Additionally Sections 5.3 and 5.5 of the Guidelines include more information regarding best management practices for the consideration of regional environmental resource areas and farmland and advanced resource mitigation planning in RTP development.

Designing a Forecasted Development Pattern in the SCS

MPOs are required to develop a forecasted development pattern for the region that, when integrated with the regional transportation network and other transportation measures and policies, will reduce regional greenhouse gas emissions from cars and light trucks to achieve, if there is a feasible way to do so, the regional targets set by ARB. In preparing the forecasted development pattern, empirical relationships between land use, transportation and the resulting GHG emissions should be considered. Such factors may include, but are not limited to:

- Destination-proximity, or the accessibility of an area to other activities.
- Density and clustering of land uses, typically measured by the number of dwelling units, shops, and/or employees per acre or square mile, floor area ratio (FAR), and other similar measurements.
- Diversity or mixture of land uses, including residential, commercial, and business land uses within buildings and/or in proximity to one another.
- Distance to transit, including rail, bus, and/or ferry.
- Design and layout of an area's transportation facilities to accommodate multiple modes of transportation.

In developing the forecasted development pattern for the SCS, local context should also be considered. MPOs, local jurisdictions, and other stakeholders should strive to create a supportive consensus on an SCS, so that the SCS may guide local jurisdictions in future general plan updates.

Considering Social Equity in the SCS

The inclusion of the entire range of community interests in the development of the RTP (including the SCS) is a key element in the process, and is required by state and federal law. Providing more transportation and mobility choices such as increased transit, bicycle, and pedestrian facilities, as well as appropriate housing choices near job centers increases opportunities for all segments of the population at all income levels. Each MPO is encouraged to develop, enhance, and use visioning tools during the SCS development process enabling the public and policy makers to clearly see social equity impacts of various planning scenarios and make informed choices. These include impacts on air quality, access to transit, household transportation costs, housing costs and overall housing supply. Additional information regarding specific statutory requirements for social equity and environmental justice considerations in the RTP is available in Section 4.2 and additional information regarding social equity and environmental justice issues in the public participation process is available in Section 4.3.

Specific SCS Development Requirements for MPOs in Multi-County Regions

There are five Multi-County MPO's within California:

- Association of Monterey Bay Area Governments (AMBAG): covers a three county region.

- Metropolitan Transportation Commission (MTC): covers a nine county region in the San Francisco Bay Area.
- Southern California Association of Governments (SCAG): covers a six county region.
- Sacramento Area Council of Governments (SACOG): covers a six county region.
- Tahoe Metropolitan Planning Organization (TMPO): covers a portion of Placer and El Dorado Counties.

Government Code Section 65080(b)(2)(C), (D) and (N) assigns certain responsibilities and collaboration requirements or options for the development of an SCS in multi-county MPO regions and in the San Joaquin Valley. The AMBAG and SACOG multi-county MPO regions are not specifically addressed in 65080(b)(2)(C), (D) or (N) however, **RTPAs** within these regions should work closely with the appropriate MPO when developing their RTPs for inclusion in the MPOs RTP, as these multi-county MPO regions are still required to fully comply with the SCS requirements outlined in 65080(b)(2)(B).

San Francisco Bay Area – Pursuant to Government Code Section 65080(b)(2)(C)(i), within the nine county San Francisco Bay Area region, the Association of Bay Area Governments (ABAG) is responsible for the land use and housing related issues in the SCS. The Metropolitan Transportation Commission is responsible for identifying the regional transportation needs. ABAG and MTC are jointly responsible for setting forth a forecasted development pattern for the region that, when integrated with the transportation network, measures and policies, will reduce GHG emissions from passenger vehicles and if, feasible, achieve GHG reduction targets set by the ARB.

Southern California Association of Governments (SCAG) – Within the SCAG region, there are six County Transportation Commissions (CTCs) and fourteen sub-regional COGs. Government Code Section 65080(b)(2)(C) allows a COG and a CTC to jointly develop a SCS and APS (if needed). SCAG has developed a document titled: "*Framework and Guidelines by the Southern California Association of Governments for the Development of a Sub-Regional SCS/APS*". This document is intended to provide guidance for the development of a sub-regional SCS or APS, and should be consulted prior to any SCS/APS related work. SCAG shall include the sub-regional work within their overall SCS contained in SCAG's RTP, to the extent that the sub-regional work is consistent with the provisions of Government Code 65080 and federal law. Please see Government Code 65080 (b)(2)(C) for specific requirements.

San Joaquin Valley - The following eight counties constitute the MPOs located in the San Joaquin Valley: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare. These eight counties are located in one air quality basin and the MPOs have a long history of collaborating on the preparation of their respective RTPs particularly as it relates to the federal air quality conformity determination. Government Code section 65080 (N) stipulates that two or more of these MPOs may work together on the development of a joint SCS or APS, should they choose to do so.

Tahoe Metropolitan Planning Organization (TMPO) – Pursuant to Government Code Section 65080(b)(2)(C)(ii), within the jurisdiction of the Tahoe Regional Planning Agency, as defined in Sections 66800 and 66801, TMPO shall use the Regional Plan for the Lake Tahoe Region as the sustainable community strategy, provided it complies with Government Code Section 65080(b)(2)(B)(vii) and (viii).

Requirements (Shall):

Federal: Title 23 CFR Part 450, Title 40 CFR Part 93, and Title IV of the Civil Rights Act of 1964
State: Government Code Sections 11135 and 65080

~~**Recommendations (Should):**~~
~~**Federal:** none.~~
~~**State:** none.~~

6.2~~5~~6 Sustainable Communities Strategy (SCS) Process, Review and Acceptance:

Regional Greenhouse Gas Emissions Reduction Targets

State statute requires the ARB to set regional GHG emissions reduction targets for each MPO. Before setting the target for a region, ARB will exchange technical information with each MPO and the respective air quality management district. The MPO may recommend a target for its region during this process. Advanced and continuous communication and consultation between ARB and each MPO is highly recommended until the final target is adopted.

Questions regarding regional GHG emission reduction targets should be directed to ARB.

SCS Public Participation and Input/Consultation with Local Elected Officials

SB 375 increased the minimum level of public participation in the regional transportation planning process as well as the consultation required with local elected officials during the development of a SCS (and APS, if applicable). For more detailed information regarding these requirements for the development of an SCS (and an APS, if applicable) please refer to Sections 4.3 and 4.6 of the RTP Guidelines.

California Air Resources Board Review of the SCS

Prior to starting the public participation process adopted pursuant to Government Code 65080 (b)(2)(F), the MPO shall submit a description to the state board of the technical methodology it intends to use to estimate the greenhouse gas emissions from its SCS and, if appropriate, its APS. ARB shall respond to the MPO in a timely manner with written comments about the technical methodology, including specifically describing any aspects of the methodology it concludes will not yield accurate estimates of greenhouse gas emissions, and suggested remedies. The MPO is encouraged to work with the ARB until the state board concludes that the technical methodology operates accurately.

After adoption of the RTP, a MPO shall submit a SCS or an APS, if one has been adopted, to the ARB for review, including the quantification of the greenhouse gas emission reductions the strategy would achieve and a description of the technical methodology used to obtain that result. Review by the ARB shall be limited to acceptance or rejection of the MPO's determination that the strategy submitted would, if implemented, achieve the greenhouse gas emission reduction targets established by ARB. The ARB shall complete its review within 60 days.

If ARB determines that the strategy submitted would not, if implemented, achieve the greenhouse gas emissions reduction targets, the MPO shall revise its strategy or adopt an APS, if not previously adopted, and submit the strategy for review pursuant to the paragraph above.

At a minimum, the MPO must obtain ARB acceptance that an APS would, if implemented, achieve the greenhouse gas emission reduction targets established for that region by the state board.

Advanced and continuous communication and consultation between each MPO and ARB is encouraged until the final SCS, or APS if applicable, is adopted.

A flowchart depicting the RTP Development/Approval Process for MPOs including ARB review of the SCS, and APS if applicable, is available in Section 2.7. For additional information on the SCS Review process please refer to the California Air Resources Board SB 375 Implementation website:

http://www.arb.ca.gov/cc/sb375/sb375.htm

6.267 Land Use and Transportation Strategies to Address Regional GHG Emissions

Better land use and transportation strategies will continue to be important to ~~both~~ MPOs ~~and RTPAs~~ in developing their RTPs to meet local, regional and statewide mobility and economic needs while meeting the requirements of SB 375 and AB 32 to reduce regional Greenhouse Gas (GHG) emissions. ~~RTPAs and~~ MPOs can encourage well-designed and sustainable local and regional projects that encourage reductions in GHG emissions by considering and implementing land use and transportation strategies. The strategies set forth below and in Appendix I are suggested methods that may help the MPO ~~and RTPA~~ to reduce regional GHG emissions.

Land use strategies can include, but are not limited to:

- Mixed use, infill, and higher density development projects.
- Public transit incorporated into project design.
- Open space, parks, existing trees, and replacement trees.
- “Brownfields” and other underused property near existing public transportation and jobs developed.
- Pedestrian and bicycle-only streets and plazas within developments.
- Consideration of current and future school sites and needs regarding school-related trips.

Transportation strategies can include, but are not limited to:

- Promote ride sharing programs
- Encourage or use low or zero-emission vehicles
- Create car sharing programs
- Provide shuttle service to public transit
- Incorporate bicycle-friendly intersections into street design

Additional strategies include, but are not limited to:

- Pricing Strategies (can include Congestion Pricing, Road Tolling, HOT lanes and toll roads, Parking Pricing and Alternative Mode Programs)
- Transportation Planning and Investment Strategies in the Smart Mobility Framework

- Urban and suburban infill, clustered development, mixed land uses, New Urbanist design, transit-oriented development, and other "smart-growth" strategies: Strategies incorporating the "D factors" (See Professor Robert Cervero's research as noted in Cervero, R. and K. Kockelman (1997) "Travel Demand and the 3Ds: Density, Diversity, and Design," *Transportation Research D*, Vol. 2, pp. 199-219. Other resources used to define these factors include Fehr & Peers' *Accurate Trip Generation Estimates for Mixed-Use Projects,* and Cervero and Lee's *The Effect of Housing Near Transit Stations on Vehicle Trip Rates and Transit Trip Generation.)*
- Congestion Management improving traffic circulation to reduce vehicle idling (coordinate controlled intersections for traffic to pass more efficiently through congested areas)
- Transportation Demand Management

As regions explore various land use and transportation strategies to reduce greenhouse gas emissions in the Sustainable Communities Strategy, MPOs should consider identifying and to the extent possible, quantifying the co-benefits associated with greenhouse gas emissions reduction strategies throughout the RTP implementation processes. Co-benefits are positive externalities that result from reducing greenhouse gases such as increased mobility, reduced air and water pollution, economic opportunities, and healthier, more equitable and sustainable communities.

The strategy suggestions listed above, and in more detail in Appendix I are applicable to ~~both~~ MPOs ~~and RTPAs~~. Links to various Best Practices information are also available in Appendix I.

~~**Requirements (Shall)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Recommendations (Should)**~~
~~**Federal:** None~~
~~**State:** None~~

Best Practices: Available in Appendix I

6.2~~7~~8 Alternative Planning Strategy (APS) Overview

Pursuant to California Government Code Section 65080(b)(2)(H), if the SCS, prepared in compliance with 65080(b)(2)(B) or (C), is unable to reduce greenhouse gas emissions to achieve the greenhouse gas emission target established by the ARB, the MPO shall prepare an APS to the SCS showing how that greenhouse gas emissions target would be achieved through alternative development patterns, infrastructure, or additional transportation measures and policies. The APS shall be a separate document from the RTP. In preparing the APS, the MPO:

1. Shall identify the principal impediments to achieving the targets within the SCS
2. May include an alternative development pattern for the region pursuant to 65080 (b)(2)(B) to (F) inclusive,
3. Shall describe how the greenhouse gas emissions reduction targets would be achieved by the APS, and why the development pattern, measures, and policies in the APS are the most practicable choices for achievement of the greenhouse gas emission reduction targets,

4. An alternative development pattern set forth in the APS shall comply with Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal Regulations, except to the extent that compliance will prevent achievement of the greenhouse gas emission reduction targets approved by the ARB,
5. For purposes of the California Environmental Quality Act (CEQA), an APS shall not constitute a land use plan, policy or regulation, and the inconsistency of a project with an alternative planning strategy shall not be a consideration in determining whether a project may have an environmental effect.

For additional information on the Alternative Planning Strategy (APS) please refer to Appendix H.

~~6.29~~ Non-MPO Rural RTPA Addressing Greenhouse Gas Emissions

~~Rural transportation planning agencies have a unique set of challenges compared to urbanized areas to reduce regional transportation related greenhouse gas emissions. Lower land use densities, limited transit options, and higher VMT per household contribute to the challenges to reduce these emissions. More efficient vehicles and low-carbon fuels present the highest payoff for rural counties to reduce transportation related carbon dioxide emissions. Nonetheless rural RTPAs should strive to incorporate strategies to reduce their GHG emissions during their planning process.~~

~~RTPAs that are not located within a boundary of an MPO are not subject to the provisions of SB 375, or the resultant requirements to address regional GHG targets in their RTPs. This includes the requirement to prepare a sustainable communities strategy (SCS) to meet a regional GHG emissions reduction target.~~

~~Beginning in 2007, several MPOs received notification from the California Attorney General's Office stating that they should address the possible climate change impacts of any new transportation projects identified in the RTP's environmental document. This notification was based on new statutory requirements as a result of AB 32 – The California Global Warming Solutions Act of 2006. These climate change impacts are codified under the California Environmental Quality Act (Public Resources Code, Section 21000, et seq). The Attorney General's Office stated the RTP's environmental document should evaluate the global warming impacts of the projects and priorities in the RTP.~~

~~It is suggested that in preparing the environmental document for their RTP, RTPAs ensure that any GHG emissions during either construction or as a result of the project be addressed and mitigated, as appropriate.~~

~~The Rural Policy Research Institute prepared a brief paper titled: "Climate Change and Rural Counties in the U.S." dated August 2009. Although the paper does not specifically address transportation issues, it does help set the overall framework of rural GHG issues. The paper is located at the following link:~~

~~http://www.rupri.org/Forms/Climate_Change_Brief.pdf~~

~~Requirements (Shalls)~~
~~Federal:~~ ~~None~~
~~State:~~ ~~Public Resources Code, Section 21000, et seq.~~

~~**Recommendations (Shoulds)**~~
~~**Federal:** None~~
~~**State:** None~~

~~**Best Practices:** None~~

6.~~28~~30 Adaptation of the Regional Transportation System to Climate Change

Recent science suggests that further effects of climate change are inevitable despite planned and implemented mitigation efforts. There are a number of studies (Pacific Institute[1], UC Merced and RAND Corporation[2], Next10 and U.C. Berkeley[3]) that estimate the high costs associated with rising sea levels, changing precipitation, and wildfire damage resulting from changes in the climate.

A new focus on adaptation planning is rapidly becoming important for cities and counties across California. Because of its geographic diversity, California is extremely susceptible to a wide range of climate change effects – many of which we have already begun experiencing. Examples include; increase in temperatures, earlier snowpack melt, changed precipitation patterns, increased severity of wildfires, sea level rise, extreme weather events, and numerous changes and effects on biodiversity and habitats.

The impacts listed above may have negative impacts on the transportation system specifically including flooded airports, interstate highways and roads, landslides resulting in disrupted rail lines, heat waves causing roadways to buckle, and fire damaged watersheds that have resulted in mudslides. The degree of risk for the State's transportation infrastructure depends on regional and local characteristics including the natural and human built environment, as well as the location, types and functions of transportation facilities and assets.

In an effort to begin protecting these assets, Governor Schwarzenegger signed Executive Order (EO) S-13-08. This order provides direction on developing California's first statewide adaptation effort. It requires the California Natural Resources Agency (CRNA) to develop the State's first comprehensive Climate Adaptation Strategy (CAS) guide. The CAS was developed with the input of numerous stakeholders including state agencies and seven climate adaptation working groups. In 2013, CRNA released "Safeguarding California Plan" – an update to the 2009 CAS.

The CAS requests the National Academy of Sciences to establish an expert panel to report on sea level rise impacts on California every two years, and to inform state planning and development efforts in high climate change risk areas. The guide contains numerous adaptation strategies for sea level rise for new (or planned) projects and a report on existing infrastructure vulnerable to sea level rise. The strategies in the guide address water management, public health, agriculture, biodiversity and habitat, forestry, energy and transportation infrastructure.

Chapter 10 of the CAS contains the strategies for the State's transportation infrastructure. The transportation strategies address the need for significant changes in the planning, design, construction, operation and maintenance of California's infrastructure. The changes necessary to protect the State's transportation infrastructure will require collaboration between multiple state, regional and local agencies. Although the CAS focuses on state level efforts, regional planning agencies (MPO~~'~~s, ~~RTPA's~~) should also incorporate these practices in the implementation of transportation strategies in conjunction with Caltrans, to the extent that they are feasible. The CAS guide can be found at the link below.

The Safeguarding California Plan builds on the foundation of the CAS by identifying progress made on reducing emissions and addressing vulnerabilities, a review of new studies and policies, and specific actions needed to prepare for climate risks to the transportation sector. Some of these actions include research into new technology, climate science, and geophysics that could impact the transportation system, policies to improve planning and design for climate change adaptation, and an improved platform for sharing information.

http://www.climatechange.ca.gov/adaptation/

References:

1. http://www.pacinst.org/reports/sea_level_rise/
2. http://www.energy.ca.gov/2009publications/CEC-500-2009-048/CEC-500-2009-048-D.PDF
3. http://www.energy.ca.gov/2009publications/CEC-500-2009-014/CEC-500-2009-014-D.PDF

~~**Requirements (Shall)**~~
~~**Federal:** None~~
~~**State:** None~~

Recommendations (Should)
~~**Federal:** None~~
State: California Environmental Quality Act, Public Resources Code 21000, et seq.

Best Practices

Notwithstanding a lack of reliable information on the future impacts of sea level rise, precipitation changes, or extreme heat events, MPO~~'~~s ~~and RTPA's~~ should begin to address climate change in their long range transportation plans. There are numerous ways planning agencies can begin preparing for climate change adaptation on the transportation infrastructure including preliminary mapping of infrastructure that is vulnerable to changes in precipitation, heat, and sea level rise. It is also recommended that design and planning standards be re-evaluated to accommodate potential changes. It is important to ensure that planned infrastructure is engineered and built in locations that can withstand future climate change impacts.

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APPENDICES

A. Federal and State Transportation Planning Flowchart

B. State and Federal Programming Process Flowchart

C. Regional Transportation Plan Checklist (to be completed by MPO~~/RTPA~~ prior to submitting the draft RTP to Caltrans and CTC)

D. Title 23 CFR Part 450 Appendix A – Linking Transportation Planning and NEPA Processes

E. Integration of the Planning and NEPA Processes

F. MPO Air Quality Conformity Checklist

G. SB 375 and SB 575 Statutory Language

H. Alternative Planning Strategy (APS)

I. Land Use and Transportation Strategies to Reduce Regional GHG Emissions

J. RHNA and RTP Development Information

K. Glossary of Transportation Terms

L. AB 441 – Promoting Health and Health Equity in MPO RTPs

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Appendix A

Federal and State Transportation Planning Process Flowchart

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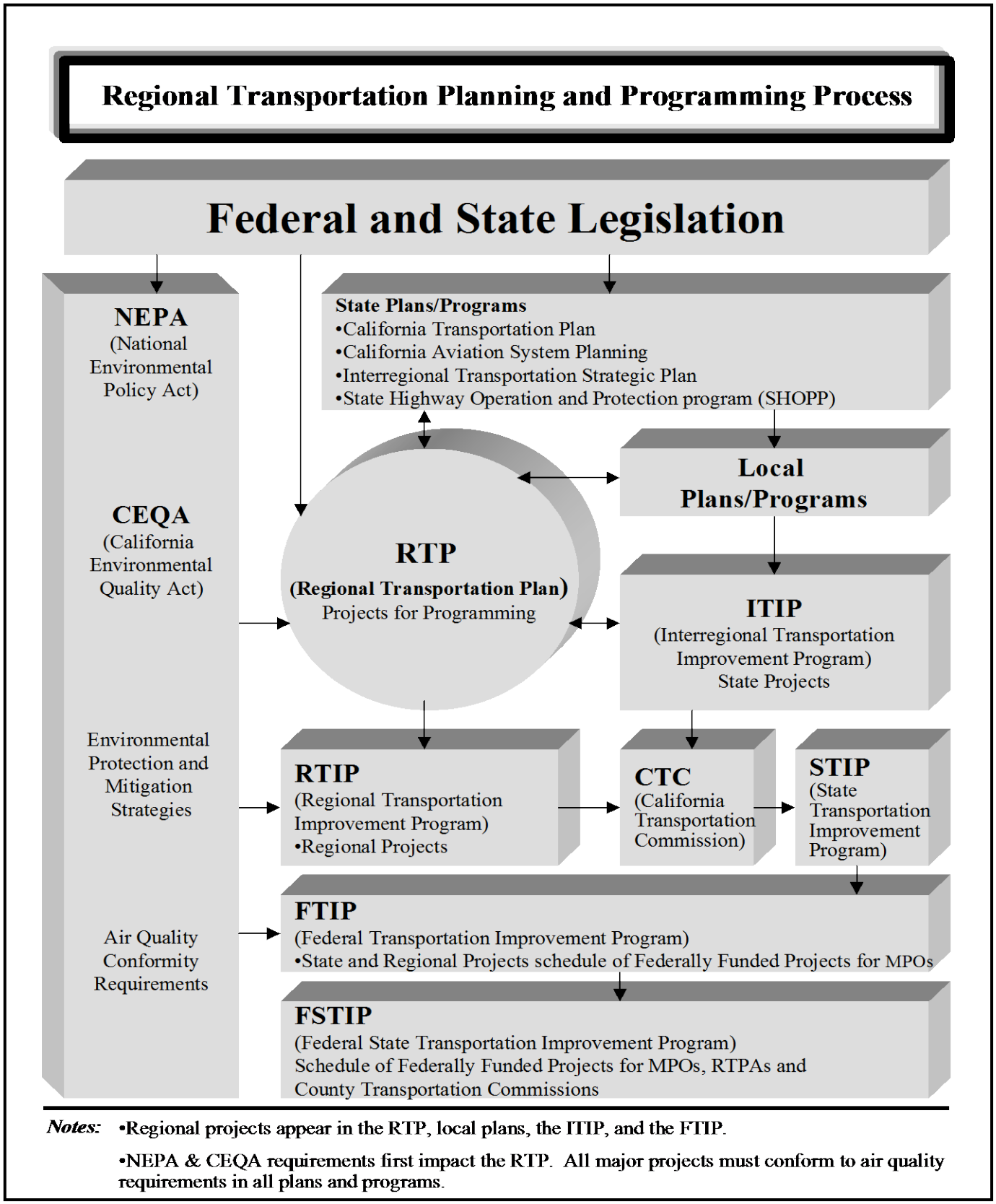
Regional Transportation Planning and Programming Process
Federal and State Legislation
NEPA
(National Environmental Policy Act)
CEQA
(California Environmental Quality Act)
Environmental Protection and Mitigation Strategies
Air Quality Conformity Requirements
State Plans/Programs
•California Transportation Plan
•California Aviation System Planning
•Interregional Transportation Strategic Plan
•State Highway Operation and Protection program (SHOPP)
Local Plans/Programs
RTP
(Regional Transportation Plan)
Projects for Programming
ITIP
(Interregional Transportation Improvement Program)
State Projects
RTIP
(Regional Transportation Improvement Program)
•Regional Projects
CTC
(California Transportation Commission)
STIP
(State Transportation Improvement Program)
FTIP
(Federal Transportation Improvement Program)
•State and Regional Projects schedule of Federally Funded Projects for MPOs
FSTIP
(Federal State Transportation Improvement Program)
Schedule of Federally Funded Projects for MPOs, RTPAs and County Transportation Commissions
Notes: •Regional projects appear in the RTP, local plans, the ITIP, and the FTIP.
•NEPA & CEQA requirements first impact the RTP. All major projects must conform to air quality requirements in all plans and programs.

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Appendix B

State and Federal Programming Process Flowchart

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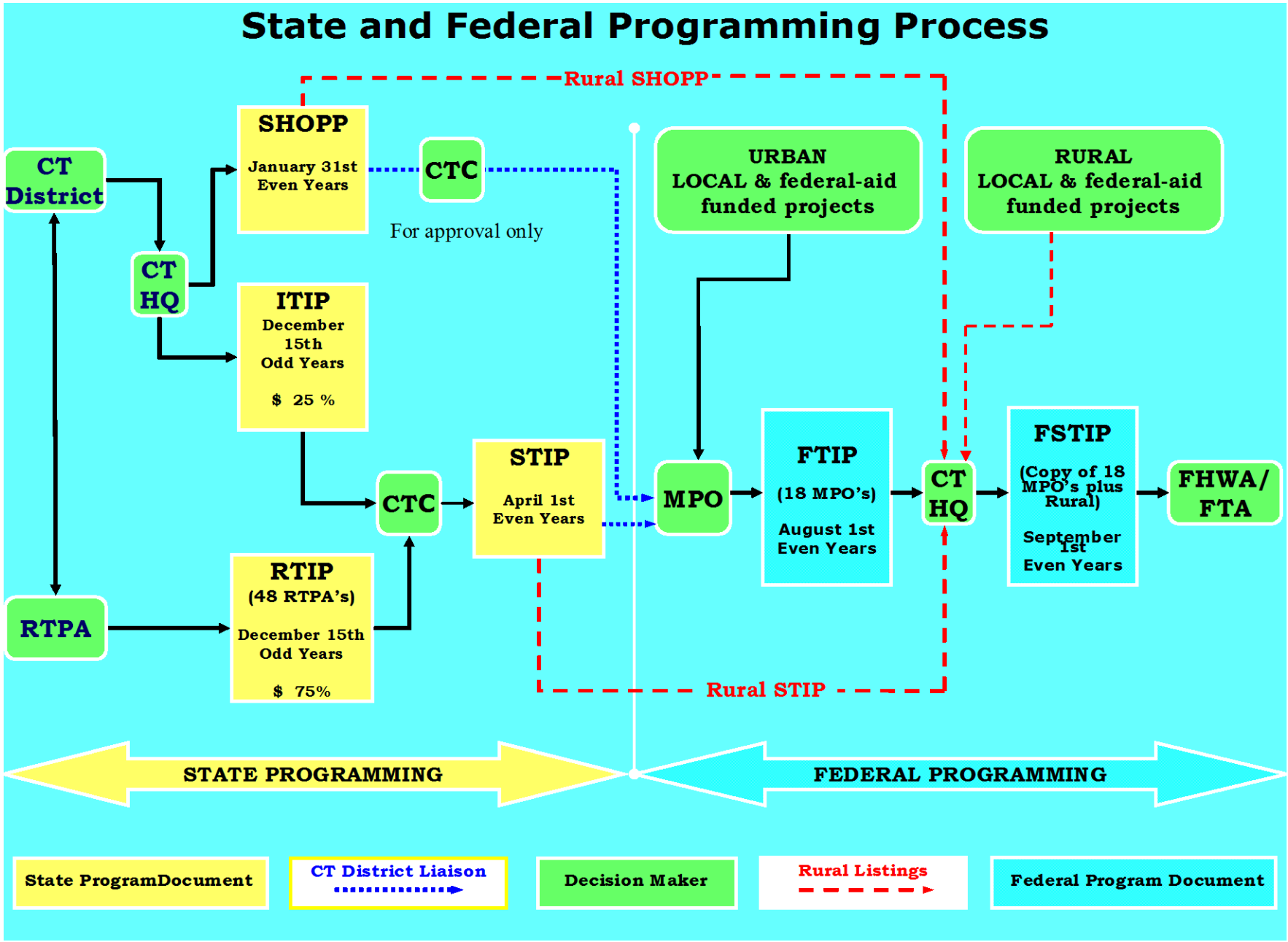
State and Federal Programming Process
Rural SHOPP
SHOPP
January 31st
Even Years
CTC
For approval only
CT
District
CT
HQ
ITIP
December
15th
Odd Years
$ 25 %
URBAN
LOCAL & federal-aid
funded projects
RURAL
LOCAL & federal-aid
funded projects
CTC
STIP
April 1st
Even Years
MPO
FTIP
(18 MPO's)
August 1st
Even Years
CT
HQ
FSTIP
(Copy of 18
MPO's plus
Rural)
September
1st
Even Years
FHWA/
FTA
RTPA
RTIP
(48 RTPA's)
December 15th
Odd Years
$ 75%
Rural STIP
STATE PROGRAMMING
FEDERAL PROGRAMMING
State ProgramDocument
CT District Liaison
Decision Maker
Rural Listings
Federal Program Document

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Appendix C

Regional Transportation Plan Checklist

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Regional Transportation Plan Checklist

(Revised February 2010)

(To be completed electronically in Microsoft Word format by the MPO/RTPA and submitted along with the draft RTP to Caltrans)

Name of MPO/RTPA: _____

Date Draft RTP Completed: _____

RTP Adoption Date: _____

What is the Certification Date of the Environmental Document (ED)? _____

Is the ED located in the RTP or is it a separate document? _____

By completing this checklist, the MPO/RTPA verifies the RTP addresses all of the following required information within the RTP.

