

September
2016 Draft

**Regional
Transportation Plan
Guidelines for
Regional
Transportation
Planning Agencies**



California Transportation Commission



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Draft 2016
Regional Transportation Plan
Guidelines for
Regional Transportation Planning Agencies

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:

1. This is a working draft that incorporates comments as stated in the comment log posted on the Caltrans website at:
<http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/index.html>
2. The majority of comments were incorporated as much as possible, with the goal of balancing multiple stakeholder interests and the legal requirements of the RTP. If there are questions regarding how comments were addressed, please contact staff whom will respond as soon as possible.
3. Black text indicates language accepted in the July 2016 Draft RTP Guidelines and existing language from the 2010 RTP Guidelines;
4. Red text reflects new/proposed language for the 2016 RTP Guidelines;
5. Red stricken-through text means these areas are anticipated for removal, moved to other locations, and/or replaced with new information;
6. Additional reader notes are located throughout the draft document as placeholders for future discussions and determination of final text. The reader is encouraged to suggest language as appropriate.
7. "Best Practices" are red stricken-through text and compiled in Appendix M;
8. Section 1.8 provides a list of key updates for the 2016 Draft RTP Guidelines;
9. Based on comments received from multiple stakeholders and advocacy groups, a new Chapter 7, Performance Measures, provides the appropriate emphasis on the RTP as a performance-driven plan for which performance measures are developed and used for plan development, implementation, and monitoring.
10. 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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Chapter 1

Introduction

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1.0 Applicability of the Regional Transportation Plan Guidelines

Every Regional Transportation Planning Agency (RTPA) is required by law to conduct long range planning to ensure that the region's vision and goals are clearly identified and to ensure effective decision making in furtherance of the vision and goals. The long range plan, known as the Regional Transportation Plan (RTP), is an important policy document that is based on the unique needs and characteristics of a region, helps shape the region's economy, environment and social future, and communicates regional and vision to the state and federal government. As fundamental building blocks of the State's transportation system, the RTP must also support state goals for transportation, environmental quality, economic growth, and social equity.

These twenty six rural RTPAs, in alphabetical order, are:

Alpine County Transportation Commission (CTC), Amador CTC, Calaveras Council of Governments (COG), Colusa CTC, Del Norte Local Transportation Commission (LTC), El Dorado CTC, Glenn CTC, Humboldt County Association of Governments, Inyo LTC, Lake County/City Area Planning Council, Lassen CTC, Mariposa LTC, Mendocino COG, Modoc CTC, Mono LTC, Transportation Agency for Monterey County, Nevada CTC, Placer County Transportation Planning Agency, Plumas CTC, Council of San Benito County Governments, Santa Cruz County Regional Transportation Commission, Sierra LTC, Siskiyou CTC, Tehama CTC, Trinity CTC, and Tuolumne CTC. (MOVED FROM SECTION 1.1)

(MOST NEW TEXT BELOW MOVED FROM SECTION 1.3)

While the guidelines include both state and federal requirements, 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 RTPA will be different than those used by a smaller RTPA.

The 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 refers to Appendix M for Planning Practices that Exceed Statutory Authority "~~Best Practices~~" discussions where appropriate. In select cases, a "shall" or "should" is determined by a combination of general statutory authority of Government Code Section 14522 combined with direction provided to state agencies from Governor's executive orders.

Changes to federal statute are implemented by the Code of Federal Regulations (CFRs) that are also known as the "final rules". The most recent transportation planning statutes are codified in the final rule that was issued for Title 23 CFR Parts 450 and 771 and Title 49 CFR Part 613 on May 27, 2016. The Federal Highway Administration (FHWA) is still in the process of finalizing the remaining rules for implementation of the Moving Ahead for Progress in the 21st Century (MAP-21) and the Fixing America's Surface Transportation (FAST) Act. 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 four or five years (including Regional Housing Needs Allocation - 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. As RTP development is a continuous process, consideration is given to RTPAs that will be too far along in the planning process to conform their RTPs to the 2016 RTP Guidelines. All RTP updates started after the 2016 RTP Guidelines are adopted by the CTC must use the new RTP Guidelines.

1.1 Why Conduct Long-Range Transportation Planning?

~~These twenty six rural RTPAs, in alphabetical order, are:~~

~~Alpine County Transportation Commission, Amador County Transportation Commission, Calaveras Council of Governments, Colusa County Transportation Commission, Del Norte Local Transportation Commission, El Dorado County Transportation Commission, Glenn County Transportation Commission, Humboldt County Association of Governments, Inyo Local Transportation Commission, Lake County/City Area Planning Council, Lassen County Transportation Commission, Mariposa County Local Transportation Commission, Mendocino COG, Modoc County Transportation Commission, Mono Local Transportation Commission, Transportation Agency for Monterey County, Nevada County Transportation Commission, Placer County Transportation Planning Agency, Plumas County Transportation Commission, Council of San Benito County Governments, Santa Cruz County Transportation Commission, Sierra Local Transportation Commission, Siskiyou County Transportation Commission, Tehama County Transportation Commission, Trinity County Transportation Commission, and Tuolumne County Transportation Commission. (MOVED TO SECTION 1.0)~~

The long range transportation planning process in regional areas is uniquely suited to address a number of federal, state, and regional, and local goals, from supporting economic growth to achieving environmental goals and promoting public 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 (GHG) 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 multimodal~~; 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 GHG emissions responsible for climate change. ~~AB 32 requires a reduction in state GHG emission by limiting state GHG emissions in 2020 to no more than the 1990 state emission levels. As approximately half 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)~~ Recently, the California Global Warming Act of 2006, was amended by SB 32 (Chapter 249, Statutes of 2016), to require a further reduction of GHG emissions to achieve at least a 40 percent reduction below 1990 levels by 2030. Governor Schwarzenegger's Executive Order S-3-05 and

Governor Brown's Executive Order B-30-15 target a reduction of GHG emission to achieve at least a reduction of 80 percent below 1990 levels by 2050. Enacted legislation, SB 391 (Chapter 585, Statutes of 2009) directs the California Department of Transportation (Caltrans) to model how to achieve the 80 percent reduction in GHG emissions by 2050, and that modeling was included in the California Transportation Plan 2040, which as released in June 2016. According to the California Air Resources Board (ARB) 2014 Climate Change Scoping Plan, the transportation system accounts for about 36 percent of GHG emissions in California. As such, the long-range transportation planning process in regional areas is evolving 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). Even though RTPAs were not a primary focus of SB 375, RTPAs can and do contribute to the reduction of GHG. In 2013, the connection between ~~land use planning, transportation infrastructure investment, higher density development~~ and GHG was strengthened further yet with the passage of SB 743 (Chapter 386, Statutes of 2013) that required an update in the California Environmental Quality Act (CEQA) transportation metrics to ~~wards 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 satisfy the executive order.~~

In addition, ~~the~~ Executive Order B-30-15 ~~recommends that that~~ directs State Agencies shall to 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 GHG 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. (MOVED TO PARAGRAPH BELOW)~~

The RTP, also called a Long-Range Transportation Plan is the mechanism used in California by Regional Transportation Planning Agencies (RTPAs) to conduct long-range (minimum of 20 years) ~~integrated land use and~~ transportation planning, integrated with local jurisdiction's land use planning, in their regions to achieve local and regional goals, in consideration of ~~and~~ state and federal goals. Because transportation infrastructure investments have ~~substantial~~ effects on travel patterns, smart investments play a key role in meeting climate targets. As a result of state legislation and executive orders, GHG emission reduction, ~~transportation electrification, and climate resilience have also 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.

~~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_bkqd.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.~~

Equally important to consider in long-range transportation planning is how transportation can affect human health in many ways, for example: safety – reduction of collisions; air quality – reduction of vehicle emissions; physical activity – increasing biking and walking; access to goods, services, and opportunities – increasing livability in communities; and noise – designing road improvements to decrease sound exposure. A timely opportunity to address public health outcomes is early during the RTP development process. RTPAs can consider health priorities in selection of projects for the RTP. RTPAs also play a significant role in engaging residents and stakeholders in the regional transportation planning process to ensure the improvement of health outcomes for all segments of the population.

As interest in the link between transportation and health has grown, much cross-sector coordination and collaboration between transportation professionals and health practitioners has occurred at all levels of government, with input from public health and equity advocates, as well as active transportation stakeholders. The optimal result of this process is to improve transportation decisions and thereby improve access to healthy and active lifestyles. ~~Recent legislation geared at achieving this, AB 441 Monning (Chapter 365, Statutes of 2012), was passed to capture the work that MPOs are doing in their RTPs to promote health and health equity. Pursuant to AB 441, the 2016 RTP Guidelines includes a new attachment, Appendix L, that highlights the various health and health equity promoting projects, programs, and policies currently employed in MPO RTPs in California. Public health is further discussed in Section 2.3.~~

Lastly, long-range transportation planning provides the opportunity to compare alternative improvement strategies, track performance over time, and identify funding priorities. The CTP defines this as performance management that helps ensure efficient and effective investment of transportation funds by refocusing on established goals, increasing accountability and transparency, and improving project decision-making. To further reach this end, MAP-21/FAST require States and MPOs to implement a performance-based approach in the scope of the statewide and nonmetropolitan *and* metropolitan transportation planning process. In addition to

federal performance based planning, the State of California has articulated through statute, regulation, executive order, and legislative intent language, numerous state goals for the transportation system, the environment, the economy, and social equity. RTPs are developed to reflect regional and local priorities and goals, but they are also regional instruments for achieving federal and state transportation system goals. Inclusion of goal setting in RTPs allows the federal and state governments to both understand regional goals, and track progress toward federal and state goals.