Regional Transportation Plan Contents

General	Yes/No	Page #
1. Does the RTP address no less than a 20-year planning horizon? (23 CFR 450.322(a))		
2. Does the RTP include both long-range and short-range strategies/actions? (23 CFR part 450.322(b))		
3. Does the RTP address issues specified in the policy, action and financial elements identified in California Government Code Section 65080?		
4. Does the RTP address the 10 issues specified in the Sustainable Communities Strategy (SCS) component as identified in Government Code Sections 65080(b)(2)(B) and 65584.04(i)(1)? **(MPOs only)**		
a. Identify the general location of uses, residential densities, and building intensities within the region? **(MPOs only)**		
b. Identify areas within the region sufficient to house all the population of the region, including all economic segments of the population over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth? **(MPOs only)**		

	Yes/No	Page #
c. Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Government Code Section 65584? **(MPOs only)**		
d. Identify a transportation network to service the transportation needs of the region? **(MPOs only)**		
e. Gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Government Code Section 65080.01? **(MPOs only)**		
f. Consider the state housing goals specified in Sections 65580 and 65581? **(MPOs only)**		
g. Utilize the most recent planning assumptions, considering local general plans and other factors? **(MPOs only)**		
h. Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the ARB? **(MPOs only)**		
i. Provide consistency between the development pattern and allocation of housing units within the region (Government Code 65584.04(i)(1)? **(MPOs only)**		
j. Allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Section 7506)? **(MPOs only)**		
4. Does the RTP include Project Intent i.e. Plan Level Purpose and Need Statements?		
5. Does the RTP specify how travel demand modeling methodology, results and key assumptions were developed as part of the RTP process? (Government Code 14522.2) **(MPOs only)**		
<u>Consultation/Cooperation</u> 1. Does the RTP contain a public involvement program that meets the requirements of Title 23, CFR part 450.316(a)?		

		Yes/No	Page #
2.	Did the MPO/RTPA consult with the appropriate State and local representatives including representatives from environmental and economic communities; airport; transit; freight during the preparation of the RTP? (23CFR450.316(3)(b))		
3.	Did the MPO/RTPA who has federal lands within its jurisdictional boundary involve the federal land management agencies during the preparation of the RTP?		
4.	Where does the RTP specify that the appropriate State and local agencies responsible for land use, natural resources, environmental protection, conservation and historic preservation consulted? (23 CFR part 450.322(g))		
5.	Did the RTP include a comparison with the California State Wildlife Action Plan and (if available) inventories of natural and historic resources? (23 CFR part 450.322(g))		
6.	Did the MPO/RTPA who has a federally recognized Native American Tribal Government(s) and/or historical and sacred sites or subsistence resources of these Tribal Governments within its jurisdictional boundary address tribal concerns in the RTP and develop the RTP in consultation with the Tribal Government(s)? (Title 23 CFR part 450.316(c))		
7.	Does the RTP address how the public and various specified groups were given a reasonable opportunity to comment on the plan using the participation plan developed under 23 CFR part 450.316(a)? (23 CFR 450.316(i))		
8.	Does the RTP contain a discussion describing the private sector involvement efforts that were used during the development of the plan? (23 CFR part 450.316 (a))		
9.	Does the RTP contain a discussion describing the coordination efforts with regional air quality planning authorities? (23 CFR 450.316(a)(2)) **(MPO nonattainment and maintenance areas only)**		
10.	Is the RTP coordinated and consistent with the Public Transit-Human Services Transportation Plan?		
11.	Were the draft and adopted RTP posted on the Internet? (23 CFR part 450.322(j))		
12.	Did the RTP explain how consultation occurred with locally elected officials? (Government Code 65080(D)) **(MPOs only)**		
13.	Did the RTP outline the public participation process for the sustainable communities strategy? (Government Code 65080(E) **(MPOs only)**		

Modal Discussion

1.	Does the RTP discuss intermodal and connectivity issues?		

		Yes/No	Page #
2.	Does the RTP include a discussion of highways?		
3.	Does the RTP include a discussion of mass transportation?		
4.	Does the RTP include a discussion of the regional airport system?		
5.	Does the RTP include a discussion of regional pedestrian needs?		
6.	Does the RTP include a discussion of regional bicycle needs?		
7.	Does the RTP address the California Coastal Trail? (Government Code 65080.1) **(For MPOs and RTPAs located along the coast only)**		
8.	Does the RTP include a discussion of rail transportation?		
9.	Does the RTP include a discussion of maritime transportation (if appropriate)?		
10.	Does the RTP include a discussion of goods movement?		

Programming/Operations

1.	Is a congestion management process discussed in the RTP? (23 CFR part 450.450.320(b)) **(MPOs designated as TMAs only)**		
2.	Is the RTP consistent (to the maximum extent practicable) with the development of the regional ITS architecture?		
3.	Does the RTP identify the objective criteria used for measuring the performance of the transportation system?		
4.	Does the RTP contain a list of un-constrained projects?		

Financial

1.	Does the RTP include a financial plan that meets the requirements identified in 23 CFR part 450.322(f)(10)?		
2.	Does the RTP contain a consistency statement between the first 4 years of the fund estimate and the 4-year STIP fund estimate? (2006 STIP Guidelines, Section 19)		
3.	Do the projected revenues in the RTP reflect Fiscal Constraint? (23 CFR part 450.322(f)(10)(ii))		
4.	Does the RTP contain a list of financially constrained projects? Any regionally significant projects should be identified. (Government Code 65808(3)(A))		

	Yes/No	Page #
5. Do the cost estimates for implementing the projects identified in the RTP reflect "year of expenditure dollars" to reflect inflation rates? (23 CFR part 450.322(f)(10)(iv))		
6. After 12/11/07, does the RTP contain estimates of costs and revenue sources that are reasonably expected to be available to operate and maintain the freeways, highway and transit within the region? (23 CFR 450.322(f)(10)(i))		
7. Does the RTP contain a statement regarding consistency between the projects in the RTP and the ITIP? (2006 STIP Guidelines section 33)		
8. Does the RTP contain a statement regarding consistency between the projects in the RTP and the FTIP? (2006 STIP Guidelines section 19)		
9. Does the RTP address the specific financial strategies required to ensure the identified TCMs from the SIP can be implemented? (23 CFR part 450.322(f)(10)(vi) (**nonattainment and maintenance MPOs only**)		

Environmental

1. Did the MPO/RTPA prepare an EIR or a program EIR for the RTP in accordance with CEQA guidelines?		
2. Does the RTP contain a list of projects specifically identified as TCMs, if applicable?		
3. Does the RTP contain a discussion of SIP conformity, if applicable? **(MPOs only)**		
4. Does the RTP specify mitigation activities? (23 CFR part 450.322(f)(7))		
5. Where does the EIR address mitigation activities?		
6. Did the MPO/RTPA prepare a Negative Declaration or a Mitigated Negative Declaration for the RTP in accordance with CEQA guidelines?		
7. Does the RTP specify the TCMs to be implemented in the region? **(federal nonattainment and maintenance areas only)**		

I have reviewed the above information and certify that it is correct and complete.

_____ _____

(Must be signed by MPO/RTPA Executive Director or designated representative) Date

_____ _____

Print Name Title

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Appendix D

Title 23 CFR Part 450 Appendix A – Linking Transportation Planning and NEPA Processes

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Appendix A to Title 23 CFR Part 450--Linking the Transportation Planning and NEPA Processes

Background and Overview

This Appendix provides additional information to explain the linkage between the transportation planning and project development/National Environmental Policy Act (NEPA) processes. It is intended to be non-binding and should not be construed as a rule of general applicability.

For 40 years, the Congress has directed that Federally funded highway and transit projects must flow from metropolitan and Statewide transportation planning processes (pursuant to 23 U.S.C. 134-135 and 49 U.S.C. 5303-5306). Over the years, the Congress has refined and strengthened the transportation planning process as the foundation for project decisions, emphasizing public involvement, consideration of environmental and other factors, and a Federal role that oversees the transportation planning process but does not second-guess the content of transportation plans and programs.

Despite this statutory emphasis on transportation planning, the environmental analyses produced to meet the requirements of the NEPA of 1969 (42 U.S.C. 4231 et seq.) have often been conducted de novo, disconnected from the analyses used to develop long-range transportation plans, Statewide and metropolitan Transportation Improvement Programs (STIPs/TIPs), or planning-level corridor/subarea/feasibility studies. When the NEPA and transportation planning processes are not well coordinated, the NEPA process may lead to the development of information that is more appropriately developed in the planning process, resulting in duplication of work and delays in transportation improvements.

The purpose of this Appendix is to change this culture, by supporting congressional intent that Statewide and metropolitan transportation planning should be the foundation for highway and transit project decisions. This Appendix was crafted to recognize that transportation planning processes vary across the country. This document provides details on how information, analysis, and products from transportation planning can be incorporated into and relied upon in NEPA documents under existing laws, regardless of when the Notice of Intent has been published. This Appendix presents environmental review as a continuum of sequential study, refinement, and expansion performed in transportation planning and during project development/NEPA, with information developed and conclusions drawn in early stages utilized in subsequent (and more detailed) review stages.

The information below is intended for use by State departments of transportation (State DOTs), metropolitan planning organizations (MPOs), and public transportation operators to clarify the circumstances under which transportation planning level choices and analyses can be adopted or incorporated into the process required by NEPA. Additionally, the FHWA and the FTA will work with Federal environmental, regulatory, and resource agencies to incorporate the principles of this Appendix in their day-to-day NEPA policies and procedures related to their involvement in highway and transit projects.

This Appendix does not extend NEPA requirements to transportation plans and programs. The Transportation Efficiency Act for the 21st Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) specifically exempted transportation plans and programs from NEPA review. Therefore, initiating the NEPA process as part of, or concurrently with, a transportation planning study does not subject transportation plans and programs to NEPA.

Implementation of this Appendix by States, MPOs, and public transportation operators is voluntary. The degree to which studies, analyses, or conclusions from the transportation planning process can be incorporated into the project development/NEPA processes will depend upon how well they meet certain standards established by NEPA regulations and guidance. While some transportation planning processes already meet these standards, others will need some modification.

The remainder of this Appendix document utilizes a ``Question and Answer'' format, organized into three primary categories (``Procedural Issues,'' ``Substantive Issues,'' and ``Administrative Issues'').

I. Procedural Issues:

1. In what format should the transportation planning information be included?

To be included in the NEPA process, work from the transportation planning process must be documented in a form that can be appended to the NEPA document or incorporated by reference. Documents may be incorporated by reference if they are readily available so as to not impede agency or public review of the action. Any document incorporated by reference must be ``reasonably available for inspection by potentially interested persons within the time allowed for comment.'' Incorporated materials must be cited in the NEPA document and their contents briefly described, so that the reader understands why the document is cited and knows where to look for further information. To the extent possible, the documentation should be in a form such as official actions by the MPO, State DOT, or public transportation operator and/or correspondence within and among the organizations involved in the transportation planning process.

2. What is a reasonable level of detail for a planning product that is intended to be used in a NEPA document? How does this level of detail compare to what is considered a full NEPA analysis?

For purposes of transportation planning alone, a planning-level analysis does not need to rise to the level of detail required in the NEPA process. Rather, it needs to be accurate and up-to-date, and should adequately support recommended improvements in the Statewide or metropolitan long-range transportation plan.

The SAFETEA-LU requires transportation planning processes to focus on setting a context and following acceptable procedures. For example, the SAFETEA-LU requires a ``discussion of the types of potential environmental mitigation activities'' and potential areas for their implementation, rather than details on specific strategies. The SAFETEA-LU also emphasizes consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies.

However, the Environmental Assessment (EA) or Environmental Impact Statement (EIS) ultimately will be judged by the standards applicable under the NEPA regulations and guidance from the Council on Environmental Quality (CEQ). To the extent the information incorporated from the transportation planning process, standing alone, does not contain all of the information or analysis required by NEPA, then it will need to be supplemented by other information contained in the EIS or EA that would, in conjunction with the information from the plan, collectively meet the requirements of NEPA. The intent is not to require NEPA studies in the transportation planning process. As an option, the NEPA analyses prepared for project development can be integrated with transportation planning studies (see the response to Question 9 for additional information).

3. What type and extent of involvement from Federal, Tribal, State, and local environmental, regulatory, and resource agencies is needed in the transportation planning process in order for planning-level decisions to be more readily accepted in the NEPA process?

Sections 3005, 3006, and 6001 of the SAFETEA-LU established formal consultation requirements for MPOs and State DOTs to employ with environmental, regulatory, and resource agencies in the development of long-range transportation plans. For example, metropolitan transportation plans now ``shall include a discussion of the types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the [transportation] plan,'' and that these planning-level discussions ``shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies.'' In addition, MPOs ``shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of a long-range transportation plan,'' and that this consultation ``shall involve, as appropriate, comparison of transportation plans with State conservation plans or maps, if available, or comparison of transportation plans to inventories of natural or historic resources, if available.'' Similar SAFETEA-LU language addresses the development of the long-range Statewide transportation plan, with the addition of Tribal conservation plans or maps to this planning-level ``comparison.''

In addition, section 6002 of the SAFETEA-LU established several mechanisms for increased efficiency in environmental reviews for project decision-making. For example, the term ``lead agency'' collectively means the U. S. Department of Transportation and a State or local governmental entity serving as a joint lead agency for the NEPA process. In addition, the lead agency is responsible for inviting and designating ``participating agencies'' (i.e., other Federal or non-Federal agencies that may have an interest in the proposed project). Any Federal agency that is invited by the lead agency to participate in the environmental review process for a project shall be designated as a participating agency by the lead
agency unless the invited agency informs the lead agency, in writing, by the deadline specified in the invitation that the invited agency:

(a) Has no jurisdiction or authority with respect to the project; (b) has no expertise or information relevant to the project; and (c) does not intend to submit comments on the project.

Past successful examples of using transportation planning products in NEPA analysis are based on early and continuous involvement of environmental, regulatory, and resource agencies. Without this early coordination, environmental, regulatory, and resource agencies are more likely to expect decisions made or analyses conducted in the transportation planning process to be revisited during the NEPA process. Early participation in transportation planning provides environmental, regulatory, and resource agencies better insight into the needs and objectives of the locality. Additionally, early participation provides an important opportunity for environmental, regulatory, and resource agency concerns to be identified and addressed early in the process, such as those related to permit applications. Moreover, Federal, Tribal, State, and local environmental, regulatory, and resource agencies are able to share data on particular resources, which can play a critical role in determining the feasibility of a transportation solution with respect to environmental impacts. The use of other agency planning outputs can result in a transportation project that could support multiple goals (transportation, environmental, and community). Further, planning decisions by these other agencies may have impacts on long-range transportation plans and/or the STIP/TIP, thereby providing important input to the transportation planning process and advancing integrated decision-making.

4. What is the procedure for using decisions or analyses from the transportation planning process?

The lead agencies jointly decide, and must agree, on what processes and consultation techniques are used to determine the transportation planning products that will be incorporated into the NEPA process. At a minimum, a robust scoping/early coordination process (which explains to Federal and State environmental, regulatory, and resource agencies and the public the information and/or analyses utilized to develop the planning products, how the purpose and need was developed and refined, and how the design concept and scope were determined) should play a critical role in leading to informed decisions by the lead agencies on the suitability of the transportation planning information, analyses, documents, and decisions for use in the NEPA process. As part of a rigorous scoping/early coordination process, the FHWA and the FTA should ensure that the transportation planning results are appropriately documented, shared, and used.

5. To what extent can the FHWA/FTA provide up-front assurance that decisions and additional investments made in the transportation planning process will allow planning-level decisions and analyses to be used in the NEPA process?

There are no guarantees. However, the potential is greatly improved for transportation planning processes that address the ``3-C'' planning principles (comprehensive, cooperative, and continuous); incorporate the intent of NEPA through the consideration of natural, physical, and social effects; involve environmental, regulatory, and resource agencies; thoroughly document the transportation planning process information, analysis, and decision; and vet the planning results through the applicable public involvement processes.

6. What considerations will the FHWA/FTA take into account in their review of transportation planning products for acceptance in project development/NEPA?

The FHWA and the FTA will give deference to decisions resulting from the transportation planning process if the FHWA and FTA determine that the planning process is

consistent with the ``3-C'' planning principles and when the planning study process, alternatives considered, and resulting decisions have a rational basis that is thoroughly documented and vetted through the applicable public involvement processes. Moreover, any applicable program-specific requirements (e.g., those of the Congestion
Mitigation and Air Quality Improvement Program or the FTA's Capital Investment Grant program) also must be met.

The NEPA requires that the FHWA and the FTA be able to stand behind the overall soundness and credibility of analyses conducted and decisions made during the transportation planning process if they are incorporated into a NEPA document. For example, if systems-level or other broad objectives or choices from the transportation plan are incorporated into the purpose and need Statement for a NEPA document, the FHWA and the FTA should not revisit whether these are the best objectives or choices among other options. Rather, the FHWA and the FTA review would include making sure that objectives or choices derived from the transportation plan were: Based on transportation planning factors established by Federal law; reflect a credible and articulated planning rationale; founded on reliable data; and developed through transportation planning processes meeting FHWA and FTA statutory and regulatory requirements. In addition, the basis for the goals and choices must be documented and included in the NEPA document. The FHWA/FTA reviewers do not need to review whether assumptions or analytical methods used in the studies are the best available, but, instead, need to assure that such assumptions or analytical methods are reasonable, scientifically acceptable, and consistent with goals, objectives, and policies set forth in long-range transportation plans. This review would include determining whether: (a) Assumptions have a rational basis and are up-to-date and (b) data, analytical methods, and modeling techniques are reliable, defensible, reasonably current, and meet data quality requirements.

II. Substantive Issues

General Issues To Be Considered:

7. What should be considered in order to rely upon transportation planning studies in NEPA?

The following questions should be answered prior to accepting studies conducted during the transportation planning process for use in NEPA. While not a ``checklist,'' these questions are intended to
guide the practitioner's analysis of the planning products:

a. How much time has passed since the planning studies and corresponding decisions were made?

b. Were the future year policy assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process?

c. Is the information still relevant/valid?

d. What changes have occurred in the area since the study was completed?

e. Is the information in a format that can be appended to an environmental document or reformatted to do so?

f. Are the analyses in a planning-level report or document based on data, analytical methods, and modeling techniques that are reliable, defensible, and consistent with those used in other regional transportation studies and project development activities?

g. Were the FHWA and FTA, other agencies, and the public involved in the relevant planning analysis and the corresponding planning decisions?

h. Were the planning products available to other agencies and the public during NEPA scoping?

i. During NEPA scoping, was a clear connection between the decisions made in planning and those to be made during the project development stage explained to the public and others? What was the response?

j. Are natural resource and land use plans being informed by transportation planning products, and vice versa?

Purpose and Need:

8. How can transportation planning be used to shape a project's purpose and need in the NEPA process?

A sound transportation planning process is the primary source of the project purpose and need. Through transportation planning, State and local governments, with involvement of stakeholders and the public, establish a vision for the region's future transportation system, define transportation goals and objectives for realizing that vision, decide which needs to address, and determine the timeframe for addressing these issues. The transportation planning process also provides a potential forum to define a project's purpose and need by framing the scope of the problem to be addressed by a proposed project. This scope may be further refined during the transportation planning process as more information about the transportation need is collected and consultation with the public and other stakeholders clarifies other issues and goals for the region.

23 U.S.C. 139(f), as amended by the SAFETEA-LU Section 6002, provides additional focus regarding the definition of the purpose and need and objectives. For example, the lead agency, as early as practicable during the environmental review process, shall provide an opportunity for involvement by participating agencies and the public in defining the purpose and need for a project. The Statement of purpose and need shall include a clear Statement of the objectives that the proposed action is intended to achieve, which may include: (a) Achieving a transportation objective identified in an applicable Statewide or metropolitan transportation plan; (b) supporting land use, economic development, or growth objectives
established in applicable Federal, State, local, or Tribal plans; and (c) serving national defense, national security, or other national objectives, as established in Federal laws, plans, or policies.

The transportation planning process can be utilized to develop the purpose and need in the following ways:

(a) Goals and objectives from the transportation planning process may be part of the project's purpose and need Statement;

(b) A general travel corridor or general mode or modes (e.g., highway, transit, or a highway/transit combination) resulting from planning analyses may be part of the project's purpose and need Statement;

(c) If the financial plan for a metropolitan transportation plan indicates that funding for a specific project will require special funding sources (e.g., tolls or public-private financing), such information may be included in the purpose and need Statement; or

(d) The results of analyses from management systems (e.g., congestion, pavement, bridge, and/or safety) may shape the purpose and need Statement.

The use of these planning-level goals and choices must be appropriately explained during NEPA scoping and in the NEPA document. Consistent with NEPA, the purpose and need Statement should be a Statement of a transportation problem, not a specific solution. However, the purpose and need Statement should be specific enough to generate alternatives that may potentially yield real solutions to the problem at-hand. A purpose and need Statement that yields only one alternative may indicate a purpose and need that is too narrowly defined.

Short of a fully integrated transportation decision-making process, many State DOTs develop information for their purpose and need Statements when implementing interagency NEPA/Section 404 process merger agreements. These agreements may need to be expanded to include commitments to share and utilize transportation planning products when developing a project's purpose and need.

9. Under what conditions can the NEPA process be initiated in conjunction with transportation planning studies?

The NEPA process may be initiated in conjunction with transportation planning studies in a number of ways. A common method is the ``tiered EIS,'' in which the first-tier EIS evaluates general travel corridors, modes, and/or packages of projects at a planning level of detail, leading to the refinement of purpose and need and, ideally, selection of the design concept and scope for a project or series of projects. Subsequently, second-tier NEPA review(s) of the resulting projects would be performed in the usual way. The first-tier EIS uses the NEPA process as a tool to involve environmental, regulatory, and resource agencies and the public in the planning decisions, as well as to ensure the appropriate consideration of environmental factors in these planning decisions.

Corridor or subarea analyses/studies are another option when the long-range transportation plan leaves open the possibility of multiple approaches to fulfill its goals and objectives. In such cases, the formal NEPA process could be initiated through publication of a NOI in conjunction with a corridor or subarea planning study. Similarly, some public transportation operators developing major capital projects perform the mandatory planning Alternatives Analysis required for funding under FTA's Capital Investment Grant program [49 U.S.C. 5309(d) and (e)] within the NEPA process and combine the planning Alternatives Analysis with the draft EIS.

Alternatives:

10. In the context of this Appendix, what is the meaning of the term ``alternatives''?

This Appendix uses the term ``alternatives'' as specified in the NEPA regulations (40 CFR 1502.14), where it is defined in its broadest sense to include everything from major modal alternatives and location alternatives to minor design changes that would mitigate

adverse impacts. This Appendix does not use the term as it is used in many other contexts (e.g., ``prudent and feasible alternatives'' under Section 4(f) of the Department of Transportation Act, the ``Least Environmentally Damaging Practicable Alternative'' under the Clean Water Act, or the planning Alternatives Analysis in 49 U.S.C. 5309(d) and (e)).

11. Under what circumstances can alternatives be eliminated from detailed consideration during the NEPA process based on information and analysis from the transportation planning process?

There are two ways in which the transportation planning process can begin limiting the alternative solutions to be evaluated during the NEPA process: (a) Shaping the purpose and need for the project; or (b) evaluating alternatives during planning studies and eliminating some of the alternatives from detailed study in the NEPA process prior to its start. Each approach requires careful attention, and is summarized below.

(a) Shaping the Purpose and Need for the Project: The transportation planning process should shape the purpose and need and, thereby, the range of reasonable alternatives. With proper documentation and public involvement, a purpose and need derived from the planning process can legitimately narrow the alternatives analyzed in the NEPA process. See the response to Question 8 for further discussion on how the planning process can shape the purpose and need used in the NEPA process.

For example, the purpose and need may be shaped by the transportation planning process in a manner that consequently narrows the range of alternatives that must be considered in detail in the NEPA document when:

(1) The transportation planning process has selected a general travel corridor as best addressing identified transportation problems and the rationale for the determination in the planning document is reflected in the purpose and need Statement of the subsequent NEPA document;
(2) The transportation planning process has selected a general mode (e.g., highway, transit, or a highway/transit combination) that accomplishes its goals and objectives, and these documented determinations are reflected in the purpose and need Statement of the subsequent NEPA document; or
(3) The transportation planning process determines that the project needs to be funded by tolls or other non-traditional funding sources in order for the long-range transportation plan to be fiscally constrained or identifies goals and objectives that can only be met by toll roads or other non-traditional funding sources, and that determination of those goals and objectives is reflected in the purpose and need Statement of the subsequent NEPA document.

(b) Evaluating and Eliminating Alternatives During the Transportation Planning Process: The evaluation and elimination of alternatives during the transportation planning process can be incorporated by reference into a NEPA document under certain circumstances. In these cases, the planning study becomes part of the NEPA process and provides a basis for screening out alternatives. As with any part of the NEPA process, the analysis of alternatives to be incorporated from the process must have a rational basis that has been thoroughly documented (including documentation of the necessary and appropriate vetting through the applicable public involvement processes). This record should be made available for public review during the NEPA scoping process.

See responses to Questions 4, 5, 6, and 7 for additional elements to consider with respect to acceptance of planning products for NEPA documentation and the response to Question 12 on the information or analysis from the transportation planning process necessary for supporting the elimination of an alternative(s) from detailed consideration in the NEPA process.

For instance, under FTA's Capital Investment Grant program, the alternatives considered in the NEPA process may be narrowed in those instances that the planning Alternatives Analysis required by 49 U.S.C. 5309(e) is conducted as a planning study prior to the NEPA review. In fact, the FTA may be able to narrow the alternatives considered in detail in the NEPA document to the No-Build (No Action) alternative and the Locally Preferred Alternative. Alternatives must meet the following criteria if they are deemed sufficiently considered by a planning Alternatives Analysis under FTA's Capital Investment Grant program conducted prior to NEPA without a programmatic NEPA analysis and documentation:

During the planning Alternatives Analysis, all of the reasonable alternatives under consideration must be fully evaluated in terms of their transportation impacts; capital and operating costs; social, economic, and environmental impacts; and technical considerations;

There must be appropriate public involvement in the planning Alternatives Analysis;

The appropriate Federal, State, and local environmental, regulatory, and resource agencies must be engaged in the planning Alternatives Analysis;

The results of the planning Alternatives Analysis must be documented;

The NEPA scoping participants must agree on the alternatives that will be considered in the NEPA review; and

The subsequent NEPA document must include the evaluation of alternatives from the planning Alternatives Analysis.

The above criteria apply specifically to FTA's Capital Investment Grant process. However, for other transportation projects, if the planning process has included the analysis and stakeholder involvement that would be undertaken in a first tier NEPA process, then the alternatives screening conducted in the transportation planning process may be incorporated by reference, described, and relied upon in the project-level NEPA document. At that point, the project-level NEPA analysis can focus on the remaining alternatives.

12. What information or analysis from the transportation planning process is needed in an EA or EIS to support the elimination of an alternative(s) from detailed consideration?

The section of the EA or EIS that discusses alternatives considered but eliminated from detailed consideration should:

(a) Identify any alternatives eliminated during the transportation planning process (this could include broad categories of alternatives, as when a long-range transportation plan

selects a general travel corridor based on a corridor study, thereby eliminating all alternatives along other alignments);

(b) Briefly summarize the reasons for eliminating the alternative; and

(c) Include a summary of the analysis process that supports the elimination of alternatives (the summary should reference the relevant sections or pages of the analysis or study) and incorporate
it by reference or append it to the NEPA document.

Any analyses or studies used to eliminate alternatives from detailed consideration should be made available to the public and participating agencies during the NEPA scoping process and should be reasonably available during comment periods.

Alternatives passed over during the transportation planning process because they are infeasible or do not meet the NEPA ``purpose and need'' can be omitted from the detailed analysis of alternatives in the NEPA document, as long as the rationale for elimination is explained in the NEPA document. Alternatives that remain ``reasonable'' after the planning-level analysis must be addressed in the EIS, even when they are not the preferred alternative. When the proposed action evaluated in an EA involves unresolved conflicts concerning alternative uses of available resources, NEPA requires that appropriate alternatives be studied, developed, and described.

Affected Environment and Environmental Consequences:

13. What types of planning products provide analysis of the affected environment and environmental consequences that are useful in a project-level NEPA analysis and document?

The following planning products are valuable inputs to the discussion of the affected environment and environmental consequences (both its current State and future State in the absence of the proposed action) in the project-level NEPA analysis and document:

Regional development and growth analyses;

Local land use, growth management, or development plans; and

Population and employment projections.

The following are types of information, analysis, and other products from the transportation planning process that can be used in the discussion of the affected environment and environmental consequences in an EA or EIS:

(a) Geographic information system (GIS) overlays showing the past, current, or predicted future conditions of the natural and built environments;

(b) Environmental scans that identify environmental resources and environmentally sensitive areas;

(c) Descriptions of airsheds and watersheds;

(d) Demographic trends and forecasts;

(e) Projections of future land use, natural resource conservation areas, and development; and

(f) The outputs of natural resource planning efforts, such as wildlife conservation plans, watershed plans, special area management plans, and multiple species habitat conservation plans.

However, in most cases, the assessment of the affected environment and environmental consequences conducted during the transportation planning process will not be detailed or current enough to meet NEPA standards and, thus, the inventory and evaluation of affected resources and the analysis of consequences of the alternatives will need to be supplemented with more refined analysis and possibly site-specific details during the NEPA process.

14. What information from the transportation planning process is useful in describing a baseline for the NEPA analysis of indirect and cumulative impacts?

Because the nature of the transportation planning process is to look broadly at future land use, development, population increases, and other growth factors, the planning analysis can provide the basis for the assessment of indirect and cumulative impacts required under NEPA. The consideration in the transportation planning process of development, growth, and consistency with local land use, growth management, or development plans, as well as population and employment projections, provides an overview of the multitude of factors in an area that are creating pressures not only on the transportation system, but on the natural ecosystem and important environmental and community resources. An analysis of all reasonably foreseeable actions in the area also should be a part of the transportation planning process. This planning-level information should be captured and utilized in the analysis of indirect and cumulative impacts during the NEPA process.