Performance-based planning is the application of performance management within the planning process to help the federal government, states and regional agencies achieve desired outcomes for the multimodal transportation system. The benefits of well-designed and appropriately used performance measures are transparency about the benefits of the RTP, not only for transportation system performance, but also for other regionally important priorities such as improved public health, affordable housing, farmland conservation, habitat preservation, and cost-effective infrastructure investment. As the performance-based approach is implemented at the federal and State levels, performance measures will continue to develop over the years to come. Performance measures and the performance-based approach are further discussed in Chapter 7.

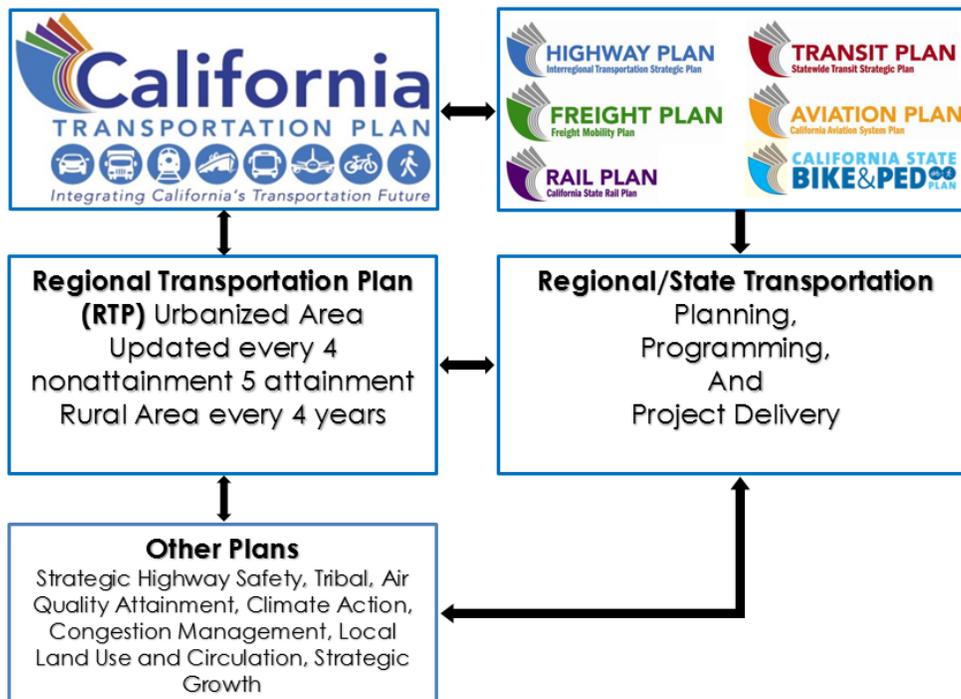
1.2 RTPs & the California Transportation Plan

Similar to the SB 375 requirements for 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 GHG 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 addresses some of the federal statewide and non-metropolitan transportation planning regulations and helps tie together several internal and external plans and programs to help define and plan transportation in California. It is not project specific or subject to both federal air quality conformity regulations and CEQA, 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. While the CTP is prepared by Caltrans, it is developed in collaboration with various stakeholders, and includes public involvement. Furthermore, the CTP is a fiscally unconstrained aspirational policy 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. (NEW TEXT MOVED FROM SECTION 1.3)

Reducing Greenhouse Gases: Shared Responsibilities SB 375 (Steinberg) and SB 391 (Liu)



1.3 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 RTPAs will develop their RTPs to be consistent with federal and state transportation planning requirements. This is important because state **and federal** statutes require that RTPs serve as the foundation of the **Federal State Transportation Improvement Program (FSTIP, which includes the State Transportation Improvement Program or STIP)**. **The FRSTIPs are-is prepared by Caltrans in coordination with MPOs/RTPAs and identifies 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.”*
- (Need to tailor for RTPAs within MPO boundaries – Please provide feedback)***

“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 CTC 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 CTC. 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, **if implemented**, will meet GHG 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 RTPA focused RTP Guidelines document addressing just the requirements for RTPAs when developing, completing, adopting and implementing an RTP.

~~While the guidelines include both state and federal requirements, 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 RTPA will be different than those used by a smaller 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. (MOVED TO SECTIONS 1.0 AND 1.6)~~

~~The 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. (MOVED TO SECTION 1.0)~~

~~Changes to federal statute are implemented by the Code of Federal Regulations (CFRs) that are also known as the "final rules". 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. (MOVED TO SECTION 1.0)~~

~~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. (MOVED TO SECTION 1.0)~~

~~Because there are a variety of names used for the programming document that is prepared by an RTPA, the RTP Guidelines refer to the programming document that accompanies an RTP as the FRTIP. The FRTIP is defined as a constrained four-year prioritized list of regionally significant transportation projects that are proposed for *federal, state and local* funding. The FRTIP is developed and adopted by the RTPA and is updated every two years. It is consistent with the RTP and it is required as a prerequisite for federal programming of funding. In this document the words FTIP and Regional Transportation Improvement Program (RTIP) are used interchangeably. (MOVED TO SECTION 1.6)~~

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 RTPA 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, and recently updated, by the Caltrans. It is not project specific, but it does look at how the implementation of the RTP/Sustainable Communities Strategy (SCS), prepared by Metropolitan Planning Organizations (MPOs) only, and RTPs prepared by RTPAs, will influence the statewide multimodal transportation system, as well as how the state will achieve maximum feasible emissions reductions in order to meet AB 32 goals. 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.

1.4 RTPAs in California

In cooperation with the Governor, 26 state statutorily created Regional Transportation Planning Agencies (RTPAs) prepare Regional Transportation Plans in California. The CTC requires RTPAs to address federal planning regulations during the preparation of their RTPs. California statutes and the RTP Guidelines identify the RTP requirements for RTPAs.

The majority of state designated RTPAs (specifically those responsible for preparing RTPs) are described under California Government Code Section 29532 et seq. One of the core functions of an RTPA is to develop an RTP through the planning process.

An RTPA 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 Regional Transportation Improvement Program (RTIP) and a list of federally funded or regionally significant projects for inclusion in the FSTIP.

Twenty-six designated RTPAs receive annual state planning funds called rural planning assistance (RPA) to carry out their respective regional transportation planning requirements.

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



1.5 Purpose of the RTP

RTPs are planning documents developed by RTPAs in cooperation with Caltrans and other stakeholders, including system users. 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”.

Pursuant to Title 23 CFR Part 450.324 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; Be updated every five years or four years in air quality nonattainment and maintenance areas; and, should make special efforts to engage interested parties in the development of the plan.”

Transportation planning by RTPAs is a collaborative process, led by the 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 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 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 RTPs are developed to provide a clear vision of the regional transportation 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;
5. Identification of needed transportation improvements, in sufficient detail, to serve as a foundation for the: (a) **Development of the Federal State Transportation Improvement Program (FSTIP, which includes the 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 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 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.

1.6 California Transportation Planning & 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 RTP Guidelines include recommendations and suggestions for providing documentation that is needed to meet the project eligibility requirements of the **Federal State Transportation Improvement Program (FSTIP, which includes the STIP)**-~~are also included. Because there are a variety of names used for the programming document that is prepared by an RTPA, the RTP Guidelines refer to the programming document that accompanies an RTP as the FRTIP.~~ The **FRTIP FSTIP** is defined as a constrained four-year prioritized list of regionally significant transportation projects that are proposed for *federal, state and local* funding. **The FRTIP FSTIP**

is developed by Caltrans in coordination with MPOs/RTPAs and approved by the RTPA FHWA/FTA and is updated every ~~two~~ four years. It is consistent with the RTP and it is required as a prerequisite for federal programming of funding. (MOVED FROM SECTION 1.3)

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 2.5 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. 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.~~

1.7 SAFETEA-LU MAP-21/FAST Act Items Impacting the Development of RTPs

This section is intended to outline the new federal requirements resulting from MAP-21/FAST and the Final Rule issued May 27, 2016 for Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning. Only the items that have a direct impact on RTP development are listed. Other sections may contain optional requirements that could have impacts to the overall regional transportation planning process.

As specified in 23 CFR 450.340(a), prior to May 27, 2018, an RTPA may adopt an RTP that has been developed using the SAFETEA-LU requirements or the provisions and requirements of 23 CFR 450. On or after May 27, 2018, an MPO may not adopt an RTP that has not been developed according to the provisions of 23 CFR 450.

Two New Planning Factors (Section 2.4) – RTPAs shall consider and implement two new planning factors added to the scope of the transportation planning process: Improve resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and enhance travel and tourism. 23 CFR 450.306 (b)(9) and (10)

Performance-Based Planning Approach (Section 7.2) – RTPAs are required to integrate the goals, objectives, performance measures, and targets described in other performance-based plans into their RTPs. However, the timeline for implementation of this requirement is still under development. Once performance measures and resulting plans are completed, the RTP Guidelines may well be amended. 23 CFR 450.306; 23 CFR 450.324 (f)(3) and (4)

Assessment of Capital Investment and Other Strategies (Section 6.22) – RTPs are required to include an assessment of capital investment and other strategies to: (1) preserve the existing and projected future transportation infrastructure, (2) provide for multimodal capacity increases based on regional needs and priorities, and (3) reduce vulnerability of the existing infrastructure to natural disasters. 23 CFR 450.324 (f)(7)

Consideration of Public Transportation Facilities and Intercity Bus Facilities (Section 6.10) – RTPs must also consider the role of intercity bus systems, including systems that are privately owned and operated, in reducing congestion, and including transportation alternatives. 23 CFR 450.324 (f)(8)

Interested Parties, Public Participation, and Consultation (Sections 4.4, 4.6, and 6.21) – In addition to the interested parties listed, RTPAs must also provide public ports with a reasonable opportunity to comment on the RTP. RTPAs should also consult with officials responsible for tourism and natural disaster risk reduction when developing RTPs and FTIPs. 23 CFR 450.316(a) and (b); 23 CFR 450.324(j)

Optional Scenario Planning – RTPAs may use scenario planning during the development of RTPs. Scenario planning is an analytical framework to inform decision-makers about the implications of various investments and policies on transportation system condition and performance during the development of their plan. 23 CFR 450.324(i)

~~**Public Participation Plan/Outreach**—Each MPO shall provide 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))~~

1.8 Key Additions to the 2016 RTP Guidelines

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

- ~~1. Section 6.13 — Expanded to include the updated state requirement to ensure that RTPAs located along the coast address the California Coastal Trail in their RTPs.~~
1. Separating RTP Guidelines, one for the MPOs and one for the RTPAs to better address the specific requirements for their RTPs.
2. Appendix C – Adds questions to the RTP Checklist for Title VI compliance.
- ~~3. Appendix L, AB 441 Monning — For the first time in the RTP Guidelines, this Appendix highlights the various health promoting policies incorporated within the MPO RTPs.~~
4. Appendix M, Examples Practices that Exceed Statutory Authority – the “Best Practices” component of RTP Guidelines is accessible by topic in the new Appendix M.
5. Updates for the MAP-21/FAST Act throughout the RTP Guidelines.
6. Section 1.0 – Provides guidance on applicability of the RTP Guidelines and defines, “shalls” and “shoulds.”
7. Section 1.2 – Defines the relationship between the RTP and the California Transportation Plan.
8. Section 1.7 – Outlines MAP-21/FAST items with a direct impact on RTP development.
- ~~9. 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.~~
10. Section 2.2 – Includes updates to State Climate Change Legislation and Executive Orders
11. Section 2.3 – Provides an overview of introduction to Appendix L, the role of transportation in public health and health equity promoting policies that are found throughout the MPO RTPs.
12. Section 2.6 – Adds local, regional, and State prepared plans that RTPAs should consult with during RTP preparation.
13. Section 2.7 – Includes Planning and Environmental Linkages (PEL), updates Context Sensitive Solutions, and additional System Planning documents that are used in partnership with ~~MPO~~ RTPAs in the transportation planning process.

14. Chapter 3 – Updates the Modeling Chapter from the 2010 version.
15. Chapter 4 – Includes new legislation highlighting the required Native American Tribal Government Consultation and Coordination process.
16. Section 4.2 – Describes Title VI considerations in the RTP, Principles of Environmental Justice (EJ), and Title VI requirements for subrecipients of federal funds.
17. Section 4.3 – Adds several public engagement strategies for RTPAs to ensure involvement of disadvantaged communities.
18. Section 4.4 – Includes Periodic Evaluation of the Public Participation Plan to evaluate the effectiveness of the procedures and strategies for developing the RTP.
19. Section 4.6 – Adds representatives of public health and public ports to the list of interested parties.
20. Chapter 5 – Describes SB 743 (Chapter 386, Statutes of 2013) and the anticipated future change to transportation analysis for transit priority areas.
21. Section 5.5 – Adds Habitat Connectivity and Air Quality Impacts to the list of environmental resources that typically require avoidance alternative and mitigation.
22. Chapter 6 – Introduces the California Freight Mobility Plan (CFMP) and the California Sustainable Freight Action Plan (CSFAP).
23. Chapter 6 – Provides preliminary information on MAP-21/FAST impacts on Asset Management.
24. Section 6.8 – Adds items to consider in the highways discussion of the RTP, including zero-emission vehicles, widespread transportation electrification, community impacts their participation in project development.
25. Section 6.10 – Adds first/last mile transit connectivity to the transit discussion of the RTP as well as the MAP-21/FAST requirement to discuss the role of intercity buses in reducing congestion, pollution, and energy consumption.
26. Section 6.12 – Adds 6 items to the goods movement discussion of the RTP.
27. Section 6.18 – Moves Performance Measures to Chapter 7, as noted below.
28. Section 6.18 – New Section 6.18 provides a summary of federal and State legislation to prepare for new technologies and innovations for the future of transportation.
29. Section 6.19 – Updates Transportation Safety for MAP-21/FAST.
30. Section 6.20 – Updates Transportation Security for the MAP-21/FAST requirement to consult with agencies and officials responsible for natural disaster risk reduction.
31. Section 6.21 – Adds new RTP requirement for an Assessment of Capital Investment & Other Strategies.
32. Section 6.23 – Adds many transportation strategies to address regional GHG emissions, including employer-sponsored shuttle services, active transportation plans, and coordinating with school district plans and investments.
33. Section 6.25 – Updates for Climate Adaptation background, State legislation, executive orders, and planning resources for RTPAs.
34. Chapter 7 – A new chapter, and Performance Measures, provides the appropriate emphasis on the RTP as a performance-driven plan for which performance measures must be developed and used by the RTPA for plan development, implementation, and monitoring. This chapter includes updates for MAP-21/FAST requirements for RTPAs to implement the performance based approach into the scope of the metropolitan planning process, including the RTP.

Chapter 2

RTP 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 state designated RTPAs.

Just like federal legislation, Government Code Section 65080 requires that all RTPAs prepare RTPs to update their RTPs every **four or five years (including RHNA adjustments)**.

When applicable, RTPs shall be consistent with federal planning and programming requirements and shall conform to the RTP Guidelines adopted by the 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 include** the following:

1. Policy Element
2. Action Element
3. Financial Element

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

Government Code Section 65080.1 – Each 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 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 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)

State: Government Code Sections 65080, 65080.1, 65081.1

2.2 Background on State Climate Change Legislation & Executive Orders

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, GHG 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 GHG emissions to comply with the requirements of AB 32.

AB 32 identifies GHGs 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~~14~~, 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 GHG. All other GHGs are referenced in terms of a CO₂ equivalent.

AB 32 directed the California Air Resources Board to develop actions to reduce GHGs, 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 GHG emissions reductions from land use and transportation planning includes implementation of SB 375.

SB 32 – California Global Warming Solutions Act of 2006: Emissions Limit

The bill extends AB 32's required reductions of GHG emissions by requiring a GHG reduction of at least 40 percent of 1990 levels no later than December 31, 2030.

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 SCS that will specify how the GHG emissions reduction target set by ARB ~~will~~ can 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

nonattainment or maintenance (required to adopt an updated RTP every four years) and for jurisdictions within other MPOs and RTPAs that elect to ~~adopt an~~ change the RTP adoption schedule from five years to every four years pursuant to Government Code Section 65080 (b)(2)(M). MPOs should carefully estimate a realistic RTP adoption date in providing the 12 month notice to HCD and not adopt a RTP at a later date. RTP adoption past the estimated adoption date relied on by HCD in determining new housing unit allocation for a specific planning period creates a conflict and shifts the housing element planning period to an ending period that lacks a requisite housing unit allocation.

5. Requires the 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. (Government Code Section 14522.1)

AB 1482 – Climate Adaptation

AB 1482 (Chapter 603, Statutes of 2015) addresses two areas:

1. Requires the Natural Resources Agency to update the state's Climate Adaptation Strategy (CAS) by July 1, 2017, and every three years thereafter.
2. Requires the Strategic Growth Council to identify and review activities and funding programs of state agencies that may be coordinated to meet the goals of the strategies and priorities in the plan, including
 - a. "Recommend policies and investment strategies and priorities to the Governor, the Legislature, and to appropriate state agencies to encourage the development of sustainable communities, such as those communities that promote equity, strengthen the economy, protect the environment, and promote public health and safety, consistent with subdivisions (a) and (c) of Section 75065."
 - b. "Provide, fund, and distribute data and information to local governments and regional agencies that will assist in developing and planning sustainable communities."
 - c. "Manage and award grants and loans to support the planning and development of sustainable communities, pursuant to Sections 75127, 75128, and 75129."

AB 246 – Climate Change Adaptation

AB 246 (Chapter 606, Statutes of 2015) establishes the Integrated Climate Adaptation and Resiliency Program through the Office of Planning and Research (OPR) to coordinate regional and local adaptation efforts with state climate adaptation strategies.

SB 350 – Transportation Electrification

SB 350 (Chapter 547, Statutes of 2015) describes the importance of widespread transportation electrification for meeting climate goals and federal air quality standards. MPOs are encouraged to invest in and plan for widespread transportation electrification and the infrastructure necessary to support it.

SB 350 focuses on “widespread” transportation electrification. The term “widespread” is important because adhering to existing patterns of investment in wealthier communities relative to low- or moderate-income communities would result in underinvestment in low-income communities and overinvestment in wealthier communities. SB 350 notes that “widespread transportation electrification requires increased access for disadvantaged communities, low- and moderate-income communities, and other consumers of zero-emission and near-zero-emission vehicles.”