To be used in the analysis of indirect and cumulative impacts, such information should:

(a) Be sufficiently detailed that differences in consequences of alternatives can be readily identified;
(b) Be based on current data (e.g., data from the most recent Census) or be updated by additional information;
(c) Be based on reasonable assumptions that are clearly Stated; and/or
(d) Rely on analytical methods and modeling techniques that are reliable, defensible, and reasonably current.

Environmental Mitigation:

15**.** How can planning-level efforts best support advance mitigation, mitigation banking, and priorities for environmental mitigation investments?

A lesson learned from efforts to establish mitigation banks and advance mitigation agreements and alternative mitigation options is the importance of beginning interagency discussions during the transportation planning process. Development pressures, habitat alteration, complicated real estate transactions, and competition for potential mitigation sites by public and private project proponents can encumber the already difficult task of mitigating for ``like'' value and function and reinforce the need to examine mitigation strategies as early as possible.

Robust use of remote sensing, GIS, and decision support systems for evaluating conservation strategies are all contributing to the advancement of natural resource and environmental planning. The outputs from environmental planning can now better inform transportation planning processes, including the development of mitigation strategies, so that transportation and conservation goals can be optimally met. For example, long-range transportation plans can be screened to assess the effect of general travel corridors or density, on the viability of sensitive plant and animal species or habitats.

This type of screening provides a basis for early collaboration among transportation and environmental staffs, the public, and regulatory agencies to explore areas where impacts must be avoided and identify areas for mitigation investments. This can lead to mitigation strategies that are both more economical and more effective from an environmental stewardship perspective than traditional project-specific mitigation measures.

III. Administrative Issues:

16. Are Federal funds eligible to pay for these additional, or more in depth, environmental studies in transportation planning?

Yes. For example, the following FHWA and FTA funds may be utilized for conducting environmental studies and analyses within transportation planning: FHWA planning and research funds, as defined under 23 CFR Part 420 (e.g., Metropolitan Planning (PL), Statewide Planning and Research (SPR), National Highway System (NHS), Surface Transportation Program (STP), and Equity Bonus); and FTA planning and research funds (49 U.S.C. 5303 and 49 U.S.C. 5313(b)), urban formula funds (49 U.S.C. 5307), and (in limited circumstances) transit capital investment funds (49 U.S.C. 5309).

The eligible transportation planning-related uses of these funds may include: (a) Conducting feasibility or subarea/corridor needs studies and (b) developing system-wide environmental information/inventories (e.g., wetland banking inventories or standards to identify historically significant sites). Particularly in the case of PL and SPR funds, the proposed expenditure must be closely related to the development of transportation plans and programs under 23 U.S.C. 134-135 and 49 U.S.C. 5303-5306.

For FHWA funding programs, once a general travel corridor or specific project has progressed to a point in the preliminary engineering/NEPA phase that clearly extends beyond transportation planning, additional in-depth environmental studies must be funded through the program category for which the ultimate project qualifies (e.g., NHS, STP, Interstate Maintenance, and/or Bridge), rather than PL or SPR funds.

Another source of funding is FHWA's Transportation Enhancement program, which may be used for activities such as: conducting archeological planning and research; developing inventories such as those for historic bridges and highways, and other surface transportation-related structures; conducting studies to determine the extent of water pollution due to highway runoff; and conducting studies to reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.

The FHWA and the FTA encourage State DOTs, MPOs, and public transportation operators to seek partners for some of these studies from environmental, regulatory, and resource agencies, non-government organizations, and other government and private sector entities with similar data needs, or environmental interests. In some cases, these partners may contribute data and expertise to the studies, as well as funding.

17. What staffing or organizational arrangements may be helpful in allowing planning products to be accepted in the NEPA process?

Certain organizational and staffing arrangements may support a more integrated approach to the planning/NEPA decision-making continuum. In many cases, planning

organizations do not have environmental expertise on staff or readily accessible. Likewise, the review and regulatory responsibilities of many environmental, regulatory, and resource agencies make involvement in the transportation planning process a challenge for staff resources.

These challenges may be partially met by improved use of the outputs of each agency's planning resources and by augmenting their capabilities through greater use of GIS and remote sensing technologies (see http://www.gis.fhwa.dot.gov/ for additional information on the use of GIS). Sharing databases and the planning products of local land use decision-makers and State and Federal environmental, regulatory, and resource agencies also provide efficiencies in acquiring and sharing the data and information needed for both transportation planning and NEPA work.

Additional opportunities such as shared staff, training across disciplines, and (in some cases) reorganizing to eliminate structural divisions between planning and NEPA practitioners may also need to be considered in order to better integrate NEPA considerations into transportation planning studies. The answers to the following two questions also contain useful information on
training and staffing opportunities.

18. How have environmental, regulatory, and resource agency liaisons (Federally- and State DOT-funded positions) and partnership agreements been used to provide the expertise and interagency participation needed to enhance the consideration of environmental factors in the planning process?

For several years, States have utilized Federal and State transportation funds to support focused and accelerated project review by a variety of local, State, Tribal, and Federal agencies. While Section 1309(e) of the TEA-21 and its successor in SAFETEA-LU section 6002 speak specifically to transportation project streamlining, there are other authorities that have been used to fund positions, such as the Intergovernmental Cooperation Act (31 U.S.C. 6505). In addition, long-term, on-call consultant contracts can provide backfill support for staff that are detailed to other parts of an agency for temporary assignments. At last count (as of 2003), 246 positions were being funded. Additional information on interagency funding agreements is available at: http://environment.fhwa.dot.gov/strmlng/igdocs/index.htm.

Moreover, every State has advanced a variety of stewardship and streamlining initiatives that necessitate early involvement of environmental, regulatory, and resource agencies in the project development process. Such process improvements have: addressed the exchange of data to support avoidance and impact analysis; established formal and informal consultation and review schedules; advanced mitigation strategies; and resulted in a variety of programmatic reviews. Interagency agreements and work plans have evolved to describe performance objectives, as well as specific roles and responsibilities related to new streamlining initiatives. Some States have improved collaboration and efficiency by co-locating environmental, regulatory, and resource and transportation agency staff.

19. What training opportunities are available to MPOs, State DOTs, public transportation operators and environmental, regulatory, and resource agencies to assist in their understanding of the transportation planning and NEPA processes?

Both the FHWA and the FTA offer a variety of transportation planning, public involvement, and NEPA courses through the National Highway Institute and/or the National Transit Institute. Of particular note is the Linking Planning and NEPA Workshop, which provides a forum and facilitated group discussion among and between State DOT; MPO; Federal, Tribal, and State environmental, regulatory, and resource agencies; and FHWA/FTA representatives (at both the executive and program manager levels) to develop a State-specific action plan that will provide for strengthened linkages between the transportation planning and NEPA processes.

Moreover, the U.S. Fish and Wildlife Service offers Green Infrastructure Workshops that are focused on integrating planning for natural resources (``green infrastructure'') with the development, economic, and other infrastructure needs of society (``gray infrastructure'').

Robust planning and multi-issue environmental screening requires input from a wide variety of disciplines, including information technology; transportation planning; the NEPA process; and regulatory, permitting, and environmental specialty areas (e.g., noise, air quality, and biology). Senior managers at transportation and partner agencies can arrange a variety of individual training programs to support learning curves and skill development that contribute to a strengthened link of the transportation planning and NEPA processes. Formal and informal mentoring on an intra-agency basis can be arranged. Employee exchanges within and between agencies can be periodically scheduled, and persons involved with professional leadership programs can seek temporary assignments with partner agencies.

IV. Additional Information on this Topic

Valuable sources of information are FHWA's environment website(http://www.fhwa.dot.gov/environment/index.htm) and FTA's environmental streamlining website (http://www.environment.fta.dot.gov). Another source of information and case studies is NCHRP Report 8-38 (Consideration of Environmental Factors in Transportation Systems Planning), which is available at http://www4.trb.org/trb/crp.nsf/All+Projects/NCHRP+8-38. In addition, AASHTO's Center for Environmental Excellence website is continuously updated with news and links to information of interest to transportation and environmental professionals (www.transportation.environment.org).

Appendix E

Integration of the Planning and NEPA Processes

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Date:	February 22, 2005
Subject:	Integration of Planning and NEPA Processes
In Reply Refer To:	HCC-30
From:	D.J. Gribbin /s/ Chief Counsel, Federal Highway Administration Judith S. Kaleta /s/ Acting Chief Counsel, Federal Transit Administration
To:	Cindy Burbank, Associate Administrator Office of Planning, Environment and Realty, FHWA David A. Vozzolo, Deputy Associate Administrator Office of Planning and Environment, FTA

I. Issue

You have asked for guidance regarding the extent to which the results of the transportation planning process can be used in and relied upon in the NEPA process.

In response to your request, this memorandum outlines the current law; describes the transportation planning products that can be used in the NEPA process and under what conditions; and explains the roles of Federal agencies and the public in reviewing transportation planning products used in NEPA analyses and documents.

II. Background

The transportation planning process required by 23 U.S.C. 134 and 135 and 49 U.S.C. 5303-5306 sets the stage for future development of transportation projects. As part of the transportation planning process, States and local metropolitan planning organizations (MPOs) must develop long-range transportation plans to address projected transportation needs. In addition, they must create transportation improvement programs (TIPs or STIPs), which identify a list of priority projects to be carried out in the next three years to implement the plan. To receive Federal funding, transportation projects must come from a TIP or STIP. As a result, much of the data and decision making undertaken by state and local officials during the planning process carry forward into the project development activities that follow the TIP or STIP. This means that the planning process and the environmental assessment required during project development by the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4231 *et seq.*) should work in tandem, with the results of the transportation planning process feeding into the NEPA process. Congress has put great emphasis on the transportation planning process for shaping transportation decisions, and has retained and refined that emphasis in surface transportation law over decades.

In practice, though, the environmental analyses produced during the NEPA process are sometimes disconnected from the analyses used to prepare transportation plans, transportation improvement programs, and supporting corridor or subarea studies. Analyses and decisions occurring during transportation planning can be ignored or

redone in the NEPA process, resulting in a duplication of work and delays in implementation of transportation projects. The sharp separation between the work done during the transportation planning process and the NEPA analysis and documentation process is not necessary. In fact, current law provides authority for and even encourages the integration of the information and products developed in highway and transit planning process into the NEPA process. This memorandum provides guidance on how this information and these products can be incorporated into and relied upon in NEPA analyses and documents under existing laws.

III. Legal Analysis of Current Law on Integrating Planning and NEPA

The transportation planning process is a detailed, Congressionally mandated procedure for developing long-range transportation plans and shorter-range transportation improvement programs. These procedures were initially enacted in the 1960s and were codified in Title 23 and Title 49 of the U.S. Code. See 23 U.S.C. 134 and 135 and 49 U.S.C. 5303-5306. In 1991, the Intermodal Surface Transportation Efficiency Act of 1991 substantially expanded the planning provisions. They have been subsequently revisited and refined by Congress in various transportation bills, but the basic framework has remained intact. The procedures identify the State and local agencies with primary responsibility for transportation planning. They also identify agencies and other interested parties who should be given an opportunity to participate in the transportation planning process and describe their appropriate level of involvement. The statute spells out the planning factors that must be considered, including, among other factors, the protection and enhancement of the environment. 23 U.S.C. 134(f) and 135(c).1 The transportation planning process undertaken by States and MPOs is periodically reviewed and, if found to be adequate, certified by FHWA and FTA. The Federal government does not approve the transportation plans developed by State or local officials, and although FTA and FHWA jointly approve the Statewide TIP such an approval does not constitute a Federal action subject to review under NEPA.2 This is the process that Congress constructed to shape transportation decisions for Federally funded projects.

In order to be eligible for Federal funding, projects must come from a plan created by this process. Federal action subject to NEPA is needed to approve these Federal aid projects. Because of the continuity between the planning and project development processes, the NEPA analysis for a transportation project needs to be reviewed in the context of this transportation planning process.

NEPA and the government-wide regulations that carry out NEPA (40 C.F.R. Parts 1500 *et seq.*) clearly contemplate the integration of the NEPA process with planning processes. Specifically, Section 102(2)(A) of NEPA direct all Federal agencies to "utilize a systemic, interdisciplinary approach which will insure the integrated use of natural and social sciences and the environmental design arts in *planning* and decision making. [Emphasis added] The regulations issued by the President's Council on Environmental Quality (CEQ) amplify the statutory directive:

- 40 C.F.R. 1501.1(a) requires decision makers to "integrate[e] the NEPA process *into early planning* to ensure appropriate consideration of NEPA's policies and to eliminate delay;

- 40 C.F.R. 1501.1(b) emphasizes the need for "cooperative consultation among agencies *before the environmental impact statement is prepared*, rather than "submission of adversary comments on a completed document;
- 40 C.F.R. 1501.1(d) emphasizes the importance of "[I]identifying at an early stage the significant environmental issues deserving of study, by de-emphasizing "insignificant issues and "narrowing the scope of the environmental impact statement accordingly;
- 40 C.F.R. 1501.2 requires that Federal agencies "integrate the NEPA process with *other planning at the earliest possible time* to ensure that planning and [agency] decisions reflect environmental values. . .

Likewise, the NEPA regulations adopted by the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) emphasize the tie between NEPA and transportation planning:

- 23 C.F.R. 771.105(a) provides that "To the fullest extent possible, all environmental investigations, reviews and consultations be coordinated as a single process. . . and
- 23 C.F.R. 771.105(b) directs that "Alternative courses of action be evaluated and decisions be made in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of the social, economic and environmental impacts of the proposed transportation improvement; and of national, State and local environmental protection goals.

Thus, the organic statute, the government-wide NEPA regulations, and the specific FHWA and FTA regulations all strongly support the integration of the NEPA process with the transportation planning process.

Case law on the issue of the use of transportation planning studies and decisions in the NEPA process is not extensive. However, to the extent they exist, court decisions have consistently supported the reliance in the NEPA process on work done in the planning process. For example, in *North Buckhead Civic Association v. Skinner*, 903 F. 2d 1533 (11th Cir. 1990), the Plaintiffs challenged the purpose and need articulated in the EIS for a multi-lane limited access highway connecting two existing highways. The purpose and need was derived from a series of planning studies conducted by the Atlanta Regional Commission. Plaintiffs argued that the purpose and need was crafted in a way that the proposed highway was "conclusively presumed to be required and a rail alternative perfunctorily dismissed for its failure to fully satisfy the objectives of the project. The Court of Appeals disagreed with the Plaintiffs, stating that their objections reflected "a fundamental misapprehension of the role of federal and state agencies in the community planning process established by the Federal-Aid Highway Act. The Court went on to explain that the Federal-Aid Highway Act contemplated "a relationship of cooperation between federal and local authorities; each governmental entity plays a specific role in the development and execution of a local transportation project. The Court emphasized that federal agencies did not have responsibility for long range local planning, and found that the "federal, state and local officials complied with federally mandated regional planning procedures in developing the need and purpose section of the EIS. 903 F.3d at 1541-42. Although the Court in *Buckhead* acknowledged the validity of a purpose and need based on the results of the planning study, it did not in any way scale back the holdings of other cases relating to purpose and need which caution agencies not to write

purpose and need statements so narrowly as to "define competing 'reasonable alternatives' out of consideration (and even out of existence). *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664 (7th Cir. 1997). (In this case, the Army Corps of Engineers failed to question city's insistence on one approach for supplying water and gave no independent thought to the feasibility of alternatives, both single source and separate source supply options. On this basis, the EIS was found to be inadequate.)

In *Carmel-by-the-Sea v. U.S. DOT*, 123 F.3d 1142 (9th Cir. 1997), the Plaintiffs challenged the sufficiency of an EIS for failing to adequately consider the proposed project's growth-inducing effects. The Ninth Circuit disagreed, finding that the EIS satisfied this requirement by referencing several local planning documents that specifically included construction of the highway in their growth plans and which discussed overall growth targets and limits. In addition, the Court found that achieving "Level of Service C, an objective derived from the local congestion management plan, was an appropriate part of the purpose and need statement (although ultimately the EIS was found inadequate on cumulative impact grounds). Similarly, in *Laguna Greenbelt, Inc. v. U.S. DOT*, 42 F.3d 517 (9th Cir. 1994), the court held that the absence of a more thorough discussion in an EIS of induced growth, an issue that was sufficiently analyzed in referenced state materials, does not violate NEPA. However, regardless of the source, the analysis of induced growth must be in sufficient detail and must provide an analytical basis for its assumptions in order to be adequate under NEPA. See *Senville v. Peters*, 327 F.Supp.2d 335, 349 (Vt. 2004) (In this case, the District Court found an FEIS, before it was supplemented by FHWA, to be inadequate because it contained only a "sketchy discussion of induced growth and failed to support its assumptions with any analysis.)

In *Utahns for Better Transportation v. U.S. DOT*, 305 F.3d 1152 (10th Cir. 2002), *as modified on rehearing*, 319 F.3rd 1207 (10th Cir. 2003), Plaintiffs contended that the FEIS was inadequate because it failed to consider reducing travel demand through alternative land use scenarios in combination with mass transit. Noting that "reasonable alternatives must be non-speculative, the Tenth Circuit found that Plaintiffs had not demonstrated a deficiency in the FEIS on this basis (although it was ultimately found inadequate on other grounds). The Court stated that "Land use is a local and regional matter, and that, in this case, the corridor at issue would involve the jurisdiction of several local and regional governmental entities whose cooperation would be necessary to make an alternative land use scenario a reality. The fact that these entities had clearly declined to alter their land use plans in such a way was justification for not considering this alternative. 305 F.3d at 1172. 3

In *Sierra Club v. U.S. Department of Transportation*, 310 F.Supp.2d 1168 (D. Nevada 2004), Plaintiffs made several challenges to the EIS for a proposed highway project. One of these challenges alleged that FHWA relied on understated population and traffic forecasts. However, the Nevada District Court found that FHWA's reliance on the forecasts and modeling efforts of the designated metropolitan planning organization responsible for developing transportation plans and programs for the area was reasonable. In addition, Plaintiffs argued that the EIS had improperly rejected a fixed guideway as a reasonable alternative under NEPA. The Court disagreed, finding that FHWA reasonably relied on a "major investment study4 conducted as part of its planning process to establish that such an alternative (1) would not meet the project's purpose and need, even when considered as part of a transportation strategy, (2) was too costly

and (3) depended on connections to other portions of such a system for which construction was uncertain.5

As demonstrated by these cases, Courts have sanctioned the use of information from the planning process in a NEPA analysis and document. This is consistent with the opening language in NEPA advocating the integration of environmental considerations in both planning and decision-making. Consequently, products from the transportation planning process can be used in the NEPA analysis and documentation prepared for a transportation project.

IV. Legal Guidance on How Products from the Planning Process Can Be Used In the NEPA Process

For studies, analyses or conclusions from the transportation planning process to be used in the NEPA process, they must meet certain standards established by NEPA. This is because the information and products coming from the planning process must be sufficiently comprehensive that the Federal government may reasonably rely upon them in its NEPA analysis and documentation. Transportation planning processes vary greatly from locality to locality. Some transportation planning processes will already meet these standards, while others might need some modification to do so. Below is a discussion of where products from the transportation planning process might be incorporated into a NEPA analysis and documentation (purpose and need, alternatives, affected environment, and, to a more limited extent, environmental consequences in terms of land use, indirect and cumulative impacts, etc.), along with the NEPA standards they must first meet.

In addition to what is discussed below, these planning products must come from a transportation planning process that complied with current transportation planning requirements (e.g., provided an opportunity for public involvement and considered relevant planning factors). Interested State, local, tribal and Federal agencies should be included in the transportation planning processes, and must be given a reasonable opportunity to comment upon the long range transportation plan and transportation improvement program. Finally, any work from the planning process must have been documented and available for public review during the planning process. Such documentation should be in a form that can easily be appended to the NEPA document or incorporated by reference.6

Purpose and Need

The "purpose and need statement in a NEPA document is where the planning process and the NEPA process most clearly intersect. A sound planning process is a primary source of the project purpose and need. It is through the planning process that state and local governments determine what the transportation needs of an area are, which of transportation needs they wish to address, and in what time frame they wish to address them. Indeed, that is what the law requires from the planning process and actually prevents projects that do not come from the planning process from going forward.

The purpose and need statement, at a minimum, is a statement of the transportation problem to be solved by the proposed project. It is often presented in two parts: broad goals and objectives, and a description of the transportation conditions (congestion,

safety, etc.) underlying the problem. The long-range transportation plan also includes goals and objectives similar to "purpose and need but on a broader scale, since it typically covers a wider area and spans at least twenty years. These goals and objectives are often identified through extensive public outreach, sometimes called "visioning or "alternative futures exercises. The purpose and need statement for a transportation project should be consistent with and based on the goals and objectives developed during the planning process.

Getting input from Federal agencies as transportation goals and objectives are developed during the planning process is advisable and would be consistent with the cooperative relationship envisioned by statute and reinforced by courts. Such participation would give Federal agencies a better insight into the needs and objectives of the locality and would also provide an important opportunity for Federal concerns to be identified and addressed early in the process. These concerns could include issues that might be raised by Federal agencies in considering permit applications for projects designed to implement the transportation plan. However, the responsibility for local planning lies with the metropolitan planning organization or the State, not the Federal government.

In many cases, the goals and objectives in the transportation plan are supported by a needs assessment and problem statement describing current transportation problems to be addressed. Although the goals and objectives in the long-range transportation plan will be broader than what is appropriate for a specific project, they can be the foundation for the purpose and need to be used in a NEPA document. For example, they can be used to generate corridor-level purpose and need statements, during planning, for use in NEPA documents. The challenge is to ensure what comes from the long-range transportation plan is not so general as to generate a range of alternatives that are not responsive to the problem to be solved.

NEPA calls for a purpose and need statement to briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action. A purpose and need statement can be derived from the transportation planning process. The purpose and need statement:

- Should be a statement of the transportation problem (not a statement of a solution);
- Should be based on articulated planning factors and developed through a certified planning process;
- Should be specific enough so that the range of alternatives developed will offer real potential for solutions to the transportation problem;
- Must not be so specific as to "reverse engineer a solution; and
- May reflect other priorities and limitations in the area, such as environmental resources, growth management, land use planning, and economic development.

Alternatives

Under NEPA, an EIS must rigorously explore and objectively evaluate all reasonable alternatives, and briefly explain the rationale for eliminating any alternatives from detailed study.7 "Reasonable alternatives are described in Council on Environmental Quality (CEQ) guidance as including "those that are practical or feasible from the

technical and economic standpoint and using common sense. *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, Question #2a (March 23, 1981). An alternative is not "reasonable if it does not satisfy the purpose and need,8 but it may be reasonable even if it is outside the jurisdiction of the proposing agency to implement.

The transportation planning process frequently takes steps to refine the purpose and need statement that results in narrowing or screening the range of alternatives. Regional planning considerations may be the basis for refining the purpose and need statement, which might then have the effect of eliminating some alternatives from detailed consideration. For example, network connectivity across a geographic barrier such as a river may dictate a particular transportation mode or a general alignment. The plan may also identify where a locality wants housing, commercial development, agriculture, etc.—all of which might drive the need for transportation improvements in particular corridors.

When a long- range transportation plan leaves open the possibility of multiple approaches to fulfill its goals and objectives, a subarea or corridor study could be conducted to "zoom in on a particular area. This study would evaluate alternative investment strategies, engineering constraints, fiscal constraints, and environmental considerations in this area, and could narrow the range of possible alternatives to those that will meet the goals and objectives of the broader long-range transportation plan in that particular subarea or corridor. At the conclusion of such a study, the remaining alternatives might simply consist of a single corridor or mode choice with location and design options.

On a broad scale, a decision about whether projects located in particular subareas or corridors would satisfy the transportation goals and objectives of a locality can be made in these subarea or corridor studies. These studies can therefore be used in and relied on in an EIS to refine the purpose and need statement, thereby narrowing the range of alternatives to be considered by eliminating some alternatives from further detailed study. When conducting subarea or corridor screening studies during the planning process, State and local agencies should keep in mind the principles of NEPA and should be sure to document their procedures and rationales. To be incorporated into an EIS, the analysis of alternatives conducted in the subarea or corridor study should be consistent with the standard of NEPA requiring consideration of reasonable alternatives. Alternatives that remain "reasonable after the planning level analysis must be addressed in the NEPA process, even when they are clearly not the preferred alternative.9 Alternatives passed over during the transportation planning process because they are infeasible or because they do not meet the NEPA "purpose and need can be omitted from the detailed analysis of alternatives in the NEPA analyses and documentation, so long as the rationale for omitting them is documented in the NEPA document. That documentation can either be appended to the EIS or the specific transportation planning documents can be summarized in the EIS and incorporated by reference. The NEPA review would then have to consider the alternatives that survive the planning study, plus any additional reasonable alternatives identified during NEPA scoping that may not have been considered during the planning process. All reasonable alternatives considered in the draft and final EIS should be presented in a "comparative form that sharply defines the issues and provides a clear basis for a choice by the decision maker and the public. 40 C.F.R. 1502.14.

Finally, any planning study being relied upon as a basis for eliminating alternatives from detailed study should be identified during the NEPA scoping process and available for public review. Since a major purpose of the scoping process is to identify alternatives to be evaluated, the public should be given the opportunity to comment on determinations made in the planning process to eliminate alternatives.

Therefore, if the planning process is used to screen or narrow the range of alternatives, by excluding certain alternatives from detailed study or by prescribing modes or corridors for transportation development which results in eliminating alternative modes or corridors from detailed study, then the planning-based analysis of alternatives:

- Should describe the rationale for determining the reasonableness of the alternative or alternatives;
- Should include an explanation of why an eliminated alternative would not meet the purpose and need or was otherwise unreasonable; and
- Should be made available for public review during the NEPA scoping process and comment period.

Under FTA's New Starts program, the alternatives considered during the NEPA process may be narrowed even further by eliminating alternatives from detailed study in those instances when the Alternatives Analysis required by 49 U.S.C. 5309(e) is conducted as a planning study prior to the NEPA review.10 In fact, FTA may narrow the alternatives considered in detail in the NEPA analysis and documentation to the No-Build (No-Action) alternative and the "Locally Preferred Alternative". The following criteria must be met if alternatives are eliminated from detailed study by a planning Alternatives Analysis conducted prior to the NEPA review:

- During the planning Alternatives Analysis, all of the reasonable alternatives under consideration must be fully evaluated in terms of their transportation impacts, capital and operating costs, social, economic, and environmental impacts, and technical considerations;
- There must be appropriate public involvement in the planning Alternatives Analysis;
- The appropriate Federal, State, and local resource agencies must be engaged in the planning Alternatives Analysis;
- The results of the planning Alternatives Analysis must be documented;
- The NEPA scoping participants must agree on the alternatives that will be considered in the NEPA review; and
- The NEPA document must incorporate by reference the evaluation of alternatives from the planning Alternatives Analysis.

If, during the NEPA process, new reasonable alternatives not considered during the planning Alternatives Analysis are identified or new information about eliminated alternatives comes to light, those alternatives must be evaluated during the NEPA process.

Affected Environment and Environmental Consequences

The EIS must present a description of the environment in the area that would be affected by the proposed action and alternatives and their environmental consequences. 40

C.F.R. 1502.15 and 1502.16. In the development of the long-range transportation plan and a corridor or subarea studies, a similar assessment of the environment in the area and environmental consequences should typically have been conducted. Such planning-level assessments might include developing and utilizing geographic information system overlays of the area; providing information on air- and water-sheds; identifying the location of environmental resources with respect to the proposed project and alternatives; conducting environmental "scans of the area of impact; and utilizing demographic trends and forecasts developed for the area. The discussion in the planning process of development growth, and consistency with local land use, growth management or development plans, as well as population and employment projections, would be particularly valuable for use in determining the affected environment and the scope of cumulative impacts assessment and possible indirect impacts of the proposed transportation improvement. Any relevant parts of such transportation planning process analysis, conducted in the planning process or by other sources and used in plan development, can be incorporated by reference and relied upon in the NEPA analysis and documentation.

The CEQ regulations require the action agency preparing an EIS to assess the environmental consequences of the proposed action and any reasonable alternatives. The CEQ regulation contains a detailed list of all of the types of environmental consequences that must be discussed, including direct, indirect and cumulative impacts and their significance, as well as means to mitigate adverse environmental impacts. These consequences must be discussed for each alternative and should be presented in a comparative form. 40 C.F.R. 1502.16. In transportation planning, the development of transportation plans and programs is guided by seven planning factors (23 U.S.C. 134(f)(1) and 23 U.S.C. 135(c)(1)), one of which is to "protect and enhance the environment, promote energy conservation, and improve the quality of life. As such, there generally is a broad consideration of the environmental effects of transportation decisions for a region.11 To the extent relevant, this analysis can be incorporated into the "environmental consequences section of an environmental assessment or impact statement performed under NEPA. However, in most cases the assessment of environmental consequences conducted during the planning process will not be detailed enough to meet NEPA standards and thus will need to be supplemented.

Nonetheless, the planning process often can be a source of information for the evaluation of cumulative and indirect impacts required under NEPA. 40 C.F.R. 1502.16, 1508.7 and 1508.8. The nature of the planning process is to look broadly at future land use, development, population increases, and other growth factors. This analysis could provide the basis for the assessment of cumulative and indirect impacts required under NEPA. Investigating these impacts at the planning level can also provide insight into landscape, watershed or regional mitigation opportunities that will provide mitigation for multiple projects.