MPOs are encouraged to incorporate the directives from SB 350 in their planning processes. MPOs can prioritize widespread transportation electrification by including significant investment in transportation electrification in their plans for disadvantaged communities, as well as low- and moderate-income communities. These investments should be sufficient to develop infrastructure to support widespread transportation electrification that will advance California toward the standards and goals outlined in Public Utilities Code Section 740.12(a)(1). These include:

- Reducing emissions of GHGs to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050.
- Achieving the goals of the Charge Ahead California Initiative (Chapter 8.5 (commencing with Section 44258) of Part 5 of Division 26 of the Health and Safety Code).
- Meeting air quality standards, reducing petroleum use, improving public health, and achieving GHG emission reduction goals.
- Attracting investments and high quality jobs.

Recommendations (Shoulds)

State: Pub. Util. Code § 740.12, Health and Safety Code Section 44258.

Best Practices: California Sustainable Freight Action Plan.

SB 379 – Land Use: General Plan: Safety Element

SB 379 (Chapter 608, Statutes of 2015) amends Section 65302 of the California Government Code to require a legislative body of a city or county to adopt a comprehensive, long-term general plan that includes a safety element. This safety element provides protection of the community from unreasonable risks associated with the effects of various geologic hazards, flooding, and wildland and urban fires. When creating this safety element, the legislative body shall consider advice provided in the Governor’s Office of Research and Planning General Plan Guidelines and include a variety of sources of climate scenarios, including Cal-Adapt and the most recent version of the Adaptation Planning Guide.

Executive Orders on Climate Change Issues

Three Governor ~~Schwarzenegger issued three~~ Executive Orders were issued from 2005-2008 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:

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

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

More recently, Governor ~~Brown's~~ Executive Orders were issued in 2012 and 2015. Executive Order B-16-12 sets a ~~Key language: "IT IS FURTHER ORDERED that California target for~~ 2050 GHG emissions reduction goal for the transportation sector to achieve 80 percent less than 1990 levels. ~~Executive Order B-32-15 works toward achieving GHG reduction targets with the California Sustainable Freight Action Plan, an integrated plan that establishes clear targets to improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system.~~

In addition, Executive Order B-30-15 ~~established~~ ~~4.~~ a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. ~~2.~~ All state agencies with jurisdiction over sources of GHG emissions shall implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. ~~Furthermore,~~ ~~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. ~~State agencies' planning and investment shall be guided by the following principles:~~

- ~~Priority should be given to actions that both build climate preparedness and reduce GHG emissions;~~
- ~~Where possible, flexible and adaptive approaches should be taken to prepare uncertain climate impacts;~~
- ~~Actions should protect the states most vulnerable populations;~~
- ~~Natural infrastructure solutions should be prioritized; and,~~
- ~~Lastly, the State Five-Year Infrastructure Plan will take current and future climate change impacts into account in all infrastructure projects.~~

These Executive Orders are available at:

B-16-12: <https://www.gov.ca.gov/news.php?id=17472>

B-30-15: <https://www.gov.ca.gov/news.php?id=18938>

B-32-15: <https://www.gov.ca.gov/news.php?id=19046>

Requirements (Shalls)

State: Government Code Section 65080; ~~Government Code Section 14522 as directed by Executive Order B-30-15~~

2.3 Promoting Public Health & Health Equity

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. ~~Federal, Regional, state, regional,~~ 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~~ If a higher level of investment is made on active transportation investments, and that in turn increase the walk and bike mode shares could be increased, which could ~~and~~ help a community to lower its rates of obesity, hypertension, and other chronic diseases. However, local jurisdictions primarily lead the planning and implementing of active transportation infrastructure and supportive land uses, and land use patterns play at least as large a role in encouraging more active mode choices. ~~As some health advocates have said, we want to make the healthy choice the easy choice.~~

~~Another role of the RTP, in addressing public health, is to demonstrate transportation air quality conformity (further described in Section 2.4), and to set goals and strategies that encourage implementing agencies to make investments that benefit public health in federally designated air quality nonattainment and maintenance areas. Of particular note, are strategies that address criteria pollutants, which are scientifically shown to be detrimental to health. Key strategies controlled by local implementing agencies include pricing, carpooling, transit, signal synchronization, and other Transportation Demand Management/Transportation System Management (TDM/TSM) improvements. At the federal and state levels, key strategies include vehicle emission and fuel standards, as well as incentive programs to expedite the adoption of clean technologies. These have been shown to be by far the most effective strategies for reducing the public's exposure to harmful pollutants, as well as for reducing GHG emissions.~~

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.

Improving transportation infrastructure in ways that encourages walking and cycling is an effective way to improve physical activity, decrease traffic collisions, and improve one's health status. But, transportation planning also has a tremendous impact on community health, safety, and neighborhood cohesion. For instance, health-focused transportation plans can help reduce the number of injuries and fatalities from collisions. Some research suggests that there is a multiplier effect: when streets are designed to safely accommodate walking and biking, more people do so, and as more people walk and bike the rate of collisions actually goes down as pedestrians and bicyclists become more visible to motorists. In addition, more people out walking and biking in a neighborhood has an important public safety benefit, as it means there are more "eyes on the street" to deter criminal activity. Taking this a step further, studies have shown that people who live in neighborhoods with less traffic and higher rates of walking, bicycling, and transit use know more of their neighbors, visit their neighbor's homes more often, and are less fearful of their neighbors. When streets are inhospitable to pedestrians and bicyclists, residents don't feel safe walking or biking to nearby transit and their ability to access regional educational and employment opportunities is hampered. In short, improving traffic safety results in better public health beyond simply reduced injuries and fatalities.

Additional examples of how transportation planning can promote health include:

- Transportation planning can help residents reach jobs, education, social services, and medical care by walking, biking or public transportation in a timely manner.
- Reducing commute times and increasing public transportation reliability can reduce stress and improve mental health.
- Affordable transportation options enables low income households to invest in savings, education, and healthier food options—all factors that contribute to greater individual and community health.

Best Practices: See Appendix [M](#) [L](#)

2.4 Federal Requirements

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 771](#) and Title 49 CFR Part 613. These federal regulations incorporating both MAP-21/FAST changes were updated by FHWA and FTA and published in the 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. **Support the economic vitality of the metropolitan area, especially by** enabling global competitiveness, productivity, and efficiency;
2. **Increase the safety of the transportation system for motorized and non-motorized users;**
3. **Increase the security of the transportation system for motorized and non-motorized users;**
4. **Increase** accessibility and mobility of people and freight;
5. Protect **and enhance** the environment, **promote** energy conservation, **improve the** quality of life, and **promote** consistency between (regional) transportation improvements and State and local planned growth **and economic development patterns;**
6. **Enhance the** integration and connectivity of the transportation system, across **and between** modes, for people and freight;
7. **Promote** efficient **transportation system** management and operation;
8. **Emphasize the** preservation of the **existing** transportation system;
9. **Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and**
10. **Enhance travel and tourism.**

Federal Clean Air Act conformity requirements pursuant to the Amendments of 1990, apply in all MPO nonattainment **and maintenance** 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).

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 RTPAs **receiving federal funds** 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

2.5 Relationship between the RTP, OWP, FTIP, STIP (RTIP & ITIP), & FSTIP

The key planning documents produced by the 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 RTPA or member agency during that fiscal year.

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, and Caltrans:

4. State Transportation Improvement Program – The STIP is a biennial program adopted by the CTC. 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 RTPAs. Projects included in the interregional program shall be consistent with the Interregional Transportation Strategic Plan and relevant adopted regional transportation plan(s).

State & Federal Program – MPOs, RTPAs, and Caltrans:

5. State Federal Transportation Improvement Program (FSTIP) - The FSTIP is a constrained four-year prioritized list of regionally significant transportation projects that are proposed for *federal, state and local* funding. The FSTIP is updated every four-years and is developed by Caltrans in coordination with MPOs/RTPAs and approved by the FHWA/FTA. It is consistent with the RTP and it is required as a prerequisite for federal programming of funding.

Key Planning & Programming Documents Produced by MPOs, RTPAs & County Transportation Commissions/Caltrans

	<i>Time/Horizon</i>	<i>Contents</i>	<i>Update Requirements</i>
RTP	20+ Years	<i>Future Goals, Strategies & Projects</i>	<i>RTPAs – Every 5 Years (State law allows option to change from 5 to 4 years)</i>
OWP	1 Year	<i>Planning Studies and Tasks</i>	<i>Annually</i>
FTIP <i>(MPOs Only)</i>	<i>4 Years</i>	<i>Transportation Projects</i>	<i>At least every 4 Years</i>
RTIP <i>(RTPAs/CTCs)</i>	5 Years	<i>Transportation Projects</i>	<i>Every 2 Years</i>
ITIP <i>(Caltrans)</i>	5 Years	<i>Transportation Projects</i>	<i>Every 2 Years</i>
FSTIP	<i>4 years</i>	<i>Transportation Projects</i>	<i>At least every 4 years</i>

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.

2.6 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. **Consistency can be described as a balance and reconciliation between different policies, programs, and plans.** This consistency will ensure that no conflicts would impact future transportation projects. While preparing an updated RTP, 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/**Natural Community Conservation Plan including an integrated regional mitigation strategy (if applicable);**
6. Urban Water Management Plans;
7. Local Coastal Programs (if applicable);
8. Public Agency Trail Plans (if applicable);
9. **Local Public Health Plans;**
10. **Regional Bicycle and Pedestrian Plans**
11. **Americans with Disabilities Act Transition Plans;**
12. **Master Plans, Specific Plans;**
13. **Impact Fee Nexus Plans;**
14. **Local Capital Improvement Programs;**
15. **Mitigation Monitoring Programs; and,**
16. **Countywide Long-Range Transportation Plans (if applicable).**

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. **District System Management Plans;**
6. California Aviation System Plan;
7. Goods Movement Action Plan;
8. **Sustainable Freight Action Plan;**
9. California Freight Mobility Plan;
10. Strategic Highway Safety Plan; **and,**
11. California Strategic Highway Safety Plan, and Corridor System Management Plans.

RTPAs should also consult State prepared environmental planning documents such as:

1. **Draft Environmental Goals and Policy Report;**
2. **State Wildlife Action Plan;**
3. **Safeguarding California Plan; and,**
4. **Safeguarding California: Implementation Action Plans.**

Federal regulations require consultation 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. RTPA 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.

2.7 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 can integrate the planning processes associated with the Smart Mobility Framework, Complete Streets, Context Sensitive Solutions, **Planning and Environmental Linkages (PEL)**, and system planning documents **including specifically** Transportation Concept Reports (TCRs), 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. **As the RTP is bound to fiscal constraints, the strategies, actions, and improvements described in this section are intended to provide guidance and should be considered to the maximum extent feasible in the development of the RTP.**

Smart Mobility Framework

The Caltrans Smart Mobility Framework^[1] (SMF) is a key strategic tool **for integrating transportation with land-use, to develop healthy and livable communities through multi-modal travel options, reliable travel times, and safety for all users of the transportation system.** 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, and current and future generations' demands for **multi-modal** 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

^[1] Smart Mobility Framework: <http://www.dot.ca.gov/hq/tpp/offices/ocp/smf.html>

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

participation and partnership by agencies at all levels of government, as well as private sector and community involvement.

One method for supporting the implementation of SMF is the SMF Learning Network, a series of educational forums and webinars designed to extend the reach of SMF to internal and external partners. The networks serves as an opportunity to share examples of Smart Mobility applications and strengthen strategic partnerships between Caltrans and other agencies. The information sharing and feedback that results from these forums will shape the future integration of Smart Mobility principles into Caltrans processes.

Complete Streets

A The term “Complete Streets” is refers to a transportation facility network that is planned, designed, constructed, operated and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit and rail riders, commercial vehicles and motorists appropriate to the function and context of the facility.

The California Complete Streets Act of 2008 (AB 1358) ensures that the general plans of California cities and counties meet the needs of all users, including pedestrians, transit, bicyclists, the elderly, motorists, movers of commercial goods, 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 Governor’s Office of Planning and Research 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 can include: Safety; Health; GHG 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 GHG 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. Similarly, Complete Streets consider Safe Routes to School, a public health strategy connecting communities to schools, includes but is not limited to child safety, reducing traffic congestion, sidewalks, crosswalks and bicycle lanes.

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. **Equally important to sustain economic vitality are commercial vehicles and their operational needs. Vibrant urban environments cannot function without commercial vehicles delivering goods that sustain the economic activities that take place.**

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 **MPORTPAs**, integration of Complete Streets policies support local agencies' requirements to address Complete Streets in circulation elements of their general plan.

MPORTPAs should also integrate Complete Streets policies into their RTPs, ~~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.

MPORTPAs 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 **maximum** extent feasible, **MPORTPA** 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.

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 6.113.

Recommendations (Shoulds)

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)

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: Available in Appendix M

~~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

Context Sensitive Solutions (CSS) is the process of engaging stakeholders in addressing transportation goals with the community, economic, social and environmental context. It is an inclusive approach used during the planning, designing, constructing, maintaining, and operating the transportation system. It integrates and balances community and stakeholder 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 and~~ requires careful, imaginative, and early planning, and continuous community stakeholder 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 issues and; developing; and evaluating options alternatives. When considering the context, issues such as worker safety, funding feasibility, maintenance feasibility, accessibility needs of all users, needs of the community, traffic demand, impact on alternate routes, impact on safety, predicted climate change impacts, and relevant laws and regulations should be addressed.

When considering the urban context, communities may want transportation projects to provide opportunities for improved quality of life by providing enhanced non-motorized travel and livable public spaces. In natural areas, projects should fit aesthetically into the surroundings by including contour grading, aesthetic bridge railings, and special architectural and structural elements. Use the defined project goals, issues and values identified by stakeholders to develop the purpose and need, and when creating an evaluation framework, includes these issues as “criteria” for evaluating alternatives that best solve the “issues” of the problem. Consider that the criteria should reflect the range of stakeholder values.

~~Context Sensitive Solutions for~~ Goals, issues, and values of California Tribal Governments and tribal communities, if applicable, should also be defined identified and addressed 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-~~ collaboration and consensus building with these stakeholders 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~~ also function as a community 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 all 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/LandArch/16_livability/css/index.htm

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

<http://www.contextsensitivesolutions.org/>

Planning and Environmental Linkages

Federal regulations outline a process to streamline the environmental review and approval process for transportation projects, referred to as Planning and Environmental Linkages (PEL). The results or decisions of transportation planning studies may be used as part of the overall project development process consistent with NEPA and associated implementing regulations. Specifically, these studies may result in producing any of the following for a proposed transportation project:

1. Purpose and need or goals and objective statement(s);
2. General travel corridor and/or general mode(s) definition (e.g., highway, transit, or a highway/transit combination);
3. Preliminary screening of alternatives and elimination of unreasonable alternatives;
4. Basic description of the environmental setting; and/or
5. Preliminary identification of environmental impacts and environmental mitigation.

Publicly available documents or other source material produced by, or in support of the transportation planning process, may be incorporated directly or by reference into subsequent NEPA documents in accordance with federal regulations.

PEL should be considered in RTP development. Additional information to further explain the linkages between the transportation and project development/NEPA processes is provided in Section 5.4 and Appendix D. The FHWA's Environmental Review Toolkit, PEL Program Overview also provides information, available at

:

<https://www.environment.fhwa.dot.gov/integ/index.asp>

Recommendations (Shoulds)

Federal: 23 CFR 450.318 Transportation planning studies and project development; Appendix A of 23 CFR Part 450 – Linking the Transportation Planning and NEPA Processes (Appendix D of this document).

System Planning Documents

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 RTPAs, 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/>~~

Transportation Concept Reports (TCRs)

Caltrans prepares 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⁺, and the transportation needs of the public, stakeholders, and SHS users. A The 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, integrates and aligns with the State Wildlife Action Plan (SWAP), habitat conservation plans and regional green-prints (where applicable), and articulates 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. 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. A CSMP results in a listing and phasing plan of recommended operational improvements, Intelligent Transportation System (ITS) strategies, and system expansion projects to preserve or improve performance measures within the corridor. CSMPs are developed and implemented by Caltrans in partnership with regional and local transportation agencies and other partners.

A CSMP incorporates both capital and operational improvements and is developed through the following steps:

- 1) Corridor limits defined.
- 2) Corridor team established.
- 3) Performance objectives defined; preliminary assessment performed.
- 4) Comprehensive performance assessment performed; causation of performance issues identified.

⁺<http://www.fhwa.dot.gov/hep/23cfr450.htm>

- 5) Simulate and test improvement scenarios and alternatives for most effective mix of projects, strategies and actions.
- 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/>

With regard to corridor system planning, ~~the RTP should~~ **may**:

- Include by corridor all strategies, actions and improvements identified in system planning documents taking into consideration statewide and regional objectives which can include but are not limited to: multi-modal mobility, accessibility, environmental protection, and GHG 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 corridor to determine the need for each region to consider multiple objectives regarding corridor mobility.~~
- Identify funding by corridor to implement the corridor objectives.
- 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: ~~Federally required metropolitan planning process (23-USA Section 134).~~

Best Practices: Available in Appendix M

~~Caltrans Corridor Mobility page — <http://www.dot.ca.gov/hq/tpp/corridor-mobility>~~

2.8 Adoption - Update Cycles and Amendments

Regional transportation planning is a dynamic process requiring continuous monitoring and periodic updating. Updating an RTP ensures the 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.

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 RTPA'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, as appropriate.

California state law, (Government Code Section 65080(d)) mirrors the federal update requirement. An 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).

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 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 Federal STIP 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, and demonstration of fiscal constraint.

RTP Administrative Modification (minor)

Federal regulations define ~~As stated in SAFETEA-LU~~, Administrative Modification ~~as 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 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.

Isolated rural non-attainment and maintenance areas are not required to prepare a conformity determination on their RTP and must only conduct conformity analysis on non-exempt or regionally significant projects. For more information, see Section 5.7 Air Quality & Transportation Conformity.

Requirements (Shalls)

State: Government Code Section 65080(d), mandatory RTP update cycles for RTPAs

Best Practices: Available in Appendix M

~~It is recommended that 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 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.

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 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 RTPA is encouraged to complete the checklist electronically. Following its completion, the RTPA's Executive Director (or designated representative) must sign the checklist to indicate that the information is complete and correct.

Requirements (Shalls)

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 RTPAs are required to submit an RTP Checklist with their **Draft** and **Final** RTP when the document is submitted to Caltrans and the CTC.