An EIS may incorporate information regarding future land use, development, demographic changes, etc. from the transportation planning process to form a common basis for comparing the direct, indirect and cumulative impacts of all alternatives. When an analysis of the environmental consequences from the transportation planning process is incorporated into an EIS it:

- Should be presented in a way that differentiates among the consequences of the proposed action and other reasonable alternatives;
- Should be in sufficient detail to allow the decision maker and the public to ascertain the comparative merits and demerits of the alternatives; and
- Must be supplemented to the extent it does not adequately address all of the elements required by the CEQ and FHWA/FTA NEPA regulations.

V. Legal Guidance on Weight to be Given to Planning Products Incorporated into NEPA Analyses and Documents

Responsibility for NEPA analyses and documents on Federally funded or approved highway and transit projects ultimately rests with FHWA and FTA, since they are taking the federal action subject to NEPA. FHWA and FTA have an obligation to independently evaluate and review a NEPA analysis and document, even when some of the information contained in it has been prepared by the State or other local agency. 42 U.S.C. 4332(2)(D); 40 C.F.R. 1506.5 Under NEPA and other relevant environmental laws such as the Endangered Species Act, the Clean Water Act, or the Clean Air Act, other agencies also must be given an opportunity to review and comment on NEPA documents and analysis. Federal agencies that have jurisdiction by law have an independent responsibility under NEPA and, upon the request of the lead agency, shall be "cooperating agencies.12 Tribes and state and local agencies with jurisdiction by law and all agencies with special expertise may, upon the request of the lead agency, be "cooperating agencies in the NEPA process. 40 C.F.R. 1501.6 and 1508.5.

However, while imposing on Federal agencies the obligation to independently evaluate information in NEPA analyses and documents, Congress also affirmed that NEPA does not apply to the transportation planning process because it is not a Federal action:

"Since plans and programs described in this [transportation planning] section are subject to a reasonable opportunity for public comment, since individual projects included in the plans and programs are subject to review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and since decisions by the Secretary concerning plans and programs described in this section have not been reviewed under such Act as of January 1, 1997, any decision by the Secretary concerning a plan or program described in this section shall not be considered to be a Federal action subject to review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.)."

23 U.S.C 134(o) and 135(i). The transportation planning process is a local function, which, by statute, is undertaken by State and local governments. The Department of Transportation has an oversight role, but it does not conduct the process and, therefore, there is no Federal action to trigger the application of NEPA. This is different than the "big picture planning processes undertaken by other Federal agencies with respect to lands that they manage, where action by the Federal agency is involved and NEPA applies.13

The affirmation in Sections 134(o) and 135(i) that the decisions made by State and local governments during the transportation planning process are exempt from NEPA is based on a Fifth Circuit decision, *Atlanta Coalition on the Transportation Crisis, Inc. v. Atlanta Regional Commission*, 599 F.2d 1333 (5th Cir. 1979). In this case, plaintiffs sought declaratory judgment that an EIS was required for a regional transportation plan

developed by the Atlanta Regional Commission in compliance with the FHWA and FTA planning regulations. The plan proposed a comprehensive transportation system for the Atlanta area. It included an analysis of projected regional transportation needs through the year 2000 and identified the general location and the mode (i.e. highway or transit) for recommended transportation corridors to meet those needs. The Fifth Circuit denied plaintiff's request for an EIS, finding that "Congress did not intend NEPA to apply to state, local or private actions; hence, the statute speaks only to 'federal agencies' and requires impact statements only as to 'major federal actions.' 559 F.2d at 1344. Specifically, the Court stated:

"The fact is that the [regional plan] was developed by ARC in conjunction with state and local authorities, and no federal agency had any significant hand in determining, or made any decision concerning, its substantive aspects. Under the statutes, those decisions are entrusted to the state and local agencies, not FHWA or [FTA]. Moreover, the plan, as a plan will never be submitted to a federal agency for review or approval. And while the planning process was so structured so as to preserve the eligibility for federal funding of projects included within the resulting plan, it has been consistently held that the possibility of federal funding in the future does not make the project or projects 'major federal action' during the planning stage."

[Cites omitted] 599 F.2d at 1346. The Court further found that certification or funding of the planning process by FHWA and FTA did not amount to a "major federal action as defined in the NEPA regulations. 559 F.3d at 1344; 40 C.F.R. 1508.18. The Court concluded by again emphasizing: "We have no doubt but that the [regional plan] embodies important decisions concerning the future growth of the Atlanta area that will have a continuing and significant effect on the human environment. But at the risk of belaboring the point, we reemphasize that those decisions have been made by state and local authorities, will not be reviewed by any federal agency, and obligate no federal funds. The defendants therefore need not prepare an impact statement on the [regional plan]. 559 F.3d at 1349.

This theme is echoed in other court decisions involving local planning processes. Early in the development of NEPA law, Courts recognized that deference to local planning was appropriate in the NEPA process. In *Maryland-National Capital Park and Planning Commission v. U.S. Postal Service*, 487 F.2d 1029 (U.S. App. D.C. 1973), the Postal Service determined that the construction of a bulk mail facility would have no significant impact since, under the locality's zoning laws, the postal facility was a "permitted use at the location proposed by the Postal Service. In analyzing this issue, the Court noted: "The question of significance takes on a distinctive case in the context of land use planning. The Court went on to state: "When local zoning regulations and procedures are followed in site location decisions by the Federal Government, there is an assurance that such 'environmental' effects as flow from the special uses of land—the safety of the structures, cohesiveness of neighborhoods, population density, crime control, and esthetics-will be no greater than demanded by the residents acting through their elected representatives. 487 F.2d at 165-66. The Court acknowledged, however, that local planning was not sufficient to effectuate NEPA, and that actions of the Federal government might have implications beyond those evaluated in the planning process: "For example, whereas the Federal Government might legitimately defer to New York City zoning in matters of, say, population density, a different issue would be posed by the location within the city of an atomic reactor. Its peculiar hazards would not be limited

to the citizens of New York, nor could they control them. 487 F.2d at 166. *See also Preservation Coalition, Inc. v. Pierce*, 667 F.2d 851 (C.A. Idaho 1982) (citing *Maryland-National Capital Park* and upholding a finding of no significant impact when a Federal project conformed to existing land use patterns, zoning and local plans).

The Fifth Circuit followed a similar line of reasoning in *Isle of Hope Historical Association v. U.S. Army Corps of Engineers*, 646 F. 2d 215 (5th Cir. 1981). In this case, the Court held that, in preparing an EIS, the Corps of Engineers properly relied on information and answers from the local government regarding planning and zoning issues. The Corps had consulted with county officials to determine whether planning documents had been adopted and whether there was any inconsistency between the proposed project and the local zoning regulations. Plaintiffs challenged this part of the EIS, alleging that it had not adequately discussed the planning documents at issue nor disclosed inconsistencies between the zoning regulations and the proposed project. The Court upheld the Corps' reliance on the county officials' responses, stating that "For the Corps in this case to follow planning documents which the county had not adopted or to engage independent analysis of inconsistencies which those specifically charged with zoning enforcement did not find would make the Corps in effect a planning and zoning review board. . . The proper function of the Corps was to assess the environmental impact of the [proposed project], not to act as a zoning interpretation or appeal board. 646 F.2d at 221.14

This respect for local sovereignty in making planning decisions has been reinforced more recently in the context of transportation planning. In *North Buckhead Civic Association v. Skinner* (discussed previously in Section III of this Memorandum), the 11th Circuit emphasized that "NEPA does not confer the power or responsibility for long range local planning on Federal or state agencies. 903 F. 3d at 1541-42. See also *Sierra Club v. U.S. Department of Transportation*, 350 F.Supp.2d 1168, 1193 (D. Nevada 2004), where the Court said: "[A] federal agency does not violate NEPA by relying on prior studies and analyses performed by local and state agencies. This approach is also consistent with the statutory provision describing the Federal-State relationship for the Federal-aid highway program: "The authorization of the appropriation of Federal funds or their availability for expenditure under this chapter shall in no way infringe on the sovereign rights of the States to determine which projects shall be federally financed. 23 U.S.C.

145(a). In conducting its NEPA analysis, FHWA and FTA must take into account Congressional direction regarding its statutory authority to act. See *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190 (C.A.D.C. 1991).15

When it enacts a provision of law, Congress is presumed to have in mind previous laws relating to the same subject matter. To the greatest extent possible, new statutes should be read in accord with prior statutes, and should be construed together in harmony. N. Singer, *Statutes and Statutory Construction*, 6th Ed., Vol. 2B, Sec. 51.02. A Federal agency's independent obligation to evaluate planning products incorporated into the NEPA process must be performed in a way that is consistent with the Congressional direction that NEPA does not apply to local transportation planning and consistent with court decisions recognizing the sovereignty of local governments in making local transportation planning decisions. Federal agencies should ensure transportation planning decisions have a rational basis and are based on accurate data, but should not use the NEPA process as a venue for substituting federal judgment for local judgment by

requiring reconsideration of systems-level objectives or choices that are properly made during the local transportation planning process.16

The transportation planning process and the NEPA process work in harmony when the planning process provides the basis or foundation for the purpose and need statement in a NEPA document. To the extent regional or systems-level analyses and choices in the transportation planning process help to form the purpose and need statement for a NEPA document, such planning products should be given great weight by FHWA and FTA, consistent with Congressional and Court direction to respect local sovereignty in planning. This approach is also consistent with a letter to Secretary Mineta dated May 12, 2003, from James Connaughton, Chairman of CEQ, on purpose and need statements in NEPA documents:

"Federal courts generally have been deferential in their review of a lead agency's 'purpose and need' statements, absent a finding that an agency acted in an arbitrary or capricious manner. They have recognized that federal agencies should respect the role of local and state authorities in the transportation planning process and appropriately reflect the results of that process in the federal agency's NEPA analysis of purpose and need [citing to *North Buckhead*]."

Further, in his letter, the Chairman states that, even though other Federal agencies must be provided an opportunity to comment, they "should afford substantial deference to the transportation agency's articulation of purpose and need when the proposal is a transportation project.17

Therefore, if transportation planning studies and conclusions have properly followed the transportation planning process, then they can be incorporated into the purpose and need statement and, further, can be used to help draw bounds around alternatives that need to be considered in detail. For example, if systems-level or other broad objectives or choices18 from the transportation plan are incorporated into the purpose and need statement used in a NEPA document, FHWA and FTA should not revisit whether these are the best objectives or choices among other options. Rather, their review would include making sure that objectives or choices derived from the transportation plan were based on transportation planning factors established by federal law; reflect a credible and articulated planning rationale; are founded on reliable data; and were developed through a transportation planning process meeting FHWA and FTA statutory and regulatory requirements. In addition, the basis for the objectives and choices must be documented and included in the NEPA document. In such cases, alternatives falling outside a purpose and need statement derived from objectives or choices identified in the planning process do not need to be considered in detail.

FHWA and FTA should independently review regional analyses or studies of transportation needs conducted during the transportation planning process at a similar level. FHWA and FTA reviewers do not need to review whether assumptions or analytical methods used in the studies are the best available, but, instead, need to assure that such assumptions or analytical methods are reasonable and scientifically acceptable. This review would include determining whether assumptions have a rational basis and are up-to-date and data, analytical methods, and modeling techniques are reliable, defensible, and reasonably current. This approach preserves the sovereignty of

state and local governments in making local planning decisions but in a way that is consistent with the principles and procedures of NEPA.

Nonetheless, additional scrutiny may be required if the results of the planning process are more specific than needed for regional or systems-level planning. Such results might actually be part of project development, which is outside of the planning jurisdiction of local agencies. Project development often involves a Federal action and therefore would be subject to NEPA. See 23 U.S.C. 134(o) and 135(i). In addition, the information the Federal agencies rely upon in the NEPA process based on underlying transportation planning work cannot be inaccurate, false or misleading. See *Sierra Club v. U.S. Army Corps of Engineers,* 701 F. 2d 1011, 1035 (where the court required a supplementation or re-evaluation of the NEPA analyses and documentation where the Corps unquestioningly relied on inaccurate information and did not investigate, on its own, the accuracy of the fisheries data submitted to it to support a permit for a landfill in the Hudson river to accommodate the Westway highway project.)

In conducting reviews under NEPA, Federal agencies should defer to planning products incorporated into the NEPA process to the extent that they involve decisions or analysis within the jurisdiction of the local planning agency. The focus of the Federal agency's review should be whether the planning information is adequate to meet the standards of NEPA, not whether the decisions made by the planning authority are correct. This would be consistent with the specific roles assigned by Congress to local and Federal authorities and consistent with court decisions admonishing Federal agencies to respect the sovereignty of local authorities in developing local plans.

VI. Conclusion

This memorandum provides guidance on how transportation planning level information and products may be used to focus the documentation prepared to comply with NEPA when Federal approvals are needed to build a transportation project. Federal law and regulations and best practices ensure that much information that is relevant to the NEPA process is in fact developed during the planning process. Both Federal transportation law and NEPA law strongly suggest that to the extent practicable, the NEPA process should use and build on the decision made and information developed during the planning process. Of course, where the transportation planning process fails to address or document issues, the NEPA analyses and documentation may have to supplement the information developed during the planning process.

Original signed by D.J. Gribbin and Judith S. Kaleta

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1 Protection of the environment is reinforced in the FHWA and FTA regulations clarifying the factors to be considered in the transportation planning process (e.g., States and MPOs must analyze the "overall social, economic, energy and environmental effects of transportation decisions. . . 23 CFR 450.208 and 450.316.

2 As stated in the planning provisions of Title 23, "any decision by the Secretary concerning a plan or program described in this section shall not be considered to be a Federal action subject to review under NEPA. 23 U.S.C. 134(o); see also 23 U.S.C. 135(i). These provisions are discussed more fully in Section V of this memorandum.

3 Note, however, an alternative is not "speculative or "unreasonable merely because it is outside the jurisdiction of the proposing agency. 40 C.F.R. 1402.14 (c). In some cases, an agency might be required to consider an alternative outside its jurisdiction. For example, in *Muckleshoot Indian Tribe v. United States Forest Service*, 177 F.3d 800 (9th Cir. 1999), the Ninth Circuit Court of Appeals found that the lack of funds for an alternative was not sufficient to render it "speculative when the Forest Service could have at least made a request for additional funding. The facts in the *Muckleshoot* case are different than the *Utahns* case, where the local agencies had clearly declined to exercise the alternative.

4 Corridor-level "Major Investment Studies were for a time required under FTA and FHWA's planning regulations where a need for a major metropolitan transportation investment was identified and Federal funds were potentially involved. Major investment studies were intended to refine the system-wide transportation plan and lead to decisions on the design concept and scope of the project, in consultation with other interested agencies. In addition, they were intended to be used as input to EISs and EAs. 23 C.F.R. 450.318. In Section 1308 of the Transportation Equity Act for the 21st Century, the Secretary was directed to eliminate the separate requirement for major investment studies and instead to integrate it with the planning analyses required under the FTA and FHWA planning statutes "as part of the analyses required to be undertaken pursuant to the planning provisions of Title 23, United States Code and Chapter 53 of Title 49, United States Code, and the National Environmental Policy Act of 1959 (42 U.S.C. 4321 et seq.) for Federal-aid highway and transit projects.. Pub.. 105-178 (June 9, 1998). Although no longer required, "major investment studies continue to be allowed at the discretion of the State or local agency.

It is telling, however, that a good many State and local agencies continue to prepare "major investment studies (and similar corridor and sub-area analyses) on their own volition, because they have found it very valuable to vet the merits and weaknesses of various alternatives—both modal and alignment--before they even initiate the NEPA analyses and documentation. Moreover, FTA requires Metropolitan Planning Organizations and/or transit agencies contemplating major capital investment ("new starts) projects to prepare a planning-level corridor study, know as an "Alternatives Analysis, either before or during a Draft Environmental Impact Statement for the purpose of narrowing the range of alternatives for study in a subsequent NEPA analysis and document(s) by eliminating some alternatives from further detailed study. See also footnote 10.

5 Plaintiffs have appealed this decision, and the Ninth Circuit has stayed further construction on the project pending the outcome of the appeal. *Order Granting Stay*, Ninth Circuit Court of Appeals, No. CV-02-00578-PMP (July 27, 2004).

6 Documents may be incorporated by reference if they do not impede agency or public review of the action. Any document incorporated by reference must be "reasonably available for inspection by potentially interested persons within the time allowed for comment. Incorporated materials must be cited in the NEPA document and their contents briefly described. 40 C.F.R. 1502.21.

7 40 C.F.R. 1502.14 The term "alternatives is also used in many other contexts (for example, "prudent and feasible alternatives under Section 4(f) of the Department of

Transportation Act, the "Least Environmentally Damaging Practicable Alternative under the Clean Water Act, or the "Alternatives Analysis under FTA's New Starts program). This memorandum only uses the term as defined under NEPA. At the planning stage of any project, however, a determination should be made as to whether the alternatives to be considered will need to be used to satisfy multiple requirements at the planning and NEPA review stages. If so, during planning the alternatives chosen for consideration and the analysis of those alternatives should reflect the multiple statutory objectives that must be addressed.

8 In some cases, an alternative may be reasonable even if it just partially satisfies the purpose and need. See *NRDC v. Morton*, 458 F.2d 827, 836 (C.A.D.C. 1972).

9 Under the requirements for FTA's New Starts Program, however, under the appropriate circumstances, reasonable alternatives may be eliminated from detailed study during a rigorous planning-level Alternatives Analysis (including an evaluation of environmental consequences) conducted before the issuance of a NEPA Notice of Intent to prepare an Environmental Impact Statement. This is discussed later in this section.

10 FTA offers applicant sponsors the opportunity to conduct the Alternatives Analysis before NEPA begins or alternatively, to conduct the Alternatives Analysis concurrently with the NEPA DEIS.

11 Specifically, the FHWA/FTA transportation planning regulations (23 C.F.R. Part 450 and 49 C.F.R. Part 613) require inclusion of the overall social, economic, energy and environmental effects of transportation decisions (including consideration of the effects and impacts of the plan on human, natural and man-made environment such as housing, employment and community development, consultation with appropriate resource and permit agencies to ensure early and continued coordination with environmental resource protection and management plans, and appropriate emphasis on transportation-related air quality problems). 23 C.F.R. 450.316(a)(13).

12 Nonetheless, a cooperating agency may, in response to a lead agency's request for assistance in preparing an EIS, reply that other program commitments preclude any involvement or the degree of involvement requested in the action that is subject to the EIS. 40 C.F.R. 1501.6(c).

13 For example, NEPA applies to the general management plans prepared and approved by the National Park Service for each unit of the National Park System (Chapter 2, "Management Policies, at www.nps.gov/policy/mp/chapter2.htm), and applies to resource management plans prepared and approved by the Bureau of Land Management to maximize resource values of federal lands and resources (43 C.F.R. 1601.0-6).

14 Of course, the reliance on the underlying local plan does not excuse the analysis of the impacts of the project within the context of that plan. Cf*. Sierra Club Illinois Chapter v. U.S. Department of Transportation*, 962 F. 2d 1037, 1042 (N.D. Ill. 1997).

15 In this case, plaintiffs challenged the Federal Aviation Administration's EIS on an application by the Toledo Port Authority for a cargo hub in Toledo. Plaintiffs alleged that the FAA should have considered alternatives outside of Toledo. The Court disagreed,

finding that Congress had made clear that the location of cargo hubs was to be made by local authorities and not by the Federal government, stating: "Where the Federal government acts, not as a proprietor, but to approve and support a project being sponsored by a local government or private applicant, the Federal agency is necessarily more limited. In the latter instance, the Federal government's consideration of alternatives may accord substantial weight to the preferences of the applicant and/or sponsor in the sitting and design of the project. 938 F.2d at 197.

16 This would not constrain the Environmental Protection Agency's authority under Section 309 of the Clean Air Act to refer concerns to the President's Council on Environmental Quality regarding impacts on public health or welfare or environmental quality. 42 U.S.C. 7609.

17 See, also, *Citizens Against Burlington, Inc. v. Busey*, *id*., At 938 F.2d 190, 195-96 (C.A.D.C. 1991), stating "When an agency is asked to sanction a specific plan, see 40 C.F.R. § 1508.18(b)(4), the agency should take into account the needs and goals of the parties involved in the application. [Citations omitted]; *Louisiana Wildlife Federation, Inc. v. York*, 761 F.2d 1044 (5th Cir. 1985), stating "Under [the Corps'] Guidelines, therefore, not only is it permissible for the Corps to consider the applicant's objective; the Corps has a duty to take into account the objectives of the applicant's project. Indeed, it would be bizarre if the Corps were to ignore the purpose for which the applicant seeks a permit and to substitute a purpose it deems more suitable.

18 Examples of such planning objectives or choices that courts have accepted for use in the purpose and need statement for a NEPA document are (1) the need for a multi-lane highway connecting two other highways (*North Buckhead Civic Association v. Skinner*, 903 F.2d at 1537) and (2) the need for a particular level of service (*Carmel-by-the-Sea v. U.S. DOT,* 123 F.3d at 1156). In *Atlanta Coalition on the Transportation Crisis v. Atlanta Regional Commission*, the court discusses the distinction between "systems planning and "project planning, and describes the Atlanta "systems plan as "an analysis of projected regional transportation needs through the year 2000 [identifying] the general location and the mode (i.e., highway or mass transit) of recommended transportation corridors to meet those needs. 599 F.2d at fn.2 and at 1341

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Appendix F

MPO Air Quality Conformity Checklist

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Conformity Analysis Documentation
Checklist for MPO TIPs/RTPs

40 CFR	Criteria	Page	Comments
§93.102	Document the applicable pollutants and precursors for which EPA designates the area as nonattainment or maintenance. Describe the nonattainment or maintenance area and its boundaries.		
§93.104 (b, c)	Document the date that the MPO officially adopted, accepted or approved the TIP/RTP and made a conformity determination. Include a copy of the MPO resolution. Include the date of the last prior conformity finding.		
§93.104 (e)	If the conformity determination is being made to meet the timelines included in this section, document when the new motor vehicle emissions budget was approved or found adequate.		
§93.106	If the metropolitan planning area is in a serious, severe, or extreme ozone nonattainment area and/or serious carbon monoxide nonattainment area and contains an urbanized population over 200,000, then RTP must specifically describe the transportation system envisioned for future years called "horizon years."		
§93.106 (a)(2)ii	Describe the regionally significant additions or modifications to the existing transportation network that are expected to be open to traffic in each analysis year. Document that the design concept and scope of projects allows adequate model representation to determine intersections with regionally significant facilities, route options, travel times, transit ridership and land use.		
§93.108	Document the TIP/RTP is fiscally constrained consistent with DOT's metropolitan planning regulations at (23 CFR 450) in order to be found in conformity.		
§93.109 (a, b)	Document that the TIP/RTP complies with any applicable conformity requirements of air quality implementation plans (SIPs) and court orders.		
§93.109 (c-k)	Provide either a table or text description that details, for each pollutant and precursor, whether the interim emissions tests and/or the budget test apply for conformity. Indicate which emissions budgets have been found adequate by EPA, and which budgets are currently applicable for what analysis years.		
§93.110 (a, b)	Document the use of latest planning assumptions (source and year) at the “time the conformity analysis begins,” including current and future population, employment, travel and congestion. Document the use of the most recent available vehicle registration data. Document the date upon which the conformity analysis was begun.		
USDOT/EPA guidance	Documents planning assumptions are less than 5 years old at the time the conformity analysis begins. If assumptions are older than 5 years documents justification for not reviewing and updating assumptions at least every 5 years.		
§93.110 (c,d,e,f)	Document any changes in transit operating policies and assumed ridership levels since the previous conformity determination. Document the use of the latest transit fares and road and bridge tolls. Document the use of the latest information on the effectiveness of TCMs and other SIP measures that have been implemented. Document the key assumptions and show that they were agreed to through Interagency and public consultation.		
§93.111	Document the use of the latest emissions model approved by EPA.		

40 CFR	Criteria	Page	Comments
§93.112	Document fulfillment of the interagency and public consultation requirements outlined in a specific implementation plan according to §51.390 or, if a SIP revision has not been completed, according to §93.105 and 23 CFR 450. Include documentation of consultation on conformity tests and methodologies as well as responses to written comments.		
§93.113	Document timely implementation of all TCMs in approved SIPs. Document that implementation is consistent with schedules in the applicable SIP and document whether anything interferes with timely implementation. Document any delayed TCMs in the applicable SIP and describe the measures being taken to overcome obstacles to implementation.		
§93.114	Document that the conformity analyses performed for the TIP is consistent with the analysis performed for the Plan, in accordance with 23 CFR 450.324(f)(2).		
§93.115	Describe how the projects come from a conforming RTP and TIP. If this criterion is not satisfied, the project must satisfy all criteria in Table 1 of §93.109(b) for a project not from a RTP and TIP.		
§93.118 (a, c, e)	For areas with SIP budgets: Document that emissions from the transportation network for each applicable pollutant and precursor, including projects in any associated donut area that are in the Statewide TIP and regionally significant non-Federal projects, are consistent with any adequate or approved motor vehicle emissions budget for all pollutants and precursors in applicable SIPs.		
§93.118 (b)	Document for which years consistency with motor vehicle emissions budgets must be shown.		
§93.118 (d)	Document the use of the appropriate analysis years in the regional emissions analysis for areas with SIP budgets, and the analysis results for these years. Document any interpolation performed to meet tests for years in which specific analysis is not required.		
§93.119 [1]	For areas without applicable SIP budgets: Document that emissions from the transportation network for each applicable pollutant and precursor, including projects in any associated donut area that are in the Statewide TIP and regionally significant non-Federal projects, are consistent with the requirements of the “Action/Baseline”, “Action/1990” and/or “Action/2002” interim emissions tests as applicable.		
§93.119 (g)	Document the use of the appropriate analysis years in the regional emissions analysis for areas without applicable SIP budgets. The regional emissions analysis must be performed for analysis years that are no more than ten years apart. The first analysis year must be no more than five years beyond the year in which the conformity determination is being made. The last year of the timeframe of the conformity determination (as described under §93.106(d)) must also be an analysis year.		
§93.119 (h,i)	Document how the baseline and action scenarios are defined for each analysis year.		
§93.122 (a)(1)	Document that all regionally significant federal and non-Federal projects in the nonattainment/maintenance area are explicitly modeled in the regional emissions analysis. For each project, identify by which analysis it will be open to traffic. Document that VMT for non-regionally significant Federal projects is accounted for in the regional emissions analysis		

40 CFR	Criteria	Page	Comments
§93.122 (a)(2, 3)	Document that only emission reduction credits from TCMs on schedule have been included or that partial credit has been taken for partially implemented TCMs. Document that the regional emissions analysis only includes emissions credit for projects, programs, or activities that require regulatory action if: the regulatory action has been adopted; the project, program, activity or a written commitment is included in the SIP; EPA has approved an opt-in to the program, EPA has promulgated the program, or the Clean Air Act requires the program (indicate applicable date). Discuss the implementation status of these programs and the associated emissions credit for each analysis year.		
§93.122 (a)(4,5,6)	For nonregulatory measures that are not included in the STIP, include written commitments from appropriate agencies. Document that assumptions for measures outside the transportation system (e.g. fuels measures) are the same for baseline and action scenarios. Document that factors such as ambient temperature are consistent with those used in the SIP unless modified through interagency consultation.		
§93.122 (b)(1)(i) [2]	Document that a network-based travel model is in use that is validated against observed counts for a base year no more than 10 years before the date of the conformity determination. Document that the model results have been analyzed for reasonableness and compared to historical trends and explain any significant differences between past trends and forecasts (for per capita vehicle-trips, VMT, trip lengths mode shares, time of day, etc.).		
§93.122 (b)(1)(ii) [2]	Document the land use, population, employment, and other network-based travel model assumptions.		
§93.122 (b)(1)(iii) [2]	Document how land use development scenarios are consistent with future transportation system alternatives, and the reasonable distribution of employment and residences for each alternative.		
§93.122 (b)(1)(iv) [2]	Document use of capacity sensitive assignment methodology and emissions estimates based on a methodology that differentiates between peak and off-peak volumes and speeds, and bases speeds on final assigned volumes.		
§93.122 (b)(1)(v) [2]	Document the use of zone-to-zone travel impedances to distribute trips in reasonable agreement with the travel times estimated from final assigned traffic volumes. Where transit is a significant factor, document that zone-to-zone travel impedances used to distribute trips are used to model mode split.		
§93.122 (b)(1)(vi) [2]	Document how travel models are reasonably sensitive to changes in time, cost, and other factors affecting travel choices.		
§93.122 (b)(2) [2]	Document that reasonable methods were used to estimate traffic speeds and delays in a manner sensitive to the estimated volume of travel on each roadway segment represented in the travel model.		
§93.122 (b)(3) [2]	Document the use of HPMS, or a locally developed count-based program or procedures that have been chosen through the consultation process, to reconcile and calibrate the network-based travel model estimates of VMT.		
§93.122 (d)	In areas not subject to §93.122(b), document the continued use of modeling techniques or the use of appropriate alternative techniques to estimate vehicle miles traveled		
§93.122 (e, f)	Document, in areas where a SIP identifies construction-related PM10 or PM 2.5 as significant pollutants, the inclusion of PM10 and/or PM 2.5 construction emissions in the conformity analysis.		
§93.122 (g)	If appropriate, document that the conformity determination relies on a previous regional emissions analysis and is consistent with that analysis.		

40 CFR	Criteria	Page	Comments
§93.126, §93.127, §93.128	Document all projects in the TIP/RTP that are exempt from conformity requirements or exempt from the regional emissions analysis. Indicate the reason for the exemption (Table 2, Table 3, traffic signal synchronization) and that the interagency consultation process found these projects to have no potentially adverse emissions impacts.		

[1] Note that some areas are required to complete both interim emissions tests.