Chapter 3

RTP Analysis and Modeling

(RTPAs Only)

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Please note that this version of Chapter 3 is a **working draft and will continue to be reviewed and refined**. If you have further questions regarding how your comment(s) were addressed, please contact us and we will respond as quickly as we can.

2016 RTP Guidelines Update

<http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/index.html>

* Please note that this draft reflects changes from July 18, 2016 to September 15, 2016. The chapter has been reorganized based on public comments and technical workgroup recommendations. Specific federal and state statutory requirements included in the previous sections 3.1 to 3.5 have been consolidated under Section 3.6. Items that were identified as "shoulds" and "shalls" and were not followed by a specific federal / state statutory requirement or recommendation were changed to "consider, encouraged to, or may" and were moved under Section 3.5 (pending specific statutory citation). Best practices included under Sections 3.1 to 3.4. Section 3.5 were consolidated under Section 3.5. The section was also re-organized to reflect only MPO best practices (RTPA best practices have been removed)

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.

The California Transportation Commission (CTC) recognizes that RTPAs are not required to develop Sustainable Community Strategies as part of their RTP. Further, the California Department of Transportation is responsible (not the RTPAs) for performing project level air quality conformity analysis in isolated rural nonattainment or attainment-Maintenance areas. RTPAs are "encouraged" to follow the travel demand modeling guidelines (Gov. Code 14522.2(b)). The chapter has been reorganized to reflect only RTPA best practices (not metropolitan planning organization federal/state statutory/regulatory requirements and recommendations, and best practices).

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.~~

Organization of this Chapter

- Sections 3.1 to 3.5 - Provides transportation professionals the background and context of regional transportation plan analysis as well as general descriptions of terminology, technical and polices tool, and best modeling practices.
- Section 3.6 – Lists federal and state statutory or regulatory requirements and recommendations that RTPA modeling practitioners need to implement.

Key Chapter 3 Revisions (from 2010)

Language to be determined.

Federal/State Requirements, Recommendations, and Best Practices Terminology

This chapter follows the convention for “Shalls”, “Shoulds”, and “Best Practices” as defined in Section 1.3 of this document.

“Shall”: reflect a federal or state statutory or regulatory requirement and are used with a statutory or regulatory citation.

“Should” reflect a federal or state permissive, optional, or recommended statutory reference such as “may” or “should” and are used with a statutory or regulatory citation.

“Best Practices”: reflect federal/state guidelines, state of the practices, good modeling practices. They are not federal or state statutory or regulatory requirements or recommendations. Where Chapter 3 reflects “Best Practices”, the words “encouraged to”, “consider”, and “can” are used.

3.2 Modeling in the RTP Modeling as a Policy Tool Development Process Transportation and Land Use Models/Projecting Future Demand

During the regional transportation planning process ~~During the T~~ transportation planners and engineers utilize ~~analytical tools to assist in the policy formation and decision making process. 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~~ **Describe** market strategies to the public/stakeholders. Some models such as GIS, have excellent graphical and animation displays, which ~~could~~ can 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 a clear explanation of the modeling and analytical techniques applied in assessing the implications of the land use scenarios or other alternatives studied.~~
- Provide an understanding of the sensitivity of the forecast results to various policy assumptions. ~~F~~ for example, ~~they provide 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.
- ~~Assist with the evaluation and prioritization of planning and 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.~~
- Assist in the operation and management of 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 policies, 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 ~~T~~ travel demand modeling is utilized by transportation planners and engineers to ~~evaluate alternative strategies as part of a regional transportation plan.~~ ~~comply with federal and state requirements, including air quality conformity analysis and meeting their SCS GHG emissions targets.~~ ~~RTDMs use~~ ~~A TDM is a series of mathematical equations that forecast to predict human travel behavior and to forecast transportation services demand in a given region.~~ ~~The output~~ ~~inputs to a TDM includes, but is not limited to,~~ ~~They allocate estimates of regional population, employment, and land use, and the transportation network.~~ ~~to person/vehicle-trips by travel mode, route, and time period.~~ The outputs are used to assist decision-makers in developing policies ~~and strategies that~~, inform the public, in NEPA and CEQA processes, and for many other purposes. *(For additional guidance see, the latest CARB, Methodologies for Review of*

California Statewide Travel Demand Model (CSTDM)

Interregional travel is defined as the sum of the following:

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

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 associated 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 ~~may~~ 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 Techniques ~~Techniques~~ and Sketch Modeling of Scenarios

Pursuant to 23 CFR 450.316(a) ~~A~~an RTP ~~may~~ 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 essential for creating confidence in modeling results. 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/RTPAs, 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 data 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 Inputs and Assumptions

Model inputs and assumptions are a necessary part of running a transportation demand modeling, and determining if 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 RTPA MPO or other agency authorized to make such estimates and approved by the RTPA 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 years².~~

~~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.³~~

- ~~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));~~

1) ² Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008, page 8.

³ 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).

- ~~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));~~
- ~~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 SGS, 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).~~

Data

Modeling results are only as good as the data that goes into the model. The California Transportation Commission recognizes that obtaining data is especially difficult in the rural areas of California and that RTPAs may need assistance. If travel survey samples are limited for a given region, other available sources of data including the National Household Travel Survey, American Community Survey, and trip rates associated with a region that is similar in size (~~MPOs must use the most current household travel surveys, such as demographic and socioeconomic characteristics~~) can be used. ~~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 data 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 728⁴)~~
- ~~• 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. Census⁵.~~
- ~~• 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(e)(3)~~

~~2) ———⁴ SB 375 Chapter 728.~~

⁵ Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008.

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.
- ~~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 **pattern and** 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, **US EPA and US DOT suggests** ~~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.⁶

US EPA and US DOT also suggests that ~~e~~Every component of a model must be validated, as well as the entire model system⁷.

- ~~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.⁸~~
- ~~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.~~
- ~~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.~~

4) ⁶ Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, Revision to January 18, 2001 Guidance Memorandum, EAP, December 2008, page 9

5) ⁷ Travel Model Validation and Reasonableness Checking Manual second edition, page 1-6, September 24, 2010

6) 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.

- ~~• Number of trips by mode and vehicle occupancy should be validated with the observed data.~~
- ~~• Transit ridership and transit trip length should be validated.~~

Static Validation Criteria

- 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 **with Volume-to-Count** 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.

It is recommended that TDMs meet the static validation and transit assignment validation thresholds below. Where a model does not meet the thresholds the RTPA is encouraged to clearly document the impediments to meet the thresholds.

Recommended Static Validation Criteria and Thresholds

Validation Metric 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.

Recommended Transit Assignment Validation Criteria

Validation Metric 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, II 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 speeds⁷ Senate Bill 375, Chapter 728.⁹.~~
- ~~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 716¹⁰~~

~~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));~~
- ~~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);~~

7) ⁹ Senate Bill 375, Chapter 728.

8) ¹⁰ NCHRP 716

- ~~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 Analysis Tests

Sensitivity testing is the application of the models and the model set using alternative input data or assumptions. Sensitivity ~~analysis testing~~ of individual model components can include the estimation of the elasticities and cross-elasticities of model coefficients. However, sensitivity ~~analysis testing can~~ ~~should also be applied~~ ~~include the application of the~~ ~~to the entire set of models set~~ using alternative assumptions regarding the ~~input demographic and data~~, socioeconomic ~~input data~~, or ~~changes in~~ transportation system to determine if the model results are plausible and reasonable.¹¹

Model ~~S~~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.~~ 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 ~~can~~ ~~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 ~~can~~ ~~could~~ include total VMT, mode share, number of person and vehicle trips by purpose, average trip length by mode, and transit boardings. Each ~~RTPA 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 can ~~could~~ be changed as part of sensitivity tests:

- Highway Network: Add or delete lanes to a link, ~~c~~Change link speeds, and ~~c~~Change link capacities
- Land use: Residential and employment density (households and number of jobs), ~~p~~Proximity to transit, ~~r~~Regional accessibility, and ~~I~~Land use mix

9) ¹¹ *Travel Model Validation and Reasonableness Checking Manual Second Edition, September 2010, 1-5*

- **Pricing:** Increase/~~dDecrease~~ auto-operating costs, ~~Increase/Decrease~~ parking price, and ~~Increase/Decrease~~ toll rates
- **Demand Management:** Increase/~~dDecrease~~ telecommute and ~~Increase/Decrease~~ vanpooling and ~~cChange~~ HOV Lanes/policy
- **Transit:** Increase/~~dDecrease~~ transit fares, ~~Increase/Decrease~~ transit capacity - (BRT, Express bus, Regular bus, and a combination of all bus types), and ~~Increase/Decrease~~ transit frequency
- **Socioeconomic:** Change in demographics and ~~Change in~~ economic growth, and ~~hHousehold~~ 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) ~~is the are~~ key data for highway planning and management, and a common measure of roadway use and travel demand. Regional transportation agencies use VMT, along with other data, in estimating congestion, air quality, and potential gas-tax revenues. ~~MPOs—RTPAs 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 RTP 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

Quality documentation is key to providing planners, engineers, and decision-makers with a better understanding of the reliability of the tools used to produce the forecast. In addition to documenting the key modeling processes (model estimation, calibration, and validation), it is also important to identify model limitations and document how they are addressed within the post-processing model if an off-model strategy is used.