[2] 40 CFR 93.122(b) refers only to serious, severe and extreme ozone areas and serious CO areas above 200,000 population

Disclaimers

This checklist is intended solely as an informational guideline to be used in reviewing Transportation Plans and Transportation Improvement Programs for adequacy of their conformity documentation. It is in no way intended to replace or supercede the Transportation Conformity regulations of 40 CFR Parts 51 and 93, the Statewide and Metropolitan Planning Regulations of 23 CFR Part 450 or any other EPA, FHWA or FTA guidance pertaining to transportation conformity or statewide and metropolitan planning. This checklist is not intended for use in documenting transportation conformity for individual transportation projects in nonattainment or maintenance areas. 40 CFR Parts 51 and 93 contain additional criteria for project-level conformity determinations.

Appendix G

SB 375 and SB 575 STATUTORY LANGUAGE

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SB 375 Statutory Language (signed September 30, 2008)
and
SB 575 Statutory Language (signed October 11, 2009)
(these changes are shown in underlined text)

Government Code Section 14522

14522. In cooperation with the regional transportation planning agencies, the commission may prescribe study areas for analysis and evaluation by such agencies and guidelines for the preparation of the regional transportation plans.

Government Code Section 14522.1

CTC Maintains RTP Guidelines

14522.1. (a) (1) The commission, in consultation with the department and the State Air Resources Board, shall maintain guidelines for travel demand models used in the development of regional transportation plans by federally designated metropolitan planning organizations.

(2) Any revision of the guidelines shall include the formation of an advisory committee that shall include representatives of the metropolitan planning organizations, the department, organizations knowledgeable in the creation and use of travel demand models, local governments, and organizations concerned with the impacts of transportation investments on communities and the environment. Before amending the guidelines, the commission shall hold two workshops on the guidelines, one in northern California and one in southern California. The workshops shall be incorporated into regular commission meetings.

(b) The guidelines shall, at a minimum and to the extent practicable, taking into account such factors as the size and available resources of the metropolitan planning organization, account for all of the following:

(1) The relationship between land use density and household vehicle ownership and vehicle miles traveled in a way that is consistent with statistical research.

(2) The impact of enhanced transit service levels on household vehicle ownership and vehicle miles traveled.

(3) Changes in travel and land development likely to result from highway or passenger rail expansion.

(4) Mode splitting that allocates trips between automobile, transit, carpool, and bicycle and pedestrian trips. If a travel demand model is unable to forecast bicycle and pedestrian trips, another means may be used to estimate those trips.

(5) Speed and frequency, days, and hours of operation of transit service.

Government Code Section 14522.2

Travel Demand Models

14522.2. (a) A metropolitan planning organization shall disseminate the methodology, results, and key assumptions of whichever travel demand models it uses in a way that would be useable and understandable to the public.

(b) Transportation planning agencies other than those identified in paragraph (1) of subdivision (a) of Section 14522.1, cities, and counties are encouraged, but not required, to utilize travel demand models that are consistent with the guidelines in the development of their regional transportation plans.

Government Code Section 65080

RTP Development

65080. (a) Each transportation planning agency designated under Section 29532 or 29532.1 shall prepare and adopt a regional transportation plan directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement, and aviation facilities and services. The plan shall be action-oriented and pragmatic, considering both the short-term and long-term future, and shall present clear, concise policy guidance to local and state officials. The regional transportation plan shall consider factors specified in Section 134 of Title 23 of the United States Code. Each transportation planning agency shall consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations, and state and federal agencies.

RTP Contents

(b) The regional transportation plan shall be an internally consistent document and shall include all of the following:

(1) A policy element that describes the transportation issues in the region, identifies and quantifies regional needs, and describes the desired short-range and long-range transportation goals, and pragmatic objective and policy statements. The objective and policy statements shall be consistent with the funding estimates of the financial element. The policy element of transportation planning agencies with populations that exceed 200,000 persons may quantify a set of indicators including, but not limited to, all of the following:

(A) Measures of mobility and traffic congestion, including, but not limited to, daily vehicle hours of delay per capita and vehicle miles traveled per capita.

(B) Measures of road and bridge maintenance and rehabilitation needs, including, but not limited to, roadway pavement and bridge conditions.

(C) Measures of means of travel, including, but not limited to, percentage share of all trips (work and nonwork) made by all of the following:

(i) Single occupant vehicle.

(ii) Multiple occupant vehicle or carpool.

(iii) Public transit including commuter rail and intercity rail.

(iv) Walking.

(v) Bicycling.

(D) Measures of safety and security, including, but not limited to, total injuries and fatalities assigned to each of the modes set forth in subparagraph (C).

(E) Measures of equity and accessibility, including, but not limited to, percentage of the population served by frequent and reliable public transit, with a breakdown by income bracket, and percentage of all jobs accessible by frequent and reliable public transit service, with a breakdown by income bracket.

(F) The requirements of this section may be met utilizing existing sources of information. No additional traffic counts, household surveys, or other sources of data shall be required.

ARB Develops Regional Greenhouse Gas Emission Targets

(2) A sustainable communities strategy prepared by each metropolitan planning organization as follows:

(A) No later than September 30, 2010, the State Air Resources Board shall provide each affected region with greenhouse gas emission reduction targets for the automobile and light truck sector for 2020 and 2035, respectively.

Role of the Regional Targets Advisory Committee

(i) No later than January 31, 2009, the state board shall appoint a Regional Targets Advisory Committee to recommend factors to be considered and methodologies to be used for setting greenhouse gas emission reduction targets for the affected regions. The committee shall be composed of representatives of the metropolitan planning organizations, affected air districts, the League of California Cities, the California State Association of Counties, local transportation agencies, and members of the public, including homebuilders, environmental organizations, planning organizations, environmental justice organizations, affordable housing organizations, and others. The advisory committee shall transmit a report with its recommendations to the state board no later than September 30, 2009. In recommending factors to be considered and methodologies to be used, the advisory committee may consider any relevant issues, including, but not limited to, data needs, modeling techniques, growth forecasts, the impacts of regional jobs-housing balance on interregional travel and greenhouse gas emissions, economic and demographic trends, the magnitude of greenhouse gas reduction benefits from a variety of land use and transportation strategies, and appropriate methods to describe regional targets and to monitor performance in attaining those targets. The state board shall consider the report prior to setting the targets.

(ii) Prior to setting the targets for a region, the state board shall exchange technical information with the metropolitan planning organization and the affected air district. The metropolitan planning organization may recommend a target for the region. The metropolitan planning organization shall hold at least one public workshop within the region after receipt of the report from the advisory committee. The state board shall release draft targets for each region no later than June 30, 2010.

(iii) In establishing these targets, the state board shall take into account greenhouse gas emission reductions that will be achieved by improved vehicle emission standards, changes in fuel composition, and other measures it has approved that will reduce greenhouse gas emissions in the affected regions, and prospective measures the state board plans to adopt to reduce greenhouse gas emissions from other greenhouse gas

emission sources as that term is defined in subdivision (i) of Section 38505 of the Health and Safety Code and consistent with the regulations promulgated pursuant to the California Global Warming Solutions Act of 2006 (Division 12.5(commencing with Section 38500) of the Health and Safety Code).

(iv) The state board shall update the regional greenhouse gas emission reduction targets every eight years consistent with each metropolitan planning organization's timeframe for updating its regional transportation plan under federal law until 2050. The state board may revise the targets every four years based on changes in the factors considered under clause (iii) above. The state board shall exchange technical information with the Department of Transportation, metropolitan planning organizations, local governments, and affected air districts and engage in a consultative process with public and private stakeholders prior to updating these targets.

(v) The greenhouse gas emission reduction targets may be expressed in gross tons, tons per capita, tons per household, or in any other metric deemed appropriate by the state board.

Preparation of the SCS

(B) Each metropolitan planning organization shall prepare a sustainable communities strategy, subject to the requirements of Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal Regulations, including the requirement to utilize the most recent planning assumptions considering local general plans and other factors. The sustainable communities strategy shall (i) identify the general location of uses, residential densities, and building intensities within the region; (ii) identify areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth; (iii) identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Section 65584; (iv) identify a transportation network to service the transportation needs of the region; (v) gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Section 65080.01; (vi) consider the state housing goals specified in Sections 65580 and 65581; (vii) set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the state board; and (viii) allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Sec. 7506).

Role of ABAG in the San Francisco Bay Area

(C)(i)Within the jurisdiction of the Metropolitan Transportation Commission, as defined by Section 66502, the Association of Bay Area Governments shall be responsible for clauses (i), (ii), (iii), (v), and (vi), the Metropolitan Transportation Commission shall be responsible for clauses (iv) and (viii); and the Association of Bay Area Governments and the Metropolitan Transportation Commission shall jointly be responsible for clause (vii) of subparagraph (B).

Use of Regional Plan for the Lake Tahoe Region

(ii) Within the jurisdiction of the Tahoe Regional Planning Agency, as defined in Sections 66800 and 66801, the Tahoe Metropolitan Planning Organization shall use the Regional Plan for the Lake Tahoe Region as the sustainable community strategy, provided it complies with clauses (vii) and (viii) of subparagraph (B).

Role of Subregions in the Development of an SCS

(D) In the region served by the multicounty transportation planning agency described in Section 130004 of the Public Utilities Code, a subregional council of governments and the county transportation commission may work together to propose the sustainable communities strategy and an alternative planning strategy, if one is prepared pursuant to subparagraph (I), for that subregional area. The metropolitan planning organization may adopt a framework for a subregional sustainable communities strategy or a subregional alternative planning strategy to address the intraregional land use, transportation, economic, air quality, and climate policy relationships. The metropolitan planning organization shall include the subregional sustainable communities strategy for that subregion in the regional sustainable communities strategy to the extent consistent with this section and federal law and approve the subregional alternative planning strategy, if one is prepared pursuant to subparagraph (I), for that subregional area to the extent consistent with this section. The metropolitan planning organization shall develop overall guidelines, create public participation plans pursuant to subparagraph (F), ensure coordination, resolve conflicts, make sure that the overall plan complies with applicable legal requirements, and adopt the plan for the region.

MPO Consults with Local Elected Officials

(E) The metropolitan planning organization shall conduct at least two informational meetings in each county within the region for members of the board of supervisors and city councils on the sustainable communities strategy and alternative planning strategy, if any. The metropolitan planning organization may conduct only one informational meeting if it is attended by representatives of the county board of supervisors and city council members representing a majority of the cities representing a majority of the population in the incorporated areas of that county. Notice of the meeting or meetings shall be sent to the clerk of the board of supervisors and to each city clerk. The purpose of the meeting or meetings shall be to discuss the sustainable communities strategy and the alternative planning strategy, if any, including the key land use and planning assumptions to the members of the board of supervisors and the city council members in that county and to solicit and consider their input and recommendations.

SCS Public Participation Plan and Public Input

(F) Each metropolitan planning organization shall adopt a public participation plan, for development of the sustainable communities strategy and an alternative planning strategy, if any, that includes all of the following:

(i) Outreach efforts to encourage the active participation of a broad range of stakeholder groups in the planning process, consistent with the agency's adopted Federal Public Participation Plan, including, but not limited to, affordable housing advocates,

transportation advocates, neighborhood and community groups, environmental advocates, home builder representatives, broad-based business organizations, landowners, commercial property interests, and homeowner associations.

(ii) Consultation with congestion management agencies, transportation agencies, and transportation commissions.

(iii) Workshops throughout the region to provide the public with the information and tools necessary to provide a clear understanding of the issues and policy choices. At least one workshop shall be held in each county in the region. For counties with a population greater than 500,000, at least three workshops shall be held. Each workshop, to the extent practicable, shall include urban simulation computer modeling to create visual representations of the sustainable communities strategy and the alternative planning strategy.

(iv) Preparation and circulation of a draft sustainable communities strategy and an alternative planning strategy, if one is prepared, not less than 55 days before adoption of a final regional transportation plan.

(v) At least three public hearings on the draft sustainable communities strategy in the regional transportation plan and alternative planning strategy, if one is prepared. If the metropolitan transportation organization consists of a single county, at least two public hearings shall be held. To the maximum extent feasible, the hearings shall be in different parts of the region to maximize the opportunity for participation by members of the public throughout the region.

(vi) A process for enabling members of the public to provide a single request to receive notices, information, and updates.

SCS – Spheres of Influence

(G) In preparing a sustainable communities strategy, the metropolitan planning organization shall consider spheres of influence that have been adopted by the local agency formation commissions within its region.

Comparing SCS Reductions to ARB Targets

(H) Prior to adopting a sustainable communities strategy, the metropolitan planning organization shall quantify the reduction in greenhouse gas emissions projected to be achieved by the sustainable communities strategy and set forth the difference, if any, between the amount of that reduction and the target for the region established by the state board.

APS Development

(I) If the sustainable communities strategy, prepared in compliance with subparagraph (B) or (D), is unable to reduce greenhouse gas emissions to achieve the greenhouse gas emission reduction targets established by the state board, the metropolitan planning organization shall prepare an alternative planning strategy to the sustainable communities strategy showing how those greenhouse gas emission targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. The alternative planning strategy shall be a separate document from the regional transportation plan, but it may be adopted concurrently with the regional transportation

plan. In preparing the alternative planning strategy, the metropolitan planning organization:

(i) Shall identify the principal impediments to achieving the targets within the sustainable communities strategy.

(ii) May include an alternative development pattern for the region pursuant to subparagraphs (B) to (G), inclusive.

(iii) Shall describe how the greenhouse gas emission reduction targets would be achieved by the alternative planning strategy, and why the development pattern, measures, and policies in the alternative planning strategy are the most practicable choices for achievement of the greenhouse gas emission reduction targets.

(iv) An alternative development pattern set forth in the alternative planning strategy shall comply with Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal Regulations, except to the extent that compliance will prevent achievement of the greenhouse gas emission reduction targets approved by the state board.

(v) For purposes of the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code), an alternative planning strategy shall not constitute a land use plan, policy, or regulation, and the inconsistency of a project with an alternative planning strategy shall not be a consideration in determining whether a project may have an environmental effect.

MPOs Technical Methodology for Estimating Its Regional GHG Emissions

(J) (i) Prior to starting the public participation process adopted pursuant to subparagraph (F) of paragraph (2) of subdivision (b) of Section 65080, the metropolitan planning organization shall submit a description to the state board of the technical methodology it intends to use to estimate the greenhouse gas emissions from its sustainable communities strategy and, if appropriate, its alternative planning strategy. The state board shall respond to the metropolitan planning organization in a timely manner with written comments about the technical methodology, including specifically describing any aspects of that methodology it concludes will not yield accurate estimates of greenhouse gas emissions, and suggested remedies. The metropolitan planning organization is encouraged to work with the state board until the state board concludes that the technical methodology operates accurately.

ARB Review of the SCS or APS

(ii) After adoption, a metropolitan planning organization shall submit a sustainable communities strategy or an alternative planning strategy, if one has been adopted, to the state board for review, including the quantification of the greenhouse gas emission reductions the strategy would achieve and a description of the technical methodology used to obtain that result. Review by the state board shall be limited to acceptance or rejection of the metropolitan planning organization's determination that the strategy submitted would, if implemented, achieve the greenhouse gas emission reduction targets established by the state board. The state board shall complete its review within 60 days.

(iii) If the state board determines that the strategy submitted would not, if implemented, achieve the greenhouse gas emission reduction targets, the metropolitan planning organization shall revise its strategy or adopt an alternative planning strategy, if not previously adopted, and submit the strategy for review pursuant to clause (ii). At a

minimum, the metropolitan planning organization must obtain state board acceptance that an alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets established for that region by the state board.

Local Land Use Authority

(K) Neither a sustainable communities strategy nor an alternative planning strategy regulates the use of land, nor, except as provided by subparagraph (I), shall either one be subject to any state approval. Nothing in a sustainable communities strategy shall be interpreted as superseding the exercise of the land use authority of cities and counties within the region. Nothing in this section shall be interpreted to limit the state board's authority under any other provision of law. Nothing in this section shall be interpreted to authorize the abrogation of any vested right whether created by statute or by common law. Nothing in this section shall require a city's or county's land use policies and regulations, including its general plan, to be consistent with the regional transportation plan or an alternative planning strategy. Nothing in this section requires a metropolitan planning organization to approve a sustainable communities strategy that would be inconsistent with Part 450 of Title 23 of, or Part 93 of Title 40 of, the Code of Federal Regulations and any administrative guidance under those regulations. Nothing in this section relieves a public or private entity or any person from compliance with any other local, state, or federal law.

Exemption of Transportation Projects - Programming

(L) Nothing in this section requires projects programmed for funding on or before December 31, 2011, to be subject to the provisions of this paragraph if they (i) are contained in the 2007 or 2009 Federal Statewide Transportation Improvement Program, (ii) are funded pursuant to Chapter 12.49 (commencing with Section 8879.20) of Division 1 of Title 2, or (iii) were specifically listed in a ballot measure prior to December 31, 2008, approving a sales tax increase for transportation projects. Nothing in this section shall require a transportation sales tax authority to change the funding allocations approved by the voters for categories of transportation projects in a sales tax measure adopted prior to December 31, 2010. For purposes of this subparagraph, a transportation sales tax authority is a district, as defined in Section 7252 of the Revenue and Taxation Code, that is authorized to impose a sales tax for transportation purposes.

Adoption of RTPs

(M) A metropolitan planning organization, or a regional transportation planning agency not within a metropolitan planning organization, that is required to adopt a regional transportation plan not less than every five years, may elect to adopt the plan not less than every four years. This election shall be made by the board of directors of the metropolitan planning organization or regional transportation planning agency no later than June 1, 2009, or thereafter 54 months prior to the statutory deadline for the adoption of housing elements for the local jurisdictions within the region, after a public hearing at which comments are accepted from members of the public and representatives of cities and counties within the region covered by the metropolitan planning organization or regional transportation planning agency. Notice of the public hearing shall be given to the general public and by mail to cities and counties within the region no later than 30 days prior to

the date of the public hearing. Notice of election shall be promptly given to the Department of Housing and Community Development. The metropolitan planning organization or the regional transportation planning agency shall complete its next regional transportation plan within three years of the notice of election.

San Joaquin Valley – SCS/APS

(N) Two or more of the metropolitan planning organizations for Fresno County, Kern County, Kings County, Madera County, Merced County, San Joaquin County, Stanislaus County, and Tulare County may work together to develop and adopt multiregional goals and policies that may address interregional land use, transportation, economic, air quality, and climate relationships. The participating metropolitan planning organizations may also develop a multiregional sustainable communities strategy, to the extent consistent with federal law, or an alternative planning strategy for adoption by the metropolitan planning organizations. Each participating metropolitan planning organization shall consider any adopted multiregional goals and policies in the development of a sustainable communities strategy and, if applicable, an alternative planning strategy for its region.

RTPs Action Element

(3) An action element that describes the programs and actions necessary to implement the plan and assigns implementation responsibilities. The action element may describe all transportation projects proposed for development during the 20-year or greater life of the plan. The action element shall consider congestion management programming activities carried out within the region.

RTPs Financial Element

(4) (A) A financial element that summarizes the cost of plan implementation constrained by a realistic projection of available revenues. The financial element shall also contain recommendations for allocation of funds. A county transportation commission created pursuant to Section 130000 of the Public Utilities Code shall be responsible for recommending projects to be funded with regional improvement funds, if the project is consistent with the regional transportation plan. The first five years of the financial element shall be based on the five-year estimate of funds developed pursuant to Section 14524. The financial element may recommend the development of specified new sources of revenue, consistent with the policy element and action element.

(B) The financial element of transportation planning agencies with populations that exceed 200,000 persons may include a project cost breakdown for all projects proposed for development during the 20-year life of the plan that includes total expenditures and related percentages of total expenditures for all of the following:

(i) State highway expansion.

(ii) State highway rehabilitation, maintenance, and operations.

(iii) Local road and street expansion.

(iv) Local road and street rehabilitation, maintenance, and operation.

(v) Mass transit, commuter rail, and intercity rail expansion.

(vi) Mass transit, commuter rail, and intercity rail rehabilitation, maintenance, and operations.

(vii) Pedestrian and bicycle facilities.

(viii) Environmental enhancements and mitigation.
(ix) Research and planning.
(x) Other categories.

Incentives to Cities and Counties to Comply for SB 375

(C) The metropolitan planning organization or county transportation agency, whichever entity is appropriate, shall consider financial incentives for cities and counties that have resource areas or farmland, as defined in Section 65080.01, for the purposes of, for example, transportation investments for the preservation and safety of the city street or county road system and farm to market and interconnectivity transportation needs. The metropolitan planning organization or county transportation agency, whichever entity is appropriate, shall also consider financial assistance for counties to address countywide service responsibilities in counties that contribute towards the greenhouse gas emission reduction targets by implementing policies for growth to occur within their cities.

Other Factors of Local Significance

(c) Each transportation planning agency may also include other factors of local significance as an element of the regional transportation plan, including, but not limited to, issues of mobility for specific sectors of the community, including, but not limited to, senior citizens.

RTP Adoption Dates and RTP Guidelines

(d) Except as otherwise provided in this subdivision, each transportation planning agency shall adopt and submit, every four years, an updated regional transportation plan to the California Transportation Commission and the Department of Transportation. A transportation planning agency located in a federally designated air quality attainment area or that does not contain an urbanized area may at its option adopt and submit a regional transportation plan every five years. When applicable, the plan shall be consistent with federal planning and programming requirements and shall conform to the regional transportation plan guidelines adopted by the California Transportation Commission. Prior to adoption of the regional transportation plan, a public hearing shall be held after the giving of notice of the hearing by publication in the affected county or counties pursuant to Section 6061.

Definitions

65080.01. The following definitions apply to terms used in Section 65080:

(a) "Resource areas" include (1) all publicly owned parks and open space; (2) open space or habitat areas protected by natural community conservation plans, habitat conservation plans, and other adopted natural resource protection plans; (3) habitat for species identified as candidate, fully protected, sensitive, or species of special status by local, state, or federal agencies or protected by the federal Endangered Species Act of 1973, the California Endangered Species Act, or the Native Plan Protection Act; (4) lands subject to conservation or agricultural easements for conservation or agricultural purposes by local governments, special districts, or nonprofit 501(c)(3) organizations, areas of the state designated by the State Mining and Geology Board as areas of statewide or regional significance pursuant to Section 2790 of the Public Resources Code, and

lands under Williamson Act contracts; (5) areas designated for open-space or agricultural uses in adopted open-space elements or agricultural elements of the local general plan or by local ordinance; (6) areas containing biological resources as described in Appendix G of the CEQA Guidelines that may be significantly affected by the sustainable communities strategy or the alternative planning strategy; and (7) an area subject to flooding where a development project would not, at the time of development in the judgment of the agency, meet the requirements of the National Flood Insurance Program or where the area is subject to more protective provisions of state law or local ordinance.

(b) "Farmland" means farmland that is outside all existing city spheres of influence or city limits as of January 1, 2008, and is one of the following:

(1) Classified as prime or unique farmland or farmland of statewide importance.

(2) Farmland classified by a local agency in its general plan that meets or exceeds the standards for prime or unique farmland or farmland of statewide importance.

(c) "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

(d) "Consistent" shall have the same meaning as that term is used in Section 134 of Title 23 of the United States Code.

(e) "Internally consistent" means that the contents of the elements of the regional transportation plan must be consistent with each other.

Redesignation of RTPAs

65080.1. Once preparation of a regional transportation plan has been commenced by or on behalf of a designated transportation planning agency, the Secretary of the Business, Transportation and Housing Agency shall not designate a new transportation planning agency pursuant to Section 29532 for all or any part of the geographic area served by the originally designated agency unless he or she first determines that redesignation will not result in the loss to California of any substantial amounts of federal funds.

RTPs - California Coastal Trail

65080.1. Each transportation planning agency designated under Section 29532 or 29532.1 whose jurisdiction includes a portion of the California Coastal Trail, or property designated for the trail, that is located within the coastal zone, as defined in Section 30103 of the Public Resources Code, shall coordinate with the State Coastal Conservancy, the California Coastal Commission, and the Department of Transportation regarding development of the California Coastal Trail, and each transportation planning agency shall include provisions for the California Coastal Trail in its regional plan, under Section 65080.

RTPs – Alternative Planning Scenario

65080.3. (a) Each transportation planning agency with a population that exceeds 200,000 persons may prepare at least one "alternative planning scenario" for presentation to local officials, agency board members, and the public during the development of the triennial regional transportation plan and the hearing required under subdivision (c) of Section 65080.

(b) The alternative planning scenario shall accommodate the same amount of population growth as projected in the plan but shall be based on an alternative that

attempts to reduce the growth in traffic congestion, make more efficient use of existing transportation infrastructure, and reduce the need for costly future public infrastructure.

(c) The alternative planning scenario shall be developed in collaboration with a broad range of public and private stakeholders, including local elected officials, city and county employees, relevant interest groups, and the general public. In developing the scenario, the agency shall consider all of the following:

(1) Increasing housing and commercial development around transit facilities and in close proximity to jobs and commercial activity centers.

(2) Encouraging public transit usage, ridesharing, walking, bicycling, and transportation demand management practices.

(3) Promoting a more efficient mix of current and future job sites, commercial activity centers, and housing opportunities.

(4) Promoting use of urban vacant land and "brownfield" redevelopment.

(5) An economic incentive program that may include measures such as transit vouchers and variable pricing for transportation.

(d) The planning scenario shall be included in a report evaluating all of the following:

(1) The amounts and locations of traffic congestion.

(2) Vehicle miles traveled and the resulting reduction in vehicle emissions.

(3) Estimated percentage share of trips made by each means of travel specified in subparagraph (C) of paragraph (1) of subdivision (b) of Section 65080.

(4) The costs of transportation improvements required to accommodate the population growth in accordance with the alternative scenario.

(5) The economic, social, environmental, regulatory, and institutional barriers to the scenario being achieved.

(e) If the adopted regional transportation plan already achieves one or more of the objectives set forth in subdivision (c), those objectives need not be discussed or evaluated in the alternative planning scenario.

(f) The alternative planning scenario and accompanying report shall not be adopted as part of the regional transportation plan, but it shall be distributed to cities and counties within the region and to other interested parties, and may be a basis for revisions to the transportation projects that will be included in the regional transportation plan.

(g) Nothing in this section grants transportation planning agencies any direct or indirect authority over local land use decisions.

(h) This section does not apply to a transportation plan adopted on or before September 1, 2001, proposed by a transportation planning agency with a population of less than 1,000,000 persons.

Caltrans May Prepare an RTP

65080.5. (a) For each area for which a transportation planning agency is designated under subdivision (c) of Section 29532, or adopts a resolution pursuant to subdivision (c) of Section 65080, the Department of Transportation, in cooperation with the transportation planning agency, and subject to subdivision (e), shall prepare the regional transportation plan, and the updating thereto, for that area and submit it to the governing body or designated policy committee of the transportation planning agency for adoption. Prior to adoption, a public hearing shall be held, after the giving of notice of the hearing by publication in the affected county or counties pursuant to Section 6061. Prior to the

adoption of the regional transportation improvement program by the transportation planning agency if it prepared the program, the transportation planning agency shall consider the relationship between the program and the adopted plan. The adopted plan and program, and the updating thereto, shall be submitted to the California Transportation Commission and the department pursuant to subdivision (b) of Section 65080.

(b) In the case of a transportation planning agency designated under subdivision (c) of Section 29532, the transportation planning agency may prepare the regional transportation plan for the area under its jurisdiction pursuant to this chapter, if the transportation planning agency, prior to July 1, 1978, adopts by resolution a declaration of intention to do so.

(c) In those areas that have a county transportation commission created pursuant to Section 130050 of the Public Utilities Code, the multicounty designated transportation planning agency, as defined in Section 130004 of that code, shall prepare the regional transportation plan and the regional transportation improvement program in consultation with the county transportation commissions.

(d) Any transportation planning agency which did not elect to prepare the initial regional transportation plan for the area under its jurisdiction, may prepare the updated plan if it adopts a resolution of intention to do so at least one year prior to the date when the updated plan is to be submitted to the California Transportation Commission.

(e) If the department prepares or updates a regional transportation improvement program or regional transportation plan, or both, pursuant to this section, the state-local share of funding the preparation or updating of the plan and program shall be calculated on the same basis as though the preparation or updating were to be performed by the transportation planning agency and funded under Sections 99311, 99313, and 99314 of the Public Utilities Code.

Government Code Section 65081

RTPs – Air Carrier Airports

65081.1. (a) After consultation with other regional and local transportation agencies, each transportation planning agency whose planning area includes a primary air carrier airport shall, in conjunction with its preparation of an updated regional transportation plan, include an airport ground access improvement program.

(b) The program shall address the development and extension of mass transit systems, including passenger rail service, major arterial and highway widening and extension projects, and any other ground access improvement projects the planning agency deems appropriate.

(c) Highest consideration shall be given to mass transit for airport access improvement projects in the program.

(d) If federal funds are not available to a transportation planning agency for the costs of preparing or updating an airport ground access improvement program, the agency may charge the operators of primary air carrier airports within its planning area for the direct costs of preparing and updating the program. An airport operator against whom charges are imposed pursuant to this subdivision shall pay the amount of those charges to the transportation planning agency.

MTCs Special Corridors

65081.3. (a) As a part of its adoption of the regional transportation plan, the designated county transportation commission, regional transportation planning agency, or the Metropolitan Transportation Commission may designate special corridors, which may include, but are not limited to, adopted state highway routes, which, in consultation with the Department of Transportation, cities, counties, and transit operators directly impacted by the corridor, are determined to be of statewide or regional priority for long-term right-of-way preservation.

(b) Prior to designating a corridor for priority acquisition, the regional transportation planning agency shall do all of the following:

(1) Establish geographic boundaries for the proposed corridor.

(2) Complete a traffic survey, including a preliminary recommendation for transportation modal split, which generally describes the traffic and air quality impacts of the proposed corridor.

(3) Consider the widest feasible range of possible transportation facilities that could be located in the corridor and the major environmental impacts they may cause to assist in making the corridor more environmentally sensitive and, in the long term, a more viable site for needed transportation improvements.

(c) A designated corridor of statewide or regional priority shall be specifically considered in the certified environmental impact report completed for the adopted regional transportation plan required by the California Environmental Quality Act, which shall include a review of the environmental impacts of the possible transportation facilities which may be located in the corridor. The environmental impact report shall include a survey within the corridor boundaries to determine if there exist any of the following:

(1) Rare or endangered plant or animal species.

(2) Historical or cultural sites of major significance.

(3) Wetlands, vernal pools, or other naturally occurring features.

RTPAs/MPOs Designation of Corridors for Priority Acquisition

(d) The regional transportation planning agency shall designate a corridor for priority acquisition only if, after a public hearing, it finds that the range of potential transportation facilities to be located in the corridor can be constructed in a manner which will avoid or mitigate significant environmental impacts or values identified in subdivision (c), consistent with the California Environmental Quality Act and the state and federal Endangered Species Acts.

(e) Notwithstanding any other provision of this section, a corridor of statewide or regional priority may be designated as part of the regional transportation plan only if it has previously been specifically defined in the plan required pursuant to Section 134 and is consistent with the plan required pursuant to Section 135 of Title 23 of the United States Code.

Government Code Section 65588

RTP Updates and Housing Element Revisions

65588. (a) Each local government shall review its housing element as frequently as appropriate to evaluate all of the following:

(1) The appropriateness of the housing goals, objectives, and policies in contributing to the attainment of the state housing goal.

(2) The effectiveness of the housing element in attainment of the community's housing goals and objectives.

(3) The progress of the city, county, or city and county in implementation of the housing element.

(b) The housing element shall be revised as appropriate, but no less often than required by subdivision (e), to reflect the results of this periodic review. Nothing in this section shall be construed to excuse the obligations of the local government to adopt a revised housing element in accordance with the schedule specified in this section.

(c) The review and revision of housing elements required by this section shall take into account any low- or moderate-income housing provided or required pursuant to Section 65590.

(d) The review pursuant to subdivision (c) shall include, but need not be limited to, the following:

(1) The number of new housing units approved for construction within the coastal zone after January 1, 1982.

(2) The number of housing units for persons and families of low or moderate income, as defined in Section 50093 of the Health and Safety Code, required to be provided in new housing developments either within the coastal zone or within three miles of the coastal zone pursuant to Section 65590.

(3) The number of existing residential dwelling units occupied by persons and families of low or moderate income, as defined in Section 50093 of the Health and Safety Code, that have been authorized to be demolished or converted since January 1, 1982, in the coastal zone.

(4) The number of residential dwelling units for persons and families of low or moderate income, as defined in Section 50093 of the Health and Safety Code, that have been required for replacement or authorized to be converted or demolished as identified in paragraph (3). The location of the replacement units, either onsite, elsewhere within the locality's jurisdiction within the coastal zone, or within three miles of the coastal zone within the locality's jurisdiction, shall be designated in the review.

(e) Each city, county, and city and county shall revise its housing element according to the following schedule:

(1) (A) Local governments within the regional jurisdiction of the Southern California Association of Governments: June 30, 2006, for the fourth revision.

(B) Local governments within the regional jurisdiction of the Association of Bay Area Governments: June 30, 2007, for the fourth revision.

(C) Local governments within the regional jurisdiction of the Council of Fresno County Governments, the Kern County Council of Governments, and the Sacramento Area Council of Governments: June 30, 2002, for the third revision, and June 30, 2008, for the fourth revision.

(D) Local governments within the regional jurisdiction of the Association of Monterey Bay Area Governments: December 31, 2002, for the third revision, and June 30, 2009, for the fourth revision.

(E) Local governments within the regional jurisdiction of the San Diego Association of Governments: June 30, 2005, for the fourth revision.

(F) All other local governments: December 31, 2003, for the third revision, and June 30, 2009, for the fourth revision.

(2) (A) All local governments within a metropolitan planning organization in a region classified as nonattainment for one or more pollutants regulated by the federal Clean Air Act (42 U.S.C. Sec. 7506), except those within the regional jurisdiction of the San Diego Association of Governments, shall adopt the fifth revision of the housing element no later than 18 months after adoption of the first regional transportation plan to be adopted after September 30, 2010.

(B) (i) All local governments within the regional jurisdiction of the San Diego Association of Governments shall adopt the fifth revision of the housing element no later than 18 months after adoption of the first regional transportation plan update to be adopted after September 30, 2010.

(ii) Prior to or concurrent with the adoption of the fifth revision of the housing element, each local government within the regional jurisdiction of the San Diego Association of Governments shall identify adequate sites in its inventory pursuant to Section 65583.2 or rezone adequate sites to accommodate a prorated portion of its share of the regional housing need for the projection period representing the period from July 1, 2010, to the deadline for housing element adoption described in clause (i).

(I) For the fifth revision, a local government within the jurisdiction of the San Diego Association of Governments that has not adopted a housing element for the fourth revision by January 1, 2009, shall revise its housing element not less than every four years, beginning on the date described in clause (i), in accordance with paragraph (4), unless the local government does both of the following:

(ia) Adopts a housing element for the fourth revision no later than March 31, 2010, which is in substantial compliance with this article.

(ib) Completes any rezoning contained in the housing element program for the fourth revision by June 30, 2010.

(II) For the sixth and subsequent revisions, a local government within the jurisdiction of the San Diego Association of Governments shall be subject to the dates described in clause (i), in accordance with paragraph (4).

(C) All local governments within the regional jurisdiction of a metropolitan planning organization or a regional transportation planning agency that has made an election pursuant to subparagraph (L) of paragraph (2) of subdivision (b) of Section 65080 by June 1, 2009, shall adopt the fifth revision of the housing element no later than 18 months after adoption of the first regional transportation plan update following the election.

(D) All other local governments shall adopt the fifth revision of the housing element five years after the date specified in paragraph (1).

(3) Subsequent revisions of the housing element shall be due as follows:

(A) For local governments described in subparagraphs (A), (B), and (C) of paragraph (2), 18 months after adoption of every second regional transportation plan update,

provided that the deadline for adoption is no more than eight years later than the deadline for adoption of the previous eight-year housing element.

(B) For all other local governments, at five-year intervals after the date specified in subparagraph (D) of paragraph (2).

(C) If a metropolitan planning organization or a regional transportation planning agency subject to the five-year revision interval in subparagraph (B) makes an election pursuant to subparagraph (L) of paragraph (2) of subdivision (b) of Section 65080 after June 1, 2009, all local governments within the regional jurisdiction of that entity shall adopt the next housing element revision no later than 18 months after adoption of the first regional transportation plan update following the election. Subsequent revisions shall be due 18 months after adoption of every second regional transportation plan update, provided that the deadline for adoption is no more than eight years later than the deadline for adoption of the previous eight-year housing element.

(4) (A) A local government that does not adopt a housing element within 120 days of the applicable deadline described in subparagraph (A), (B), or (C) of paragraph (2) or subparagraph (A) or (C) of paragraph (3) shall revise its housing element not less than every four years until the local government has adopted at least two consecutive revisions by the statutory deadline.

(B) If necessary, the local government shall adopt three consecutive four-year revisions by the statutory deadline to ensure that when the local government adopts its next housing element covering an eight-year planning period, it does so at the deadline for adoption for other local governments within the region also covering an eight-year planning period.

(C) The deadline for adoption of every second four-year revision shall be the same as the deadline for adoption for other local governments within the region.

(5) The metropolitan planning organization or a regional transportation planning agency for a region that has an eight-year revision interval pursuant to paragraph (3) shall notify the department and the Department of Transportation in writing of the estimated adoption date for its next regional transportation plan update at least 12 months prior to the estimated adoption date. The Department of Transportation shall maintain and publish on its Internet Web site a current schedule of the estimated regional transportation plan adoption dates. The department shall maintain and publish on its Internet Web site a current schedule of the estimated and actual housing element due dates. Each council of governments shall publish on its Internet Web site the estimated and actual housing element due dates, as published by the department, for the jurisdictions within its region and shall send notice of these dates to interested parties. For purposes of determining the existing and projected need for housing within a region pursuant to Sections 65584 to 65584.08, inclusive, the date of the next scheduled revision of the housing element shall be deemed to be the estimated adoption date of the regional transportation plan update described in the notice provided to the Department of Transportation plus 18 months.

(6) The new projection period shall begin on the date of December 31 or June 30 that most closely precedes the end of the previous projection period.

Definitions

(f) For purposes of this article, the following terms have the following meanings:

(1) “Planning period” shall be the time period between the due date for one housing element and the due date for the next housing element.

(2) “Projection period” shall be the time period for which the regional housing need is calculated.

(g) For purposes of this section, “regional transportation plan update” shall mean a regional transportation plan adopted to satisfy the requirements of subdivision (d) of Section 65080.

Sustainable Communities and Climate Protection Act

Chapter 728 of the Statutes of 2008 shall be known and may be cited as the Sustainable Communities and Climate Protection Act.

Appendix H

ALTERNATIVE PLANNING STRATEGY (APS)

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Appendix H

Alternative Planning Strategy

Background

California Government Code Section 65080(H) states MPOs shall prepare an APS if the MPO determines the region will not be able to achieve ARB's regional GHG emission reduction targets through the sustainable communities strategy (SCS). It should be noted that an SCS must be prepared as part of the RTP - regardless if the MPO can achieve the regional GHG emission reduction target or not. The APS however is not a part of an RTP.

APS Statutory Language

Below is the specific statutory language from California Government Code Section 65080(H) relating to the preparation of an APS:

> Calif. Government Code Section 65080(H)
> (H) If the sustainable communities strategy, prepared in compliance with subparagraph (B) or (C), is unable to reduce greenhouse gas emissions to achieve the greenhouse gas emission reduction targets established by the state board, the metropolitan planning organization shall prepare an alternative planning strategy to the sustainable communities strategy showing how those greenhouse gas emission targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. The alternative planning strategy shall be a separate document from the regional transportation plan, but it may be adopted concurrently with the regional transportation plan. In preparing the alternative planning strategy, the metropolitan planning organization:
>
> (i) Shall identify the principal impediments to achieving the targets within the sustainable communities strategy.
> (ii) May include an alternative development pattern for the region pursuant to subparagraphs (B) to (F), inclusive.
> (iii) Shall describe how the greenhouse gas emission reduction targets would be achieved by the alternative planning strategy, and why the development pattern, measures, and policies in the alternative planning strategy are the most practicable choices for achievement of the greenhouse gas emission reduction targets.
> (iv) An alternative development pattern set forth in the alternative planning strategy shall comply with Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal Regulations, except to the extent that compliance will prevent achievement of the greenhouse gas emission reduction targets approved by the state board.
> (v) For purposes of the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code), an alternative planning strategy shall not constitute a land use plan, policy, or regulation, and the inconsistency of a project with an alternative planning strategy shall not be a consideration in determining whether a project may have an environmental effect.

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Appendix I

LAND USE AND TRANSPORTATION STRATEGIES TO REDUCE REGIONAL GREENHOUSE GAS EMISSIONS

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Appendix I

Land Use and Transportation Strategies to Address Regional Greenhouse Gas Emissions in the RTP

RTPAs and MPOs are not limited to specific land use and transportation strategies to reduce greenhouse gas emissions. Each RTPA and MPO is encouraged to consider and incorporate those strategies that are likely to provide the greatest level of greenhouse gas emissions reduction considering feasibility of implementation as well as the unique characteristics and needs within the region.

This Appendix provides several, but not a complete list of many and varied resources currently available to promote reductions in greenhouse gas emissions. RTPAs and MPOs are encouraged to connect and consult these resources as appropriate for their region. Section 6.27 provides a brief overview of what is available to RTPAs and MPOs through the various links to the Best Practices within this Appendix.

Pricing Strategies

(Local/State Legislation is required to implement various pricing strategies and should be researched prior to incorporating into the RTP development process)

Pricing strategies are suggested to encourage reduced driving to reduce GHG emissions, and include, but are not limited to:

1. Using alternative mode programs, congestion pricing, toll roads, and parking pricing strategies.
Examples are:

i. Road pricing and High Occupancy Toll (HOT) lanes. To reduce VMT, MPOs should model adding pricing to existing lanes, not just as a means for additional expansion. Variable/congestion pricing should be considered.
ii. User fees such as fuel taxes and parking charges.
iii. Free or reduced fare transit fares.
iv. Expansion of Parking Cash-Out Programs.
v. Strategies to reduce the impacts of pricing strategies on low-income individuals.
vi. Improve the cost-efficiency of transit investments and transit operations.

2. Consider utilizing revenues from these pricing strategies for projects, such as mass transit, that improve mobility without increasing VMT or GHG emissions.

Road pricing can be found at:

"Opportunities to Improve Air Quality through Transportation Pricing Programs", U.S. Environmental Protection Agency, September 1997.
http://www.epa.gov/oms/market/pricing.pdf

"Sacramento Transportation & Air Quality Collaborative Final Report, Volume III: Supplemental Text for Agreements", December 2005.
http://www.sacta.org/pdf/STAQC/FinalReportIII.pdf

Transportation Planning and Investment Strategies:

1. Consider shifting transportation investments towards improving and expanding urban and suburban core transit, programs for walkability, bicycling and other alternative modes, transit access, housing near transit, and local blueprint plans that coincide with the regional blueprint and the SCS.

2. Provide funds and technical assistance to local agencies to implement blueprint strategies and the SCS.

3. Implement operational efficiencies that reduce congestion in vehicle throughput on roadways or improve transit access or other alternative access without physical expansion of the roadways.

4. Consider consulting with school districts on the regional land use plan to facilitate coordination between school siting and other land uses. This coordination could effectively reduce driving in the region.

5. For purposes of allocating transportation investments, recognize the rural contribution towards GHG reduction for counties that have policies that support development within their cities, and protect agriculture and resource lands. Consideration should be given to jurisdictions that contribute towards these goals for projects that reduce GHG or are GHG neutral, such as safety, rehabilitation, connectivity and for alternative modes.

6. In setting priorities, consider transportation projects that increase efficiency, connectivity and/or accessibility or provide other means to reduce GHG.

Land Use Strategies that Can Help Reduce Rates of VMT and Per Person Household Greenhouse Gas (GHG) Emissions

(Strategies incorporating the "D factors" - Professor Robert Cervero research)

There have been various studies and research conducted on land use and transportation strategies regarding travel that reduces driving by walking, biking, and transit use. Some of this research is known as the "Ds factors" as the variables can be described as Density, land use; Diversity, pedestrian-scale; Design, access to regional Destinations, and Distance to transit.

Professor Robert Cervero's research efforts found that certain neighborhood characteristics significantly affect the amounts and modes of travel by residents, customers and employees.

Land use strategies that typically incorporate some or all of these "D factors" include: urban and suburban infill, clustered development, mixed land uses, New Urbanist design, transit-oriented development, and other "smart-growth" strategies. When combined with good pedestrian and bicycle facilities and transit service, such strategies can contribute to a significant reduction in per household levels of GHG emissions (Reid

Ewing, Keith Bartholomew, Steve Winkelman, Jerry Walters, and Don Chen, **Growing Cooler** – The Evidence on Urban Development and Climate Change, for the Urban Land Institute, 2008.)

The Ds are Destination (proximity), Density (or clustered development), Diversity (or mixture of land uses), Distance to transit, Design, and Development scale.

Transportation Demand Management (TDM)

The Victoria Transport Policy Institute at http://www.vtpi.org/tdm/index.php contains an Encyclopedia that is a comprehensive source of information about innovative management solutions to transportation problems. It provides detailed information on various demand management strategies, plus general information on TDM planning and evaluation techniques. It is produced by the Victoria Transport Policy Institute to increase understanding and implementation of TDM.

For example, TDM-related chapters include:

- Incentives to Use Alternative Modes and Reduce Driving
- Parking and Land Use Management
- TDM Programs and Program Support
- TDM Planning and Evaluation

RTP policies that support Smart Growth Land Use principles

Metropolitan Transportation Commission's Best Practice Examples related to strategies 1. and 2. listed below:

MTC's T2035 Plan called for modifying our Transportation for Livable Communities (TLC) program to support Priority Development Areas which were identified as a part of FOCUS, the Bay Area's blueprint planning process. The TLC program offers capital grants to cities, counties, and transit agencies to construct projects that support compact development near transit. See:

http://apps.mtc.ca.gov/meeting.packet.documents/agenda.1343/TLC.Guidelines.Final.v1.pdf

MTC's Resolution 3434 TOD Policy ties regional discretionary funds for new transit extension projects (funded via Resolution 3434) to supportive land uses. This policy establishes targets for new housing units in each transit corridor and calls for station area plans and corridor working groups to help achieve the housing targets. Station area plans to meet the housing targets must be adopted by local municipalities prior to receiving MTC discretionary funding for construction of Resolution 3434 funds. See:

http://www.mtc.ca.gov/planning/smart.growth/tod/TOD.policy.pdf

As MPOs and RTPAs work towards achieving better linkages between land use and transportation planning within their regions, both MPOs and RTPAs are highly encouraged to include within their Policy Element the following:

1. Develop investments and programs that support local jurisdictions that make land use decisions that implement as appropriate, the SCS, regional blueprints, and other strategies that will help reduce greenhouse gas emissions and improve the quality of mobility throughout the region.
2. Emphasize transportation investments in areas where forecasted development patterns indicated may result in regional greenhouse gas emissions reduction.

Additional Best Practices:

Parking Strategies:
http://info.sen.ca.gov/pub/gov/pub/09-10/bill/sen/sb_0501-005/sb_518_bill_20090528_amended_sen_v95.pdf

Attorney General list of mitigation measures:
http://ag.ca.gov/global.warming/pdf/GW_mitigation_measure.pdf

CAPCOA CEQA and Climate Change paper:
http://www.capcoa.org/CEQA/CAPCOA%20White%20Paper.pdf

US EPA highlighted case studies for Smart Growth illustrated through open space, mixed land use and transportation choices are available at:

http://www.epa.gov/dced/case.htm

In the Bay Area, the Metropolitan Transportation Commission (MTC) has worked with local governments to develop the Bay Area Vision program through which local governments submit the geographic location of their priority areas for development as well as their priority areas for conservation. More information regarding the prioritization of development and conservation areas in the San Francisco region is available at:

http://www.bayareavision.org/initiatives/prioritydevelopmentareas.html

Appendix J

RHNA AND RTP DEVELOPMENT INFORMATION

The following table was prepared by the California Department of Housing and Community Development (HCD). Questions regarding the RHNA process should be directed to HCD using the contact information located at:

http://hcd.ca.gov/contact.html

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RHNA/Housing Element & RTP Statutory Process Timelines

Regional Housing Need Allocation (RHNA)	Regional Transportation Plan (RTP) (w/Sustainable Communities Strategy - SCS)
A. METHODOLOGY DEVELOPMENT 1. COG develops distribution methodology: at least 24 mos. before HE adoption (with 60-day public comment period) 2. COG adopts the final RHNA methodology **B. REGIONAL DETERMINATION** *(Deadline to create Subregional Entity/COG notification: 28 mos.before HE adoption)* 3. HCD and COG consult; **HCD issues regional determination:** 24 mos. before HE adoption (or 26 mos. for COGs w/subregional delegation option) *(Allocation to subregions: 25 mos. before HE adoption)* **C. COG ISSUES DRAFT ALLOCATIONS** 4. **COG issues Draft Allocations of regional determination** consistent with development pattern of SCS**:** *at least* 18 mos. before HE adoption due date (before RTP adoption) 5. Local Jurisdictions may request revision of Draft Allocation: Within 60 days following receipt of the Draft Allocation 6. COG responds to requests for revision of Draft Allocation: Within 60 days of requested revision **D. LOCAL APPEALS PROCESS** 7. Jurisdictions may appeal Draft RHNA: 60 days after the date established to hear appeals 8. COG reviews and responds to appeal requests (within 45 days after appeal hearing) 9. **COG issues proposed Final RHNA,** with SCS development pattern consistency findings; adopts within 45 days after completion of 60 day appeal period, inclusive of public hearing **E. HCD REVIEW AND APPROVAL** 10. **Review of Final RHNA by HCD:** within 60 days of receipt of COG's Final RHNA Plan (*HCD may revise COG's RHNA Plan if not consistent with initial regional determination)*	*(Regional variations exist for SJV, ABAG-MTC & for SCAG, and for congestion management agency-subregional processes)* 1. MPO gathers data, develops models, begins update of regional growth forecast 2. MPO adopts public participation plan for SCS and possibly an APS 3. Prior to public participation process, MPO submits proposed methodology for estimating GHG reduction from its SCS (and APS if desired) to ARB for review and comment 4. MPO conducts outreach & public workshops, at least 1-3 workshops per county 5. MPO conducts inter-agency consultation pursuant to federal conformity requirements **6. MPO prepares draft SCS which must accommodate HCD's regional determination** 7. Draft EIR/RTP is prepared & reviewed by the public and agencies for comment *MPO must issue Draft SCS not less than 55 days before RTP adoption; must hold at least 2 if a single-county or 3- if a multi-county, public hearings on SCS* 8. MPO makes any revisions to Draft SCS/responds to DEIR comments 9. MPO Certifies EIR & Adopts RTP within either 4 years of its prior conformity date, or 5 yrs. of its prior adoption date if attainment MPO 10. MPO submits RTP to FHWA/FTA for conformity 11. After adoption, MPO submits SCS for review to ARB. ARB has 60 days to accept or reject the MPO's determination that their strategy, if implemented, will achieve their region's GHG target ********** *For non-attainment regions, subsequent SCS (4 yrs. hence) must integrate with prior RHNA, as new RHNA to be determined only for one of two RTP updates within 8 yrs.*
Housing Element Adoption: within 18 mos. *after RTP is adopted*; must be adopted w/in 120 days of due date to avoid a 4-yr. update cycle. HCD 1.14.10	*If approved by FHWA, FTA & EPA, federal approval starts RTP update clock for non-attainment MPOs: RTP must be updated within 4 years*

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Appendix K

Glossary of Transportation Terms

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APCD	Air Pollution Control District, a county agency that adopts regulations to meet State and Federal air quality standards.
AQMD	Air Quality Management District, a regional agency formed by 2 or more counties, which adopts regulations to meet State and Federal air quality standards.
ATTAINMENT AREA	Attainment Area, is any geographic area in which levels of a given criteria air pollutant (e.g., ozone, carbon monoxide, PM10, PM2.5, and nitrogen dioxide) meet the health-based National Ambient Air Quality Standards (NAAQS) for that pollutant. An area may be an attainment area for one pollutant and a nonattainment area for others. A "maintenance area" (see definition below) is not considered an attainment area for transportation planning purposes.
BLUEPRINT PLANNING	Blueprint Planning, is a Caltrans sponsored voluntary discretionary competitive grant program designed to assist MPOs in developing a regional vision that considers transportation, land use, housing, environmental protection, economic development and equity.
CAPACITY	Capacity, is a transportation facility's ability to accommodate a moving stream of people or vehicles in a given time period.
CARB	California Air Resources Board, the State agency responsible for implementation of the Federal and State Clean Air Acts. Provides technical assistance to air districts preparing attainment plans; reviews local attainment plans and combines portions of them with State measures for submittal of the State Implementation Plan (SIP) to U.S. EPA.
CASP	California Aviation System Plan, prepared by Caltrans Division of Aeronautics every five years as required by PUC Section 21701. The CASP integrates regional aviation system planning on a Statewide basis.
CEQA	California Environmental Quality Act, State law that requires the environmental effects associated with proposed plans, programs and projects to be fully disclosed.
CMA	Congestion Management Agency, the county agency responsible for developing, coordinating and monitoring the Congestion Management Program.
CMP	Congestion Management Program is a countywide integrated program that addresses congestion in a coordinated and

cooperative manner. The program contains 5 elements: a Level of Service element, a transit standards element, a TDM and trip reduction element, a land use analysis element, and a capitol improvement program element. To effectively address this goal, the appropriate land use, transportation and air quality agencies need to integrate their planning processes, share information and respond to congestion using a coordinated approach. In 1996 AB 2419 amended government code section 65088.3 to allow counties to opt out of this previously mandatory program.

CTC California Transportation Commission, a decision making body established by AB 402(Alquist / Ingalls) of 1977 to advise and assist the Secretary of Transportation and the legislature in formulating and evaluating State policies and plans for transportation programs.

CTP California Transportation Plan, The CTP is a long-range transportation policy plan that is submitted to the Governor. The CTP is developed in collaboration with partners, presents a vision for California's future transportation system, and defines goals, policies, and strategies to reach the vision. It is developed in consultation with the State's regional transportation planning agencies, is influenced by the regional planning process, and provides guidance for developing future RTPs. RTPs should be consistent with and implement the vision and goals of the CTP. As defined by State statute, the CTP is not project specific.

DSMP District System Management Plan, a District's long-range plan for management of the State highway transportation system in its jurisdiction.

FAA Federal Aviation Administration, the agency of the U.S. Department of Transportation charged with regulating air commerce to promote its safety and development, encouraging and developing civil aviation, air traffic control and air navigation, and promoting the development of the national airport system.

EMISSIONS BUDGET Emissions Budget, is the part of the State Implementation Plan (SIP) that identifies the allowable emissions levels, mandated by the National Ambient Air Quality Standards (NAAQS), for certain pollutants from mobile, stationary, and area sources. The emissions levels are used for meeting emission reduction milestones.

FHWA Federal Highway Administration, a component of the U.S. Department of Transportation, established to ensure development of an effective national road and highway transportation system. FHWA and FTA, in consultation with US EPA, make Federal Clean Air Act Conformity findings for

Regional Transportation Plans, Transportation Improvement Programs, and Federally funded projects.

FISCAL CONSTRAINT

Fiscal constraint, the metropolitan transportation plan, TIP, and STIP includes sufficient financial information for demonstrating that projects in the metropolitan transportation plan, TIP, and STIP can be implemented using committed, available, or reasonably available revenue sources, with reasonable assurance that the Federally supported transportation system is being adequately operated and maintained. For the TIP and the STIP, financial constraint/fiscal constraint applies to each program year. Additionally, projects in air quality nonattainment and maintenance areas can be included in the first two years of the TIP and STIP only if funds are ‘‘available’’ or ‘‘committed.’’

FTA

Federal Transit Administration, a component of the U.S. Department of Transportation, responsible for administering the Federal transit program under the Federal Transit Act, as amended, and SAFETEA-LU.

FSTIP

Federal State Transportation Improvement Program is a multi-year Statewide, financially constrained, intermodal program of projects that is consistent with the Statewide transportation plan (CTP) and regional transportation plans (RTPs). The FSTIP is developed by the California Department of Transportation and incorporates all of the MPOs *and* RTPAs FTIPs by reference. Caltrans then submits the FSTIP to FHWA.

FTIP

Federal Transportation Improvement Program is a constrained 4-year prioritized list of all transportation projects that are proposed for *Federal and local* funding. The FTIP is developed and adopted by the MPO/RTPA and is updated every 2 years. It is consistent with the RTP and it is required as a prerequisite for Federal funding.

IIP

Interregional Improvement Program is one of two component funding source programs that ultimately make up the State Transportation Improvement program. The IIP receives 25% of the funds from the State Highway account. The IIP is the source of funding for the ITIP.

ILLUSTRATIVE PROJECT

An illustrative project means an additional transportation project that may (but is not required to)be included in a financial plan for the RTP or FTIP if reasonable additional resources were to become available.

INTERMODAL

Intermodal refers to the connections between modes of transportation.

ITIP

Interregional Transportation Improvement Program is a Statewide program of projects, developed by Caltrans for interregional projects that are primarily located outside of urbanized areas. The ITIP has a 4-year planning horizon and is updated every two years. It is submitted to the CTC along with the FTIP and taken together they are known as the STIP.

ITS

Intelligent Transportation Systems are electronics, photonics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

ITSP

Interregional Transportation Strategic Plan describes the framework in which the State will carry out its responsibilities for the Interregional Transportation Improvement Program (ITIP).

MIS

Major Investment Study was a Federally mandated study required for major transportation improvements under ISTEA. An MIS was a planning analysis done on a corridor or sub-regional area that included social, economic and environmental considerations early in the planning process and integrated these considerations into the project development stage. Although SAFETEA-LU has deleted this requirement, Section 450.318(a) and Appendix A retains the option to link early environmental considerations in the RTP to the subsequent project specific environmental review that takes place during the project delivery process.

MODE

Mode is a specific form of transportation, such as automobiles, buses, trains or planes.

MPO

Metropolitan Planning Organization, a planning organization created by Federal legislation charged with conducting regional transportation planning to meet Federal mandates.

NATIONAL AMBIENT AIR QUALITY STANDARDS

NAAQS are the acceptable limits that are set for various pollutants by the US EPA. Air quality standards have been established for the following six criteria pollutants: ozone, carbon monoxide, particulate matter, nitrogen dioxide, lead and sulfur dioxide.

NEPA

National Environmental Policy Act is Federal legislation that created a national policy and procedures that require Federal agencies to consider the environmental effects of their actions and to inform the public that their decisions reflect this environmental consideration. NEPA applies to most

transportation projects because they are jointly funded with a combination of Federal, State and sometimes local money.

NONATTAINMENT Nonattainment, any geographic region of the United States that has been designated by the EPA as a nonattainment area under section 107 of the Clean Air Act for any pollutants for which an NAAQS exists.

PERFORMANCE MEASURES Performance measures are indicators of how well the transportation system is performing with regard to such things as average speed, reliability of travel and collision rates. They are used as feedback in the transportation planning and decision-making process.