- ~~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

Furthermore each agency is RTPAs (that have models) are encouraged to formally seek out peer reviews from Californian transportation modelers from 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 can are also encouraged to utilize FHWA's Travel Model Improvement Program peer review process or use the FHWA/FTA certification review to verify that the travel forecasting methods the agencies they are using support the applications they are used for.

In addition to the committee, tTransportation modeling agencies are also encouraged to 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.

- ~~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, page 14.)~~
- ~~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 (MIP) / Best Practices

Analysis and, forecasting tools, and transportation modeling technologies are not static; change over time, therefore, it is important that state, regional, local, and air quality agencies planners evaluate existing transportation modeling capabilities and access future modeling needs have an on-going The following model program of improvement program that supports model calibration and validation activities by focusing on increasing model accuracy, policy sensitivity, and date development and acquisition.

The RTP MIP includes best practices that takes into account such factors such as the size and available resources of the regional transportation agencies and consider all modeling capabilities for the referenced counties groupings below. ~~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 - 1 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.

Counties - 2 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 Consider~~ 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.
- ~~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 716.⁴²~~
- ~~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.~~
- ~~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 **Techniques** 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:

10) ¹² NCHRP 716

- 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.~~

includes federally recognized MPOs that are not located in an urbanized area designated as a transportation management area (TMA). Group B is divided into two categories, (B (1)) attainment areas and (B (2)) nonattainment and attainment-maintenance areas based on federal air quality conformity laws. Group C includes MPOs that are located within TMAs. This group is also divided into two categories, (C (1)) attainment areas and (C (2)) nonattainment and attainment-maintenance. ~~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:

Gov. Code §65080(a) 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(b)(1) 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 ^{Group C} long range transportation goals, objectives, and policy statements

Gov. Code §65080(b)(2)(4)(C)(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 c).

Recommendations (Shoulds):

Federal: None

State: Gov. Code §14522.2(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 utilized travel demand models that are consistent with the guidelines in the development o of their RTPs

Gov. Code §65080(b) The regional transportation plan shall be an internally consistent document and shall include all of the following:

Gov. Code §65080(b)(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:

Gov. Code §65080(b)(1)(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.

Gov. Code §65080(b)(1)(B) Measures of road and bridge maintenance and rehabilitation needs, including, but not limited to, roadway pavement and bridge conditions.

(b)(1)(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.

Gov. Code §65080(b)(1)(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).

Gov. Code §65080(b)(1)(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.

Gov. Code §65080(b)(1)(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.

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)).~~

~~e) 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 than 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(e)).~~

~~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 and 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.~~

Chapter 4

RTP Consultation & Coordination

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Consultation and Coordination

4.1 Consultation & Coordination

Transportation planning is a collaborative process, led by the 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 **in conjunction with local jurisdictions**, 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, **public health departments and public health non-governmental organizations**, environmental organizations, the Native American community, neighboring 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 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 450.322(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 4.109.

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)). 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.

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 FRTIP~~, 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

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. **RTPAs should comply as well.**

State: None

Best Practices: See Appendix M

~~By documenting how specific comments are considered, the 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 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.sicog.org/Programs%20&%20Projects/Transportation_files/RTP.htm~~

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

4.2 Title VI & 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 (EJ) require RTPAMPOs to be sensitive to how all residents, particularly low-income communities and minority communities of color, may be impacted by possible transportation and land use changes identified in the RTP. Existing federal regulations require MPOs to ensure that any planned regional transportation improvements do not have a disproportionately high and 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.

While Title VI and EJ are often paired, FTA Circular 4703.1, “*Environmental Justice Policy Guidance for FTA Recipients*,” provides an understanding of the overlap and distinction between the statutory obligation and the administrative directive, respectively. Title VI prohibits discrimination by recipients of federal assistance on the basis of race, color, and national origin. As such, Title VI is one of the tools used by Federal agencies to implement the administrative directive. The clear objective of the Executive Order on EJ is to ensure that Federal agencies promote and enforce nondiscrimination. Furthermore, the Executive Order on EJ extends its protections not only to “minority populations” but also to “low-income populations.” The word, “populations” rather than the more specific word “communities,” extends not only to the residents of a geographically-contiguous neighborhood but also to “populations” composed of residents who do not live in the same neighborhood but are similarly-situated with respect to the benefits or burdens of a plan or project. Thus, the Executive Order on EJ defines “Minority Population” to mean “any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed persons who will be similarly affected by a proposed transportation program, policy or activity.” This is especially relevant in the transportation context, as the “geographically dispersed” users of a particular portion of the transportation network who are “similarly affected” by an RTP investment or policy may comprise a minority population, a low-income population, or both.

Principles of Environmental Justice

There are three federally established guiding EJ principles, summarized in FTA Circular 4703.1, to consider throughout transportation planning, public outreach and participation efforts conducted in development of the RTP:

- “To avoid, minimize, or mitigate disproportionately *high and adverse human health and environmental effects, including social and economic effects*, on minority populations and low-income populations.
- To ensure the *full and fair participation* by all potentially affected communities in the transportation decision-making process.
- To prevent the *denial of, reduction in, or significant delay in the receipt of benefits* by minority and low-income populations.”

The first principle protects low-income populations and minority populations against bearing an *unfair share of the adverse impacts* of the RTP and its investments; the third principle ensures that they receive a *fair share of the benefits* of the RTP and its investments, and receive those benefits in an equally timely manner; and the second principle ensures that they themselves have the “full and fair” opportunity, among other things, to define the needs that they prioritize, rather than have those needs defined for them by others.

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); **FTA Circular 4702.1B – Title VI Requirements and Guidelines for FTA Recipients**; implementing orders under Executive Order 12898 on Environmental Justice (1994): US DOT Order 5610.2(a) (1997/2012) and US DOT Order 6640.23 (1998).

State: Government Code Section 11135

Recommendations (Shoulds)

Federal: **FTA Circular 4703.1 – EJ Policy Guidance for FTA Recipients**; US DOT EJ Order 5610.2(a)

Best Practices: Available in Appendix M

~~Federal guidance for Environmental Justice analysis can be found at:~~

~~http://www.fhwa.dot.gov/environment/environmental_justice/index.cfm~~

~~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 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 a 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.

~~As a best practice,~~ MPOs can ensure the involvement of low-income **communities** and **communities of color** ~~minority households~~ by proactively seeking the input of these households and by making public meetings as accessible as possible. ~~Recommended practices~~ **Public engagement strategies** may include:

- ~~Conduct education and outreach before beginning the formal input process;~~
- ~~Provide all materials related to the update with adequate time for public review and input.~~
- ~~Provide early and ongoing drafts for public review to ensure transparency.~~
- ~~Proactively work with and/or provide financial support to community-based and membership organizations across the region to help engage low-income residents and residents of color in the public process and to jointly plan public workshops or other engagement opportunities.~~
- ~~Form an advisory group on Environmental Justice, Social Equity and/or Disadvantaged Communities that includes policy and community-based organizations that are focused on social equity in the region to provide feedback throughout the RTP process.~~

- Ensure that community residents have the opportunity to deliberate together to achieve consensus on their most pressing needs and recommendations.
- Holding meetings at accessible locations and 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;
- Consider the needs to low-income and individuals with limited English proficiency when translating outreach materials and ensuring that documents are easy to understand (i.e. evaluate the reading level of the materials and quality of translations);
- Technology and the Internet can reach many people, but recognize that not everyone has access to the Internet and an email address and that efforts should be made to reach individuals in other ways;
- Providing interpretation at meetings for non-English speakers;
- Create resident advisory committees or roles within existing committees with decision-making authority and identify opportunities for disadvantaged communities to serve as representatives on decision-making bodies;
- Expand the list of potential partners to include: schools, the faith community, agriculture and food hubs, local business or chambers of commerce, health providers and public health sectors, funders/philanthropy, academia, and environmental health/justice advocates, libraries, law enforcement, parks and recreation, and the technology industry;
- Create a feedback loop to provide community members information about how their input was included in any drafts and reasons for including/excluding the input;
- Make sure that there is agreement between residents and the local planning authority about what community engagement includes;
- Use a community health worker or promotora model to identify resident leaders;
- Work with community-based and membership organizations across the region to jointly plan public workshops on the RTP; and,
- Ensuring meetings are attended by RTPA MPO decision makers in addition to RTPA MPO staff.

In addition to the practices listed above, RTPAs 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.

Best Practices: MOVED TO BODY OF THIS SECTION ABOVE

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.

The RTP is one of the key processes an 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 (RTPAs shall comply as well):

*“The MPO shall develop and use a documented participation plan that defines a process for providing citizens, affected public agencies, representatives of public transportation employees, **public ports**, freight shippers, providers of freight transportation services, private providers of transportation, 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 **RTP 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 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 RTPA staff in implementing an effective public participation process through a variety of strategies. It provides RTPA staff with a menu of techniques or activities from which they can tailor their specific program's input process. RTPAs 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 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 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 RTPAs board adopts it. This enhanced public participation plan is a **federal requirement as a result of SAFETEA-LU**.

Title 23 CFR Part 450.316(a)(1)(iii) requires the participation plan to use visualization techniques to describe the RTP **and FRTIP**. 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 RTPA.

The public participation plan, the draft and adopted RTP shall be posted on the RTPA's website to the maximum extent practicable and for the life of the RTP. It is also recommended that 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 RTPA may develop a more specialized public involvement program if that promises to be more effective.