RIP Regional Improvement Program is one of two component funding source programs that ultimately make up the State Transportation Improvement program. The RIP receives 75% of the funds from the State Highway account. This 75% is then distributed to the MPOs and RTPAs by a formula. The RIP is the source of funding for the FTIP.

RTIP Regional Transportation Improvement Program, is a synonym for the FTIP and it refers to the programming done by the MPO/RTPA as part of the development of the RTP.

RTP Regional Transportation Plan, a Federal and State mandated planning document prepared by MPOs and RTPAs. The plan describes existing and projected transportation needs, conditions and financing affecting all modes within a 20-year horizon.

RTPA Regional Transportation Planning Agency, a State designated single or multi-county agency responsible for regional transportation planning. RTPAs are also known as Local Transportation Commissions or Councils of Governments and are usually located in rural or exurban areas.

SHA State Highway Account, the SHA account is the State's primary source of funding for transportation improvements. The SHA account is composed of revenues from the State's gasoline and diesel fuel tax, truck weight fees and Federal highway funds. The SHA is primarily used for STIP, SHOPP and local assistance projects as well as non-capitol projects such as maintenance, operations, and support.

SHOPP State Highway Operations and Protection Program is a legislatively created program to maintain the integrity of the State highway system. It is tapped for safety and rehabilitation projects. SHOPP is a multi-year program of projects approved by the Legislature and Governor. It is separate from the STIP.

SIP	State Implementation Plan, as defined in section 302(q) of the Clean Air Act (CAA), the portion (or portions) of the implementation plan, or most recent revision thereof, which has been approved under section 110 of the CAA, or promulgated under section 110(c) of the CAA, or promulgated or approved pursuant to regulations promulgated under section 301(d) of the CAA and which implements the relevant requirements of the CAA.
SMART GROWTH	Smart Growth, is a set of policies designed by local governments to protect, preserve and economically develop established communities as well as natural and cultural resources. Smart growth encompasses a holistic view of development.
SPRAWL	Sprawl is an urban form based on the movement of people from the central city to the suburbs. Concerns associated with sprawl include loss of farmland and open space due to low-density land development, increased public service costs including transportation, and environmental degradation.
STIP	State Transportation Improvement Program, a Statewide or bundled prioritized list of transportation projects covering a period of four years that is consistent with the long-range Statewide transportation plan, metropolitan transportation plans and FTIPs, and required for projects to be eligible for funding under Title 23 U.S.C. and title 49 U.S.C. Chapter 53.
TCM	Transportation Control Measures, any measure that is specifically identified and committed to in the applicable SIP that is either one of the types listed in section 108 of the Clean Air Act or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the above, vehicle technology-based, fuel-based, and maintenance-based measures that control the emissions from vehicles under fixed traffic conditions are not TCMs.
TIERING	Section 15385 of the CEQA guidelines defines tiering as the coverage of general matters in broader EIRs with subsequent narrower EIRs incorporating by reference the general discussions and concentrating solely on the issue specific to the EIR that is being subsequently prepared. Tiering allows agencies to deal with broad environmental issues in EIRs at the planning stage and then to provide a more detailed examination of specific effects in EIRs for later development projects that are consistent with or that implement the plan.
TITLE VI	Title VI of the Civil Rights Act of 1964, prohibits discrimination in any program or project receiving Federal financial assistance.

TDM	Transportation Demand Management refers to policies, programs and actions that (1) decrease the demand on the highway system and (2) encourage the shifting or spreading out of peak hour travel periods.
TSM	Transportation System Management refers to the use of relatively inexpensive transportation improvements that are used to increase the efficiency of transportation facilities. TSM can include carpool and vanpool programs, parking management, traffic flow improvements, high occupancy vehicle lanes, and park-and-ride lots.
U.S. EPA	United States Environmental Protection Agency is the Federal agency that approves the SIP and the emissions budgets that are the basis of the RTP conformity assessments.

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Appendix L

AB 441 - Promoting Health and Health Equity in MPO RTPs

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ADD INTRODUCTION

- Background on AB 441
- Purpose of Appendix L

Monterey Bay 2035: Moving Forward

The Association of Monterey Bay Area Governments' (AMBAG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) *Monterey Bay 2035: Moving Forward* is a major change in the approach taken towards Health and Health Equality, compared to previous plans, putting more emphasis on Active Transportation as a way to create healthy equitable communities. Monterey Bay 2035 recognizes the impact that transportation and land use decisions have on the health of the region's residents. This plan seeks to promote active transportation options, and a decrease in bicycle and pedestrian injuries through increased funding of active transportation facilities. This can be seen in spending 12% in available revenues ($898 million) on Active Transportation projects this time around compared to less than 1% last time.

Two of the overarching goals of Monterey Bay 2035 are *Healthy Communities* and *Social Equity*. *Healthy Communities* protect the health of our residents; foster efficient development patterns that optimize travel, housing, and employment choices and encourage active transportation; while, *Social Equity* provides an equitable level of transportation services to all segments of the population.

For more information on the 2035 MTP/SCS, please go to:

http://www.ambag.org/programs-services/planning/metro-transport-plan/Moving-Forward-2035-Monterey-Bay

Implementing Safe Routes to School Programs	*Summary*
Invest in safe bicycle and pedestrian routes that improve connectivity and access to common destinations, such as connections between residential areas and schools.	AMBAG's 2035 MTP/SCS seeks to promote active transportation options, and a decrease in bicycle and pedestrian injuries through increased funding of active transportation facilities. This can be seen in spending 12% in available revenues ($898 million) on Active Transportation projects including the majority to serve local communities, schools, businesses and homes.
Multiuse Recreational Trails	*Summary*
The Monterey Bay Sanctuary Scenic Trail (MBSST)	The MBSST is planned to be a multiuse and interpretative pathway that links the existing and newly established trail segments into a continuous coastal trail around the Monterey Bay. The approximately 110 mile coastal trail corridor provides access along Monterey Bay from Santa Cruz to Monterey. Sections of the MBSST will be included in the California Coastal Trail, a 1,200 mile hike which will eventually extend the entire length of California.

Pedestrian and Bicyclist Pathways	*Summary*
Pedestrian Pathways	Pedestrian facilities including sidewalks, streets, and trails are fundamental to the functioning of the Monterey Bay Area neighborhoods. Cities that promote walking in all its forms are promoting healthy neighborhoods and communities. Local jurisdictions are working to achieve an effective pedestrian network by implementing pedestrian infrastructure improvements in conjunction with new and redeveloped streets, and working closely with the public to identify where existing gaps in pedestrian facilities exist.
Bicycle Pathways	• Continue to improve the Bicycle Model tool and Live Maps as well as make available other data products that will help to assist local jurisdictions in the development of bicycle networks that have better connectivity and meet the origin and destination needs of the community • A considerable bicycle network exists, particularly in the urbanized portions of the region. Although there is a general lack of continuity in bike lanes striped on the region's street network, progress has been made in planning and funding bikeway improvements.
Pedestrian & Bike	• Invest in safe bicycle and pedestrian routes that improve connectivity and access to common destinations, such as connections between residential areas and schools, employment centers, neighborhood shopping, and transit stops and stations, supporting efforts throughout the region to improve connectivity and realize public health benefits from these investments. • Work with Caltrans to incorporate multimodal design into highway projects such that transit can be accommodated on the highway and pedestrian and bicyclist's connectivity is enhanced for access over the highway.
Serving Transportation Needs in Rural Communities	*Summary*
Rural Transportation Taskforce	• Create a taskforce to better understand and address the economic development and transportation needs of rural areas. The following topic areas are suggested to be further explored by the task force: 1) Land Use and Conservation; policies and plans that shape rural areas; 2) The Infrastructure of Agriculture: transportation challenges to the production process; 3) Economic Opportunities: New ways to grow revenue and support better access to jobs. • Encourage and support Caltrans in seeking traffic management and safety improvements along with highway

	rehabilitation projects from the State Highway Operations and Protection Program. Ensure that both urban and rural needs are targeted. • Take steps to improve safety and security at crosswalks, transit stops, and along main access routes to transit, including rural areas, with higher priority for low income, minority, and high crime areas. • Increase rural and low income minority communities' transportation mobility by supporting greater coordination of rural transportation services, providing solutions to bridge the distance between trip origins and destinations and transit, as well as developing cost-effective programs that attract more riders, including expanded rural vanpools and increased local transit service.
Other Activities that Promote Health & Health Equity	*Summary*
Complete Streets	• Facilitate local jurisdiction adoption and implementation of a complete streets policy by recommending adoption of the region's guidelines. Encourage local jurisdictions to implement design principles consistent with the regional complete streets guidelines whenever complicating local streets and road projects. Initiate a technical assistance program to help local agencies develop street designs or implement complete streets that are sensitive to their surroundings. • Prioritize projects for funding that are consistent with the Sustainable Communities Strategy goals and/or have complete streets elements per the adopted Sustainable Communities Strategy and Regional Complete Streets Guidelines in order to encourage use of active transportation options for short trips and improve quality of life.
Transportation Demand Management	• Continue the region's commitment to transportation demand management programs and a strategy for safety education and promotion of alternative travel modes for all types of trips. Market transportation demand management strategies towards tourists so that once people arrive to the Monterey Bay Area they have resources to get out of their cars.

Public Health is considered within the RTP/SCS specifically in Section 4.15 (beginning on page 4-29). In much of Fresno County, housing, schools, shopping, employment, and parks are separated from each other by distances that discourage walking and biking and make people dependent on cars. In an eff ort to improve the health of residents, cities are promoting physical activity, particularly walking and biking, through their general plans, zoning codes, and transportation planning. These strategies address both the obesity epidemic— rates of obesity increase in proportion to vehicular miles traveled—and state mandates to reduce greenhouse gases. The co-benefits of using the general plan, zoning code and infrastructure investments to promote safe, active transportation, increased open space and nutritious food are a healthy population and a healthy environment. Cities throughout the region are using their planning processes to address the obesity epidemic. Many are including a focus on smart growth principles – developing healthy, vibrant communities where homes, jobs, schools and places for play are nearby each other and linked by walking, biking, and transit. The smart growth approach is gaining ground as GHG emission reduction mandates shape transportation and housing planning. Examples of smart growth incorporated into the 2014 RTP/SCS include:

- Promote Compact, Mixed-Use and Transit-Oriented Development
- Increase Walking and Biking Through Street Design
- Target infrastructure investments on walking, biking, and transit
- The selected SCS land use scenario moves the region toward towards a healthier future by improving the connection between land use and transportation. The result is more walkable communities, increased bicycling, more people using transit, and better access to healthy food.

In Section 5.7 (beginning on page 5-93), the RTP/SCS discusses the various aspects of non-motorized transportation, focused on regional, metropolitan, and community bikeway and pedestrian networks, including multiuse trails. The section highlights local agencies within the region that have successfully competed for Safe Routes to School funding, and further discusses the on-going need for planning, placement, operation and maintenance of a complete multi-modal system; looking at the system through short-term (1-4 years), and long-range improvement plans. In addition, the various health-related impacts of air quality are discussed in Section 5.10 (beginning on page 5-119), including strategies to continually encourage transportation modes and activities that work to improve the quality of the air we breathe.

Implementing Safe Routes to School Programs	*Summary*
Discretionary Grants	Grant programs, such as the ATP, provide specific funding opportunities for Safe Routes to Schools projects. Safety is always a concern when getting children to school and such programs makes it more realistic to encourage biking or walking as a viable option, by addressing the specific multi-modal needs of each community..

Multiuse Recreational Trails	*Summary*
Rails-to-Trails and Canal Trails	Many abandoned railways are located in the Fresno region. A consistent movement has been underway converting these railways to recreational trails and pathways for active transportation. In addition, recent projects – in partnership with various irrigation districts throughout the region – have placed trails along the banksides of irrigation canals, providing improved access and active transportation routes in neighborhoods throughout the region. RTP/SCS Goals and Policies are supportive of such activities, and work to encourage the placement of additional projects.
Pedestrian and Bicyclist Pathways	*Summary*
New Bicycle Lanes	Many street improvement projects include new bicycle lanes and other design features that promote multimodal transportation. These RTP/SCS programmed projects are enhancing the bikeway network and strengthening connectivity throughout the region.
Serving Transportation Needs in Rural Communities	*Summary*
Transportation Needs Assessment	The needs assessment, recently conducted as an implementation activity of the 2014 RTP/SCS, focused on improvements for the system that would foster healthy communities and improved alternative modes of transportation. Significant focus was placed upon identifying and analyzing the needs of disadvantaged communities in regards to sidewalks, bicycle and trail infrastructure; compared to health-related data and statistics for such areas.
Other Activities that Promote Health & Health Equity	*Summary*
Active Transportation Projects	The RTP/SCS significantly encourages active transportation projects that promote healthy travel options, increased funding, and a decrease in bicycle and pedestrian fatalities and injuries.
How Growth Occurs	The RTP/SCS emphasizes strategic growth through 2040 with the goal of reducing per capita vehicle miles traveled (VMT). With that, we are aiming for cleaner air for us to safely travel by foot, bike, or transit, from home to school, work, or play.
Complete Streets	The RTP/SCS supports and encourages implementation of Complete Streets policies. As part of this policy, Fresno COG works with local jurisdictions by providing information and resources to support local planning activities – specifically through the use of circuit planning and circuit engineering teams; consultants whose sole focus is to assist the smaller agencies in the region to address transportation needs.

Chapter 6 of the 2014 RTP/SCS outlines the Goals, Objectives and Policies found throughout the Plan. Below is a collection of some of those related to health.

- Encourage jurisdictions to ensure that the needs of pedestrians, bicyclists, and individuals with disabilities are included in the project review process.
- Encourage local jurisdictions to provide incentives to promote public transit, walking and bicycling.
- Include bicycle and pedestrian transportation planning as integral parts of the Fresno COG's transportation planning program.
- Maintain representation of the bicycling community on Fresno COG's Transportation Technical Committee.
- Encourage and assist member agencies to develop new or update existing bicycle and pedestrian transportation plans which are integrated with the regional bikeways system and which provide for bicycle use and walking as alternatives to the automobile for shorter trips.
- Encourage member agencies to include bicycling and pedestrian sections in all transportation-related= documents including, but not limited to, circulation elements of general, community, and specific plans.
- Encourage and facilitate interagency cooperation and coordination in the development and implementation of bicycling and pedestrian plans and projects.
- Coordinate Fresno County's bikeways system with those of adjoining counties.
- Encourage member agencies to provide for bicycle and pedestrian-friendly development, including bicycle travel and walking in new development plans and projects.
- Encourage member agencies to include bicycle parking requirements in all land-use/site development requirements that address automobile parking.
- Encourage member agencies to work with COG Staff on the development and implementation of a Regional Active Transportation Plan.
- Encourage and promote ridesharing, including carpooling and vanpooling as an alternative to single occupancy vehicle use.
- Support the coordination or consolidation (where appropriate) of transit and paratransit services to provide more effective, efficient and accessible transportation services.
- Seek to ensure fair distribution of the benefits and burdens of transportation projects, and seek to address the transportation needs of the disadvantaged communities through SCS Implementation Programs.
- Seek to ensure, during planning processes, that planning eff orts are as consistent as feasible; such as: the Blueprint Planning Principles, Health in All Policies, the intent of SB375 (Senate Bill 375 also known as the Sustainable Communities Protection Act of 2008), Caltrans' Complete Streets Program, and statewide and federal air quality goals, etc.
- Coordinate with other public agencies to ensure that the overall social, health, economic, energy and environmental effects of transportation decisions are understood, and given opportunity for input, by the general public and groups that have been traditionally underrepresented in planning processes.

- Consider the air quality impacts of mobile sources when planning transportation systems to accommodate expected growth in the community. There by reducing the consumption and dependence upon non-renewable energy resources used by mobile sources of emissions.

Kings County 2014 Regional Transportation Plan/Sustainable Communities Strategy

Kings County Association of Governments (KCAG) is a rural county with five member agencies in the San Joaquin Valley. The 2014 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) identifies the region's goals and provides policy direction to our member agencies. This document is different in that the first ever SCS was developed as part of this effort, changing the traditional transportation limited focus to how transportation can best support existing and future land use with the goals of reducing vehicle miles traveled and greenhouse gas emissions. Future RTP/SCS updates will continue to build on this work, strengthening the transportation and land use integrated planning efforts. The KCAG 2014 RTP/SCS is available at http://kingscog.org/planning.html. Health and health equity are discussed indirectly in the2014 RTP/SCS primarily through the context of Public Transportation (Chapter 6), Non-Motorized Facilities (Chapter 8) and the Sustainable Communities Strategy (Chapter 12). Examples of policies and programs are described below.

Pedestrian and Bicyclist Pathways	*Summary*
Non-Motorized Facilities	KCAG devotes Chapter 8 of the 2014 RTP/SCS to non-motorized facilities. This chapter outlines the assumptions, specific issues in our region, summarizes recent related activities and identifies implement strategies related to bicycle and pedestrian infrastructure development.
Serving Transportation Needs in Rural Communities	*Summary*
Rural Transportation Services	KCAG has been a leading MPO in serving the transportation needs of our rural communities through innovative transportation strategies as detailed in Chapter 6 of the 2014 RTP/SCS. The region is served by two public transit systems with the larger agency, Kings Area Rural Transit providing trips outside the county boundaries to neighboring counties for medical or school destinations. California Vanpool Authority (CalVans) also provides vanpool opportunities for farmworkers and for groups of employees/students to travel to employment destinations or schools. Park and ride lots are located throughout the region to encourage carpooling and vanpooling. A Transit Development Plan was recently adopted in 2015 that examined the transportation needs of the region.

Other Activities that Promote Health & Health Equity	*Summary*
Future Growth	The 2014 RTP/SCS identifies policies that encourage our member agencies to grow in a sustainable manner that both reduces greenhouse gas emissions from passenger vehicles and light duty trucks and by strengthening the transportation and land use integrated planning process. The SCS is located in Chapter 12.
Active Transportation Plan	KCAG is currently in the process of developing a Regional Active Transportation Plan that will identify all the potential projects in our region.
Complete Streets Transportation Strategies	The 2014 RTP/SCS encourages our member agencies to incorporate complete street transportation strategies into their projects, providing many health related co-benefits.

Metropolitan Transportation Commission (MTC) – Plan Bay Area 2013

California's landmark Senate Bill 375 (2008) requires metro areas to meet targets for reducing greenhouse gas emissions from cars and light trucks. The Bay Area is expected to grow by 2 million people over the next 25 years. Plan Bay Area (PBA) provides a roadmap for meeting 80 percent of the region's future housing needs in areas identified by local governments as Priority Development Areas, or PDAs. PBA also specifies how nearly $292 billion in anticipated federal, state and local funds will be spent through 2040. To advance equity in the region, MTC adopted five equity analysis measures for PBA: housing and transportation affordability, potential for displacement, healthy communities, access to jobs and equitable mobility. PBA invests 55% of the available funding for transit maintenance and operations, and another 7% for transit expansion. http://mtc.ca.gov/sites/default/files/0-Introduction.pdf

PBA promotes health and health equity by investing in active transportation (including the regional bikeshare and safe routes to school programs), public transit, access and mobility programs that serve transportation-disadvantaged populations, affordable housing, clean-fuel technology, low emission vehicle technology, and green-house gas emissions reduction initiatives. MTC adopted multiple performance targets for PBA that are specific to healthy and safe communities. These include: reduce premature deaths from exposure to fine particulates by 10% and from course particulates by 30%; achieve greater reductions in highly impacted areas; reduce by 50% the number of injuries and fatalities from all collisions (including bicycle and pedestrian); and increase the average daily time walking and bicycling per person for transportation by 70% (an average of 15 minutes per person per day).

Implementing Safe Routes to School Programs	*Summary*
Bay Area Safe Routes to School (SRTS) Program	The SRTS program, part of the One Bay Area Grant Program (see below), taps federal money to provide about $5 million each year for grants to cities, counties and congestion management agencies to fund: bike and pedestrian paths that connect with schools; on-street bike lanes; bike racks or other secure bike parking; traffic calming projects; bike safety programs; and education and outreach for students and families.
Multiuse Recreational Trails	*Summary*
San Francisco Bay Trail	MTC supports the San Francisco Bay Trail, a 500-mile network that connects communities and protects the Bay Area's natural beauty, by funding both the planning activities through the Association of Bay Area Governments, and construction of the trail system. MTC also supports the development of Gateway Park, which will join the beauty of the new Bay Bridge East Span to the natural, industrial and transportation history of the East Bay. http://mtc.ca.gov/our-work/plans-projects/recreation-open-space
Pedestrian and Bicyclist Pathways	*Summary*
Active Transportation / Complete Streets Programs	MTC's bicycle and pedestrian planning program supports: bike to work; complete streets; bikeshare; and paths on the region's bridges. http://mtc.ca.gov/our-work/plans-projects/bicycle-pedestrian-planning PBA makes a significant commitment to increase the convenience and safety of walking and bicycling by delivering complete streets for all users. PBA commits $4.6 billion to bicycle and pedestrian improvements over the plan period. MTC's complete streets efforts include regular trainings and workshops, as well, as the use of an online checklist for all projects funded with regional discretionary funds.

Serving Transportation Needs in Rural Communities	*Summary*
Section 5311 Grants	FTA's Section 5311 Formula Grants for Rural Areas program provides funds for both transit capital projects and transit operations in non-urbanized areas.
Coordinated Public Transit-Human Services Transportation Plan	To promote mobility for all Bay Area residents, MTC develops a Coordinated Public Transit-Human Services Transportation Plan Update. The plan aims to improve coordination among transit agencies, and better meet the needs of: seniors; people with disabilities; and low-income residents. The plan zeroes in on transportation gaps faced by these populations. It documents innovative approaches from around the state, and identifies priority solutions and regional strategies. http://mtc.ca.gov/our-work/plans-projects/other-plans/coordinated-public-transit-human-services-transportation-plan
Other Activities that Promote Health & Health Equity	*Summary*
Lifeline Transportation Program	MTC's Lifeline Transportation Program supports mobility options for all Bay Area residents. Through this program, MTC provides grants for projects that meet mobility and accessibility needs in low-income communities across the Bay Area. MTC establishes guidelines for each cycle of grants. But the goal is the same: fund community-based transportation projects developed through a collaborative and inclusive process. Lifeline projects must address transportation gaps or barriers identified in community-based transportation plans or other local planning efforts in low-income neighborhoods. http://mtc.ca.gov/our-work/plans-projects/equity-accessibility/lifeline-transportation-program PBA reaffirms that importance of addressing the mobility and accessibility needs of seniors, persons with disabilities, and residents in low-income communities throughout the region. PBA adds ~$800 million for MTC's Lifeline Transportation Program over the 28-year period of the plan. The program is funded by state and federal dollars.
Community-Based Transportation Planning Program	The program brings local residents, community organizations and transportation agencies together in MTC-identified Communities of Concern to identify low-income neighborhoods' most important transportation challenges and develop strategies to overcome them. Findings from these projects guide decisions on planning, funding and implementation. These plans address urban, suburban and rural low-income / minority communities throughout the region. http://mtc.ca.gov/our-work/plans-projects/other-plans/community-based-transportation-plans

One Bay Area Grant Program	OBAG provides funding for qualifying transportation projects to reward local jurisdictions that plan for and produce housing. OBAG helps the region meet the smart-growth goals contained in California's climate-oriented planning bill, Senate Bill 375, by incentivizing local agencies to fund transportation projects in Priority Development Areas (PDAs), areas designated by local jurisdictions as appropriate pedestrian- and transit-friendly places to concentrate future growth. http://mtc.ca.gov/our-work/invest-protect/focused-growth/one-bay-area-grants PBA commits $14.6 billion over the plan period to the OBAG program. These funds may be used by local jurisdictions for complete streets projects, including stand-along bicycle and pedestrian paths, bicycle lanes, pedestrian bulb-outs, lighting, new sidewalks, and Safe Routes to Transit and Safe Routes to School projects that will improve bicycle and pedestrian safety and travel.
Performance and Accountability Policies	To be eligible for OBAG funds, each jurisdiction in the region is required to adopt a complete streets policy and a housing element, consistent with state law.
Bay Area Transit-Oriented Affordable Housing (TOAH) Fund	The Fund, made possible through a $10 million anchor commitment from MTC, provides developers access to flexible, affordable loans to purchase available property near transit for the development of affordable housing, retail space and other critical services, such as child care centers, fresh food outlets and health clinics. By focusing growth along transit corridors in Priority Development Areas, the TOAH Fund promotes compact land use patterns, aligned with the region's Sustainable Community Strategy. MTC committed an additional $10 million to the fund in 2014. http://bayareatod.com/
Climate Initiative	PBA commits $630 million towards various climate initiatives, to reduce greenhouse gas emissions and other pollutants, including: commuter benefits ordinance (pre-tax commute program); car-sharing, vanpool incentives, Clean Vehicle Feebate Program, smart driving strategies, vehicle buy-back and purchase incentive program, regional electric vehicle charger network and the climate initiatives innovative grants. http://mtc.ca.gov/our-work/plans-projects/climate-change-clean-vehicles
Regional Means-Based Transit Fare Pricing Study	MTC in 2015 launched a study to determine if a transit fare program based on household income would be feasible and effective. The study includes three main objectives: make transit more affordable for low-income residents; move toward a more consistent regional standard for fare discounts; and avoid worsening transit operators' service levels or financial performance. The final report is expected in late-

	2016. http://mtc.ca.gov/our-work/plans-projects/other-plans/means-based-fare-study
San Francisco Bay Area Goods Movement Plan	As part of the development of Plan Bay Area 2040, MTC produced a new San Francisco Bay Area Goods Movement Plan in early 2016. MTC's goods movement research is closely integrated with the Alameda County Transportation Commission's countywide planning effort. http://mtc.ca.gov/our-work/plans-projects/economic-vitality/san-francisco-bay-area-goods-movement-plan MTC identified five key goals for the plan: increase economic growth and prosperity; reduce environmental and community impacts and improve the quality of life in communities most affected by goods movement; provide safe, reliable, efficient and well-maintained freight movement facilities; promote innovative technology strategies to improve efficiency; and preserve and strengthen a multi-modal system that supports freight movement and is coordinated with passenger transportation systems and local land-use decisions.
Bay Area Regional Prosperity Plan	The Bay Area Regional Prosperity Plan is an effort to help low- and middle-income workers, as well as high earners, benefit from the region's economic growth. The three-year initiative addresses key issues identified during development of Plan Bay Area: job opportunities and upward mobility for low- and middle-income workers; availability of affordable housing near transit; and potential displacement of residents in some gentrifying neighborhoods. These issues align with the Regional Prosperity Plan's three main areas of focus: Economic Prosperity Initiative — to expand economic opportunities for low- and moderate-income workers; Housing Initiative — to promote housing affordability in areas served by high-frequency transit and stabilize low-income neighborhoods as new investments raise property values; and Equity Initiative — to engage the residents of disadvantaged communities in implementing the Prosperity Plan. http://mtc.ca.gov/our-work/plans-projects/economic-vitality/bay-area-regional-prosperity-plan

Sacramento Area Council of Governments (SACOG) – Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS)

The SACOG region's MTP/SCS, adopted in February 2016, was developed with the goals of reducing vehicle miles traveled (VMT) and greenhouse gas emissions, improving regional air quality and the environment, increasing transportation and housing choices, enhancing agricultural vitality and quality of life. The MTP/SCS forecasts a land use pattern more focused on infill development, and includes policies and strategies that support public health in urban, suburban and rural communities, increase public transit and active transportation options, enhance health-related data and analysis tools, provide technical assistance, and fund bicycle and pedestrian infrastructure, Safe Routes to Schools projects, recreational trails, public transit, rural transportation projects, and goods movement efforts.

Implementing Safe Routes to School Programs	*Summary*
Ongoing SRTS support	MTP/SCS Strategy 29.1: invest in safe routes to and around schools so trips can be made by bicycling or walking. SACOG has SRTS grant providing Regional SRTS Summit, trainings, and planning/implementation support. Also provide ongoing review and technical assistance for jurisdiction SRTS applications for state grants.
Multiuse Recreational Trails	*Summary*
Trails funding	MTP/SCS Strategy 29.2: Invest toward the creation of a regional bicycle and pedestrian network. A number of multiuse trails in the SACOG region serve not only as recreational facilities but also as transportation connections, particularly for bicyclists. SACOG biennially updates the Regional Bicycle, Pedestrian and Trails Master Plan, working with local jurisdictions. Projects in the plan are then eligible for regional funding contained in the MTP/SCS.
Pedestrian and Bicyclist Pathways	*Summary*
Active Transportation and Bicycle and Pedestrian Funding Programs	MTP/SCS Strategy 29.5: Continue to support improved bicycle and pedestrian connectivity through SACOG's Regional Bicycle and Pedestrian Program, the Regional Active Transportation Program, and the Community Design Grant Program in order to maintain program criteria that regional road rehabilitation projects include complete streets or complete corridor features. The MTP/SCS includes $2.8 billion specifically for bicycle/pedestrian improvements, and roadway maintenance, rehabilitation and capacity funding programs support additional complete street improvements that support active transportation infrastructure.

Serving Transportation Needs in Rural Communities	*Summary*
Rural-Urban Connections Strategy (RUCS) Program	MTP/SCS Strategy 1.4.: Create and invest in a rural strategy and program to improve transportation systems that affect the economic viability of rural areas located in jurisdictions that implement good growth patterns, consistent with the Blueprint Principles, the Rural-Urban Connections Strategy, or other rural initiatives. MTP/SCS Strategy 7.7: Continue to refine SACOG funding criteria to ensure that they adequately recognize the unique needs of rural areas and provide proper incentives to reward rural land use and transportation practices that benefit the region and local areas. The SACOG region includes many rural communities. SACOG's RUCS program is an ongoing regional effort to support our rural areas' economic and agricultural vitality, and quality of life. SACOG funding programs in the MTP/SCS support motorized and non-motorized transportation projects serving both residents and rural goods movement needs.
Other Activities that Promote Health & Health Equity	*Summary*
Public Health Analysis/Performance Measurement/Technical Assistance	MTP/SCS Strategy 2.5: Continue to develop and apply health and social equity analysis methods and performance measures to help inform MTP/SCS updates and local discussions on development patterns, including transportation performance measures and opportunities related to accessibility, equity, public health and youth. MTP/SCS Strategy 2.7: During the scoping phase, review transportation projects using appropriate and available project-level analysis tools to assess whether they foster transportation choices, improve local community circulation and provide access to opportunities or divide communities, and either avoid or mitigate negative impacts (including those to public health, safety, air quality, housing and the environment). MTP/SCS Appendix C-6: Active Transportation and Health Metrics Research SACOG continues to incorporate health/health equity into its work to support regional implementation of the MTP/SCS. Implementation efforts include UrbanFootprint public health module; enhancement of health-related plan performance metrics; air quality/health-related technical assistance for local government grant applications; continued expansion of data availability for jurisdictions and stakeholders; ongoing coordination with air quality management districts and stakeholders; work in support of disadvantaged community transportation and opportunity improvements; and technical assistance to jurisdictions on incorporating public health and

	active design & transportation into their plans, policies and codes.

Santa Barbara County Association of Governments (SBCAG) 2040 Regional Transportation Plan and Sustainable Communities Strategy

SBCAG's 2040 Regional Transportation Plan and Sustainable Communities Strategy promotes active transportation and healthy lifestyles by embracing a preferred scenario that prioritizes infill and transit-oriented development in existing urbanized areas. The goals of the plan align with Caltrans Smart Mobility framework and include a specific goal for health and safety. The policies that support this goal aim to promote active transportation and complete streets, and seek improvements addressing safety for all users. The selection of the preferred scenario considered bicycle and pedestrian mode share for all trips as a performance measure. Individual projects in all categories are too numerous to mention, though they include a variety of active transportation and safe routes to school projects. To learn more, please consult SBCAG's adopted RTP-SCS, which may be found on SBCAG's website here: http://www.sbcag.org/documents.html#planning

Implementing Safe Routes to School Programs	*Summary*
Section 7.8.3 Safe Routes to School	Although a separate, federal SRTS program no longer exists under MAP-21, the State Safe Routes to School program makes grants available to local governmental agencies based upon the results of a statewide competition. Locally, the Measure A South Coast Safe Routes to School Program and North County Safe Routes to School, Bicycle and Pedestrian Program fund projects that increase pedestrian and bicycle safety to, from and near schools. (Page 7-31)
Multiuse Recreational Trails	*Summary*
California Coastal Trail	The RTP-SCS incorporates and promotes completion of the California Coastal Trail through Santa Barbara County. (Page 3-100)
Multi-use trails	The RTP-SCS plans for multi-use recreational trail facilities, specifying that they should be designed and constructed to help accommodate a variety of users (hiking/pedestrian, equestrian, bike, etc.) (Page 3-105)

Pedestrian and Bicyclist Pathways	*Summary*
Policies 7.1-7.5	The RTP-SCS includes comprehensive policies addressing bicycle transportation and infrastructure. (Page 4-11)
Policies 11.1-11.3	The RTP-SCS includes comprehensive policies addressing pedestrian movement and facilities, in compliance with the Americans with Disabilities Act. (Page 4-14)
Regional Active Transportation Plan	To implement the RTP-SCS, in 2015 SBCAG adopted a Regional Active Transportation Plan, addressing both bicycle and pedestrian infrastructure needs: http://www.sbcag.org/uploads/2/4/5/4/24540302/ratp_final_august2015.pdf
Serving Transportation Needs in Rural Communities	*Summary*
Intercity and interregional transit	The adopted RTP-SCS provides for the needs of rural communities through an extensive system of intercity and interregional transit serving, in particular, many communities in the rural North County.
Other Activities that Promote Health & Health Equity	*Summary*
RTP-SCS Preferred Scenario	The RTP-SCS preferred scenario emphasizes a transit-oriented development and infill approach to land use and housing, supported by complementary transportation and transit investments. This scenario promotes a walkable urban environment and active transportation, which are conducive to healthy lifestyles.
Goal 4, Health and Safety, Policies 4.1 and 4.2	As one of its primary goals, the RTP-SCS includes Goal 4, Health and Safety, which seeks to improve public health and ensure the safety of the regional transportation system. The plan also includes comprehensive policies addressing public health through active transportation and complete streets, as well as safe roads and highways more generally. (Page 4-9)

San Joaquin Council of Governments 2014 RTP/SCS

Improve Public Health and Build on Active Transportation

Promoting Active Lifestyles through Improved Linkages between Transportation and Land Use

Now more than ever, the RTP, with its embedded SCS, concentrates on the ways the future built environment can be enhanced with focused, innovative transportation investments. The Plan strives to enhance public health through improving public spaces as a way to provide more opportunities to bike and walk to destinations, for work, play, or other necessary travel.

Implementing Safe Routes to School Programs	*Summary*
• Active Transportation Investments • 2012 Regional Bike Pedestrian Safe Routes to School Master Plan	• 2.6% of total revenues of Measure K Renewal Program • RTP assumes full implementation of the bikeway projects (source: http://www.sjcog.org/DocumentCenter/View/489 Pg. 5-9)
Multiuse Recreational Trails	*Summary*
• 58 Projects	• RTP cites 58 Class I Bike Facilities (source: http://www.sjcog.org/DocumentCenter/View/489 Pgs. ES-13-21)
Pedestrian and Bicyclist Pathways	*Summary*
• Policy: Maximize Mobility and Accessibility; Strategy #7: Provide Transportation Improvements to Facilitate Non-Motorized Travel	• The 2014 RTP provides $281.1 million of project investments that support active transportation and community enhancements. The investments include standalone pedestrian, bicycle, and Safe Routes to School projects as well as programs that incentivize infill development through funding grants for streetscape enhancements. • An additional 6 percent of all funding sources are identified for active transportation non-infrastructure investments including education, encouragement, and enforcement programs in support of walking and bicycling. • 2014 RTP increases Measure K Renewal Program Active Transportation Investments by 78 percent over the 2011 RTP. (source: http://www.sjcog.org/DocumentCenter/View/489 Pgs. 4-19, 5-9)
Serving Transportation Needs in Rural Communities	*Summary*
• Policy: Maximize Mobility and Accessibility; Strategy #8: Improve Major Transportation Corridors to Minimize Impacts on Rural Roads	• Targeted key market expansion focuses on intercity and commute trips. The identified corridors for BRT expansion include Martin Luther King Jr., West Lane, and March Lane. (source: http://www.sjcog.org/DocumentCenter/View/489 Pgs. 4-13)
Other Activities that Promote Health & Health Equity	*Summary*

• Policy: Enhance the Environment for Existing and Future Generations and Conserve Energy; Strategy #3: Improve Air Quality by Reducing Transportation-Related Emissions	• Comply with (1) Federal Clean Air Act for ozone, PM2.5, PM10, and carbon monoxide; and (2) CA Senate Bill 375; • San Joaquin Valley Blueprint (source: http://www.sjcog.org/DocumentCenter/View/489 1-12, 3-3, 3-11)

San Luis Obispo Council of Governments (SLOCOG) 2014 RTP/SCS: Connecting Communities

SLOCOG's adopted 2014 RTP/SCS: Connecting Communities is planning continued efforts to create a fully integrated and intermodal transportation system that facilitates the safe movement of people, goods, and information within and through the region while encouraging the development of more sustainable communities. With the goal of reducing vehicle miles traveled (VMT) and greenhouse gas emissions, the RTP/SCS acknowledges health concerns and incorporates many health initiatives that invest funding in building and maintaining safe routes for non-motorized travel. To promote health and health equity objectives, the adopted RTP/SCS included $132 million for Active Transportation (Bicycle and Pedestrian) and also identified non-infrastructure safety programs (page ES-14, and Chapter 6, http://slocog.org/programs/regional-planning/2014-rtpscs).

Implementing Safe Routes to School Programs	*Summary*
$7 million	Construct sidewalks, bike paths, and bike lanes; implement traffic calming measures; and improve the safety of street crossings in the vicinity of schools.
Shared Use Paths (Class I)	*Summary*
$46 million	Construct new Class I facilities (separated shared use paths). Implement improvements recommended in regional trail plans: Railroad Safety Trail, Bob Jones City-to-the-Sea Bike Path, Coastal Trail, Salinas River Corridor Anza Trail, Chorro Valley Trail, South County Anza Trail, Morro Bay to Cayucos Connector.
Bikeways (Class II and III)	*Summary*
$33 million	Construct Class II bike lanes on all major arterials and collectors within and connecting cities and urban areas throughout the region, providing sharrows, or separation and buffering where appropriate. Construct bike boulevards and Class III bike routes.

Livable Communities Initiative	*Summary*
$46 million	Construct high priority boardwalks and walkway extensions. Expand Downtown Street Enhancements (pedestrian improvements, tree planting, lighting, and landscaping). Extend sidewalks with a focus on gap closures and ADA compliance.
Non-infrastructure	*Summary*
Safety Programs (specific funding levels to be determined)	Safe Routes to School education and encouragement; planning for safe routes to transit stops, parks, senior centers, and other activity centers. Bike and pedestrian safety outreach and education.
Other Activities that Promote Health & Health Equity	*Summary*
How Growth Occurs	The RTP/SCS emphasizes strategic growth over the next twenty years with the goal of reducing per capita vehicle miles traveled (VMT). With that, we are aiming for cleaner air for us to safely travel by foot, bike, or transit, from home to school, work, or play.
Complete Streets	The RTP/SCS supports and encourages implementation of Complete Streets policies. As part of this policy, the MPO works with local jurisdictions by providing information and resources to support local planning activities.

2015 RTP for the Shasta Region

The regional vision statement found in the 2015 RTP for the Shasta Region acknowledges that mobility efforts are intertwined with regional prosperity, environmental quality, community health and well-being, and various other factors that collectively define quality of life. To achieve the regional vision in a manner that benefits of all residents and travelers, the 2015 RTP for the Shasta Region gives special consideration to neighborhoods and communities that are statistically more likely to be disadvantaged. A new section addressing community health and well-being was added to the 2015 RTP (pg. 35-36), with a focus on addressing health-related issues with the greatest nexus to transportation, including: transportation-related injuries and deaths; respiratory disease; the epidemic of obesity; and social isolation. Specific goals, objectives, and strategies (pg. 67-74) are reinforced with planned transportation infrastructure, services, and programs (Financial Element).

Implementing Safe Routes to School Programs	*Summary*
Practices	As a result of ongoing coordination with the region's public health professionals and stakeholders, health related issues with the greatest nexus to regional transportation programs, policies and investment strategies have been identified, including transportation-related injuries and deaths, with a focus on safety around schools (pg 35-36).
Discretionary grants	Active Transportation Program grants and Shasta's Regional Active Transportation Program (includes 2% TDA set aside and FTA Section 5303 rural bikeway and walkway connections to transit) are planning level funding sources for all or part of several safe routes to schools capital projects.
Policies	Objectives include: 3.1 - Development of an integrated, context-appropriate range of local transportation choices;
Multiuse Recreational Trails	*Summary*
Fill gaps and connect to streets network	The Shasta Region has an extensive and popular regional trails system anchored by the Sacramento River Trail. In order to convert recreational trips to transportation trips (i.e. work, school, etc), the 2015 RTP targets gaps in this network and the various disconnects between this network and adjacent trip origins and destinations (pg. 61, 70).
Introduces policy and projects that promote the concept of active transportation expressways	Waterways, railroad lines, and other linear features are well suited for the development of Class I and Class IV non-motorized corridors. Many of these are already developed but not connected. Recent and planned projects close gaps and extend trails to trip generators in a manner that avoids or minimizes conflicts between motorized and non-motorized modes (pg. 61, 70).
Pedestrian and Bicyclist Pathways	*Summary*
Complete streets policies	Complete streets that address all travel modes are not consistent. It is SRTA's policy to incorporate accommodations for all applicable travel modes into the design of regionally-funded projects (pg. 70).
Develop an integrated, context-appropriate range of local and interregional transportation choices	Improve connectivity between public transportation and bicycling and walking to reflect the complete door-to-door trip from origin to destination. Prioritize bicycle and pedestrian infrastructure and amenities within designated Strategic Growth Areas (SGAs), or those that provide connections to/from SGAs. Establish multi-modal level of service criteria for evaluating and prioritizing projects and services for funding (pg. 70). Coordinate with local and state partners toward the development of inter-community and interregional non-motorized corridors (pg. 70).
Serving Transportation Needs in Rural Communities	*Summary*

Context-sensitive solutions	Limited resources and number of users limits many mobility options in rural areas. Projects must be strategic and appropriate to localized needs.
Other Activities that Promote Health & Health Equity	*Summary*
Policy	Objectives include: 4.2 – Enhance community health, safety and well-being (pg. 71), supported by strategies, including: support development of active transportation choices, identify and map mobility challenged populations, and develop an active transportation data collection program (pg. 71). The 2015 RTP acknowledges Health Indicators for Shasta County identified by the Centers for Disease Control and Prevention (pg. 35), while focusing on those factors having the closest nexus to transportation, including: transportation-related injuries and deaths; respiratory disease; the epidemic of obesity; and social isolation.
Disadvantaged Communities	SRTA's Disadvantaged Communities analysis includes a number of data indicators commonly associated with poor health, including poverty, unemployment, lack of mobility, housing and transportation cost burden, single parent households, young, elderly, educational attainment, linguistic isolation, and minority status (pg. 29).
Land use	The 2015 RTP's Sustainable Communities Strategy (SCS) element contains policies and project priorities that encourage more dense and mixed-use development within designated Strategic Growth Areas (SGAs) having a greater number of community support services (pg. 85-90).

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life

The Southern California Association of Governments (SCAG), 2016 RTP/SCS "A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life" charts a course for closely integrating land use and transportation to encourage smart and sustainable growth. It outlines $556.5 billion in transportation system investments through 2040. The Plan was prepared through a collaborative, continuous and comprehensive (3 Cs) process by SCAG, the largest Metropolitan Planning Organization (MPO) in the nation. SCAG has a long history of considering air quality and transportation safety in the development of the Regional Transportation Plan. The 2016 RTP/SCS expands upon this history to address public health and environmental justice more broadly in its planning process. The plan incorporates a Health in All Policies approach as well as an examination of how the Social Determinants of Health impact the quality of life of the regions residents. SCAG measured the outcomes of the plan in seven focus areas related to public health using the plan's performance measures, these included 1) Access to Essential Destinations, 2) Affordable Housing, 3) Air Quality, 4) Climate Adaptation, 5) Economic Opportunity, 6) Physical Activity, and 7) Transportation Safety.

In addition, the plan expands funding for active transportation to $12.9 billion and expands analysis of how the plans outcomes will impact low income and minority populations. SCAG also used new public health modeling tools to estimate the reductions in chronic diseases that could be achieved by shifting modes to active transportation.

Implementing Safe Routes to School Programs	*Summary*
Establish Safe Routes to School policies for the region	• SCAG has developed continuing sustainability joint-work programs with each of the six counties that contain Safe Routes to School development. SCAG will continue to work with counties to develop Safe Routes to School policies and programs as part of the joint-work program and integrate them into the RTP/SCS.
Multiuse Recreational Trails	*Summary*
Develop a regional bikeway network linking cities, counties, and intrastate/interstate bicycle routes	• SCAG's 2016 RTP/SCS proposes the construction of a 2,200 mile greenway network utilizing river beds, utility corridors and drainage canals, and connecting them to cities and regional bikeways. Specific actions include: o SCAG will collaborate with local jurisdictions to help adopt and implement the proposed SCAG Regional Bikeway Network, Regional Greenway Network (multi-use trails, and local bikeway networks to help connect all local jurisdictions in the SCAG region via bikeways o SCAG will support construction of bikeways and pedestrian paths that connect communities with and along "main streets" and business districts. o SCAG will work to connect and integrate the Regional Bikeway Network and Regional Greenway Network with designated historic and scenic trails.

Pedestrian and Bicyclist Pathways	*Summary*
Help develop a safe transportation environment in the SCAG region Increase the number of short trips taken by walking or biking	• SCAG's 2016 RTP/SCS supports construction of bikeways and pedestrian paths that connect communities with and along "main streets" and business districts. • SCAG's 2016 RTP/SCS works to connect and integrate the Regional Bikeway Network and Regional Greenway network with designated historic and scenic trails and the proposed U.S. Bicycle Route System.
Serving Transportation Needs in Rural Communities	*Summary*
Develop a regional bikeway network linking cities, counties, and intrastate/interstate bicycle routes	• The 2016 RTP/SCS proposes a 2,200 mile Regional Bikeway Network (includes part of the Regional Greenway Network) that links cities and communities throughout the region and beyond. SCAG has worked to incorporate active transportation into all aspects of planning, encouraging county-wide active transportation plans, even in the most rural areas. SCAG analyzed the impact of its active transportation investments based on six land use categories ranging from very urban to rural. Analyses for the 2016 RTP/SCS indicate walking and biking mode shares (weighted trips) increase in the most urban areas to 22 percent and three percent respectively in the 2040 Plan and in the most rural areas of SCAG increase to nine percent and two percent respectively for weighted trips. o SCAG will provide assistance to local jurisdictions in developing and implementing Complete Streets Plans. o SCAG will encourage local jurisdictions to develop and implement Complete Streets policies. o SCAG will collaborate with local jurisdictions and stakeholders to better integrate active transportation into non-traditional disciplines, such as public health, watershed management, and open space. o SCAG will provide assistance to local jurisdictions and stakeholders across agencies and disciplines in developing and implementing local Active Transportation plans.
Other Activities that Promote Health & Health Equity	*Summary*
Public Health Implementation Strategies	• The Public Health Appendix of the 2016 RTP/SCS incorporates three strategies for improving public health across the region: 1) Provide Leadership and Collaboration,

	2) Develop Regional Policies and Conduct Analysis, and 3) Provide Regional Support to Local Initiatives. Each of these strategies is supported by a number of implementation actions intended to support local planning efforts.
Environmental Justice Toolbox	• Building on the foundation of the 2012 RTP/SCS, SCAG has included a toolbox of possible mitigation measures to address potential impacts to environmental justice communities. The toolbox presents optional mitigation recommendations that may be effective in addressing project-specific environmental justice impacts after a comprehensive review of impacts and consultation with all stakeholders.
Bicyclist and Pedestrian Transit Integration	• For accessing transit, the 2016 RTP/SCS, with its emphasis on transit integration, increases transit mode share nine percent (beyond the plan without active transportation enhancements). Walking and biking in general also increase in High Quality Transit Areas by 39 percent and 93 percent in the 2040 Plan.

Lake Tahoe Regional Transportation Plan: *Mobility 2035*, adopted December 2012.

The Lake Tahoe RTP incorporates multiple avenues for improving community health and health equity. The greatest connection to health outcomes is through the Region's Active Transportation Plan (ATP), which was updated in March 2016 and is incorporated by reference into the Regional Transportation Plan. Both the RTP and the ATP have a strong focus on supporting livable communities and complete streets which includes connected, safe, and convenient active transportation infrastructure. The Tahoe Regional Planning Agency (TRPA), in its role as the regional metropolitan planning organization, works with our partnering agencies, school districts, and local non-profits to promote active transportation because of its benefits to the environment, physical and mental health, and economic vitality. The TRPA also offers funds through our On Our Way grant program that helps to further project development in all of the categories listed below. Please see Attachment A for the policies, actions, and benchmarks called out in the ATP. For the entire Active Transportation Plan, please visit: www.tahoempo.org/activetransportationplan. Health-related policies and activities in the RTP are identified below.

Implementing Safe Routes to School Programs	*Summary*
ATP Policies: 1.8, 5.1, ATP Actions & Benchmarks: 1.D & 5.A	The ATP includes the Region's first Safe Routes to School Plan. This plan is specific to only one school district in the Region, however the programs are recommended to be implemented in schools Region-wide. Additionally, policies and related actions continue to support SRTS planning and implementation. The development of this plan was a

	partnership funded by the On Our Way grant program.
Multiuse Recreational Trails	*Summary*
ATP Policy: 1.2 ATP Action & Benchmark: 1.A	Lake Tahoe's main economic driver is recreation. Additionally, much of our roadways are space-constrained making it difficult to include Class 2/bike lane infrastructure. Thus, TMPO focuses on providing family-friendly Class 1/shared-use trails that visitors and residents can utilize for recreation and commute purposes. The Active Transportation Plan proposed 88 miles of separated, shared-use trails.
Pedestrian and Bicyclist Pathways	*Summary*
ATP Policies: 1.3, 1.5, 1.7, 2.1, 4.4 ATP Actions & Benchmarks: 1.B, 1.C, 2.A, 4.B 4.F	The ATP identifies connectivity and safety as goals for network improvements. These improvements greatly increase use of the active transportation network. The policies and actions located in the plan identify barriers and solutions to barriers to implementation of a connected and safe network. The Active Transportation Plan proposed 88 miles of Class I/shared-use trails, 28 miles of Class 2/bike lanes, 26 miles of Class 3/bike routes, and 7.7 miles of Complete Streets projects.
Serving Transportation Needs in Rural Communities	*Summary*
ATP Policies: 3.1 & 3.3 ATP Actions & Benchmarks: 3.A & 3.B	Much of the Lake Tahoe Region is low-density and considered rural. By providing multi-modal connections, we improve accessibility to our more urban town centers through active methods. The Tahoe Transportation District, www.tahoetransportation.org, and Tahoe Area Regional Transit (TART), http://www.laketahoetransit.com/, provide transit services in the region. The RTP includes new, high priority transit services developed in conjunction with the development of the short- and long-range transit plans of these agencies. The Tahoe Transportation District has recently implemented new services in both South and North Lake Tahoe to provide interregional and out-of-area transportation for adults 60 years of age and older and individuals with disabilities. The local service will bring those living in outlying neighborhoods to programs and services in the community, as well as provide transportation to regional programs and services they are unable to access without assistance.
Other Activities that Promote Health & Health Equity	*Summary*
Sponsor Lake Tahoe Bike Challenge	Since 2005, the Lake Tahoe Bicycle Coalition (LTBC), TRPA, and other local and regional partners organize the annual Lake

	Tahoe Bike Challenge. The goal of the Bike Challenge is to encourage people all around the Region to forego driving and instead bike as often as possible. Each year, hundreds of cyclists join teams or ride as individuals and record their total number of bicycle trips through an online site: http://tahoebikechallenge.org/.
Consultation with health entities	The TRPA consults regularly with organizations and collaboratives around the Tahoe Region devoted to improving the health of our communities. These include the Community Health Advisory Board, and two social-services collaboratives - the Lake Tahoe Collaborative, and the Tahoe-Truckee Resource Collaborative.
Walkable, bikeable town centers	The TRPA's 2012 Regional Transportation Plan and Regional Plan both have a strong focus on shifting outlying development into town centers, and on making those town centers more friendly for biking, walking, and taking transit. Support of these more active modes is intended to contribute to the physical and social health and well-being of local communities and of visitors to those communities.

Attachment A

Implementing Safe Routes to School Programs

1.8.....Support and encourage local jurisdictions and school districts in removing barriers to active transportation planning, facility design, and implementing projects and programs.

Action 1.D: TRPA/TMPO will continue to provide funding, monitoring, and conduct outreach for SRTS program and project implementation. TRPA/TMPO is available to provide assistance if requested. Local jurisdictions should also adopt SRTS plans and prioritize SRTS funding and implementation of associated engineering projects. Law Enforcement agencies should conduct enforcement activities around schools at the beginning of each school year.

Benchmark 1.D: TRPA/TMPO will continue to offer On Our Way grants for the remainder of 2015, school locations will be used as criteria for choosing monitoring sites, and outreach to all school districts to be completed by 2015. LTUSD will adopt SRTS Plan in 2015, CSLT and El Dorado County will adopt SRTS Plan in 2016 and review projects for inclusion on CIP list by 2018. Law Enforcement will implement enforcement and education activities by start of 2016 school year.

5.1 In collaboration with law enforcement, school districts, and community groups, educate roadway users about their legal rights and responsibilities through education and encouragement programming.

Action 5.A: All actions for this policy for the LTUSD are located in the *Lake Tahoe Unified School District Safe Routes to School Master Plan*. All other districts without a SRTS master plan should seek to assess current conditions, consider developing a SRTS master plan, or implement some of the recommended programming in the LTUSD SRTS Master Plan as appropriate for their schools. TRPA/TMPO should continue to offer support through funding and outreach for SRTS planning.

Benchmark 5.A: Program actions in LTUSD SRTS master plan implemented by end of 2016.

Multiuse Recreational Trails

1.2.....Continue public/private collaboration in developing, funding, and implementing a complete Class I/shared-use path network around Lake Tahoe.

Action1.A: Public and private entities should continue to focus planning and funding efforts on the remaining priority projects that will connect a complete shared-use path around the lake.

Benchmark 1.A: At least one new project will be 100 percent designed and funded by 2018.

Pedestrian and Bicyclist Pathways

1.3 Design "low stress[1]" facilities to close gaps in the active transportation network by connecting facility types, removing barriers, and creating equitable infrastructure for all roadway users.

1.5 Balance the needs of all roadway users when considering intersection improvements and impacts to level of service. Encourage implementing agencies to evaluate project design alternatives through methods other than and/or in addition to vehicular Level of Service (LOS) such as reduction in vehicle miles traveled (VMT), number of increased active transportation trips, Multi-Modal Level of Service (MMLOS) and Level of Traffic Stress (LTS).

Action1.B: TRPA/TMPO will supply guidelines on the design/build process for implementing entities to review when considering transportation-related projects. TRPA/TMPO will coordinate educational opportunities through webinars and workshops on the many design/build processes available. Implementing agencies will create a document that outlines their design/build process and make available for the community.

Benchmark 1.B: TRPA/TMPO will create guidelines and conduct one webinar by end of 2016. Complete street workshop will be held in November 2015. TRPA/TMPO will request implementing agencies submit design/build process and provide online for community by end of 2017.

1.7 Construct, upgrade, and maintain active transportation facilities along major travel routes as part of all roadway improvements. In constrained locations, all design options should be considered such as restriping, signalization, and narrowing travel lanes.

Action 1.C: TRPA/TMPO will annually request betterment projects or maintenance plans (for appropriate time horizon) for all roadway improvement projects.

2.1 Every effort should be made to maintain the year-round use and condition of active transportation facilities, including making sure connections are not blocked during snow removal or are quickly made available through clearing. This also includes maintaining and upgrading infiltration devices, clearing snow, sweeping, and re-striping where needed during the season and before major cycling events. State agencies should provide timely highway maintenance in the spring of each year.

Action 2.A: Local jurisdictions should continue current winter maintenance while using data to identify and seek opportunities to expand programs. Regional bikeways and SRTS projects should be prioritized for winter maintenance. TRPA/TMPO to monitor winter use patterns to help identify locations in need of winter maintenance and to research incentives to support winter maintenance programs.

[1] A "low stress facility" is infrastructure that attracts less-experienced users who may have fear of using active transportation as a method of travel.

Benchmark 2.A: Local jurisdictions will create or expand winter maintenance programs by 2019 if appropriate. Winter monitoring will begin by TRPA/TMPO in 2016. Formal requests will be made to state agencies for spring striping maintenance by end of 2016.

4.4.....Incorporate segments of the proposed active transportation network into new and redeveloped commercial, tourist, multi-family, public service, and recreation projects consistent with this plan. Implementation of the facilities will be conducted through construction, easements, or in-lieu fees as appropriate to the scale of development per the TRPA Code of Ordinances, section 65.3.2.

Action 4.B: TRPA/TMPO will update Code of Ordinances Section 36.5.2 to include all active transportation users. This Code section addresses standards for commercial, tourist accommodation, public service and multi-family residential projects. Language updates would include replacing "pedestrian circulation system" with "active transportation circulation systems."

Benchmark 4.B: Code updated by end of 2016.

Action 4.F: TRPA/TMPO will work with local partners and advocacy groups to engage Lahontan and secure the Water Board's concurrence as to the merits of code provision 30.4.6.D.3 and discuss their approval of the necessary changes to Lahontan regulations to fully activate the TRPA Code provision in California.

Serving Transportation Needs in Rural Communities

3.1.....Create convenient intermodal connectivity which considers first and last mile facility needs and connects all modal options by providing necessary infrastructure, and schedule coordination.

Action 3.A: TTD to continue to work in partnership with TRPA/TMPO and local jurisdictions on the corridor connection process. Community organizations and private entities will use data collected on bike parking location needs and either purchase and install or create programs to help increase bike parking. TRPA/TMPO is available to provide technical assistance and outreach on multi-modal connections. An example of such assistance could be a forum on first and last mile solutions that includes governmental and private entities. Local jurisdictions will address adequate bike parking needs by working with local property owners during project review process.

Benchmark 3.A: Corridor connection plans complete by end of 2017, TRPA/TMPO will work with local jurisdictions to set bike parking increase target by end of 2017, TRPA/TMPO will complete first and last mile forum by end of 2016, and local jurisdictions will have increased equitable parking facilities to appropriate target by 2018.

3.3.....Maximize bicycle carrying capacity on all transit vehicles, prioritizing high-use multi-modal routes, reflecting current state policy, and using best available technology.

Action 3.B: Using TRPA/TMPO data, TTD will seek to increase bicycle carrying capacity on high-use routes by seeking additional funding and upgrading infrastructure to meet current standards and available technologies.

Benchmark 3.B: Bicycle carrying capacity increased by 2018.

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