In developing RTPs, the 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. **Public health;**
3. Housing;
4. Economic development;
5. Environmental protection;
6. **Tourism;**
7. **Natural disaster risk reduction;**
8. Airport operations; and,
9. 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 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, AB 52 (Chapter 532, Statutes of 2014) mandates that agencies must consult with tribes regarding impacts to Tribal Cultural Resources as an impact under CEQA. See Section 4.9 Native American Tribal Government Consultation and Coordination for further discussion.**

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

RTPA 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.

RTPAs may include a separate Public Participation Plan, however RTPAs 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.

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.

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. A Public Participation Plan includes public outreach, public awareness, and public input beginning with the planning stage.

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

Periodic Evaluation of the Public Participation Plan

A periodic review of the public participation plan is important to evaluate the effectiveness of the procedures and strategies employed during the full and open participation process. This periodic review can help to ensure that the public participation plan, once adopted, is being implemented effectively and is achieving its goals of engaging low-income and minority residents in expressing and prioritizing their needs and their views on how the RTP can best meet those needs.

Requirements (Shalls)

Federal: Title 23 CFR Part 450.316

State: Public Resources Code Section 5097.94, and Sections 21073 through 21084.3.

Best Practices: Available in Appendix M

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.sicog.org/Programs%20&%20Projects/Transportation_files/RTP.htm

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 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 freight sector on

the transportation system is significant and must 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.

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 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.

Recommendations (Shoulds)

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: Available in Appendix M

~~<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>~~

4.6 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 RTPA shall provide the following interested parties with reasonable opportunity to comment on the proposed RTP:

1. ~~Residents~~ Individuals;

2. Affected public agencies;
3. **Representatives of local public health;**
4. Representatives of public transportation employees;
5. **Public ports;**
- ~~6. Warehousing and logistics representatives;~~
- ~~7. Deep water ports;~~
- ~~8. Class I and short line rail providers;~~
9. Freight shippers;
10. Private providers of transportation;
11. Representatives of users of public transportation;
12. Representatives of users of pedestrian walkways and bicycle transportation facilities;
13. Representatives of people with disabilities;
14. Providers of freight transportation services; and,
15. 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 450.324 (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

Best Practices: Available in Appendix M

~~<http://www.sicog.org/index.aspx?nid=181>~~

~~<http://www.edctc.org/3/RTP2015-2035.html>~~

~~<http://www.trb.org/NCFRP/NCFRP.aspx>~~

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

4.7 Native American Tribal Government Consultation & 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 of federally recognized Tribal Governments and, where feasible, seeking agreement on important matters. The RTPA can do this by sharing information and conducting meetings with 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 RTPAs transportation plans, programs, projects and schedules with similar documents prepared by the tribe. The RTPA needs to ensure consistency with tribal plans and the RTP.

Currently there are 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 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 RTPA. The RTPA should establish a government-to-government relationship with each tribe in the region. This refers to the protocol for communicating between the RTPAs and the Tribal Governments as sovereign nations. 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 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. 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. 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: Public Resources Code Section 5097.94, and Sections 21073 through 21084.3. AB 52 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 RTPAs must consult with tribes with regards to Tribal Cultural Resources as part of the CEQA process.

Best Practices: Available in Appendix M

~~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 RTPAs jurisdiction.~~

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

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

4.8 Consultation with Resource Agencies

Consultation with resource agencies, State and local agencies responsible for land use management, environmental protection, conservation, and historic preservation is critical when concerning the development of the RTP.

The consultation efforts 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.

Input/comments from resource agencies early in the planning process is critical. 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.

~~The FHWA Eco-Logical and Integrated Ecological Framework and the state Regional Advance Mitigation Planning model provides a process by which early consultation with resource agencies and conservation non-profit organizations to develop regional greenprints or conservation plans that identify of areas of conservation value can satisfy federal requirements for early consultation and result in benefits for both transportation agencies and environmental protection. Programmatic mitigation plans, Natural Communities Conservation Plans and Habitat Conservation Plans can provide early consultation and identification of natural resources that need to be avoided or minimized in order to reduce risk and streamline project delivery. For additional information related to coordination of regional mitigation activities with other planning processes, see Chapter 5.~~

An 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 Ocean Protection Council;**
11. California Energy Commission;
12. California Office of Planning and Research;
13. California Environmental Protection Agency;
14. California Natural Resources Agency;
15. California Water Resources Control Board;
16. California Regional Water Quality Control Board;
17. California Department of Fish and Wildlife;
18. California Department of Resources, Recycling, and Recovery;
19. California Air Resources Board;
20. California Department of Parks and Recreation;
21. California Department of Conservation;
22. California State Mining and Geology Board;
23. Any additional California environmental, energy, resource and permit agencies;
24. Bay Conservation and Development Commission (Bay Area);
25. Regional Air Quality Management Districts, and;
26. **California Office of Historic Preservation.**
27. ~~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.**

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 Federal Environmental Requirements.

Requirements (Shalls)

Federal: Title 23 CFR part 450.324(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. RTPAs shall comply as well. 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 23 CFR 450.324(f)(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), **requires** consultation with agencies, governments or individuals that could potentially be impacted by transportation projects in the RTP.

Best Practices: Available in Appendix M

4.9 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>

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, RTPAs should ensure that the plan is coordinated and consistent with their regions' 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 with 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 **RFTIP**.

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450.306(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.

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, 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. 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. **Likewise, all RTPs and subsequent transportation projects address all environmental issue areas identified in the CEQA Guidelines Appendix G, Environmental Checklist Form.**

A change to transportation analysis in environmental review under CEQA occurred with the Governor's approval of SB 743. ~~It~~ **which** 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 GHG emissions, the development of multimodal transportation networks, and a diversity of land uses **for transit priority areas**. Per ARB Vision Model results, reductions in VMT growth are needed to achieve sufficient GHG emissions reduction for climate stabilization, as reflected in executive orders on 2030 and 2050 GHG targets. 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 potential** metric to determine significant impacts. A future update of the RTP Guidelines will capture any "shoulds" or "shalls" resulting from the formal rulemaking process. **Lead agencies should refer to existing CEQA statutes, regulations, and case law when performing CEQA analysis for their RTPs/SCSs.**

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 RTPA 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 RTPAs 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 RTPA 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. 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.

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. **Tiering refers to environmental review of sequential actions, where general matters and environmental effects are examined in a broad EIR for a decision such as adoption of a policy, plan, program, or ordinance, and subsequent narrower or site-specific EIRs are prepared that incorporate by reference the prior EIR and concentrate on environmental effects that can be mitigated or that were not analyzed in the prior EIR. In such instances, the later narrow EIR “tiers” off the prior broad EIR. If a project-specific EIR tiers off from a broader prior EIR such as the PEIR prepared for a RTP, it could help eliminate repetitive discussions of the same environmental issues; facilitate project-level impact analysis by focusing on issues specific to the later project; reduce the burdens from duplicative reconsiderations of a program, plan or policy with a certified EIR; and, reduce CEQA delay and paperwork at project level. (See glossary for a definition of ‘tiering’)**

Changes to the RTP/~~FRTIP~~ Project Lists

When the RTPA modifies its RTP/~~FRTIP~~ project lists, 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.~~ As a lead agency under CEQA, it is the responsibility of each RTPA to analyze the potential environmental affects that proposed changes of their RTP may have on the environment. This should be done by providing substantial evidence that proposed changes to the RTP would be "minor" or "technical" in nature, if there would be "new" or "more severe" significant environmental impacts, if "circumstances" of the project or "new environmental information" is discovered, or if "substantial" or "major changes" to the RTP are proposed. 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).

When NEPA review is required, MPOs should reference the Federal Council on Environmental Quality’s (CEQ) memorandum published on August 1, 2016 entitled, *Final Guidance for Federal Departments and Agencies on Consideration of GHG Emissions and the Effects of Climate Change in NEPA reviews*. Section 6.28 provides further guidance for GHG reduction and addressing adaption of the regional transportation system to climate change. The full CEQ guidance is available at: https://ceq.doe.gov/current_developments/ceq_guidance_nepa-ghg-climate_final_guidance.html.

Requirements (Shall)

State: Public Resources Code 21000 et seq, Environmental Protection, and CEQA guidelines section 15000 et seq.

Best Practices: Available in Appendix M

~~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://cores.ca.gov/ceqa/>

<http://www.califaop.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 Federal Environmental Requirements

Pursuant to Title 23 CFR Part 450.324~~2~~, 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 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. RTPAs ~~are encouraged to~~ **should** comply as well. 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 (Shalls)

Federal:

23 CFR Part 450.324(f)(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.

23 CFR Part 450.322(g)(1) and (2): Requires consultation, 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.

23 CFR Part 450.306(a)(5): Requires that the 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.

Best Practices: Available in Appendix M

~~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.~~

~~The RTPA should 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. This consultation should 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.~~

~~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_tec.asp~~

5.4 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.

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450.318 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.

Best Practices: Available in Appendix M

~~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 Resource Areas for Avoidance and Mitigation 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 (23 USC Section 139, Efficient Environmental Reviews for Project Decision-making) sets forth a new environmental review process. MAP-21/FAST made revisions to 23 USC 139 although the revisions are minor. The first step under Efficient Environmental Reviews for Project Decision-making ~~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.

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. **Strategic retreat or relocation shall be one alternative to be considered.**

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/>

Cultural Resources

Cultural Resources are protected under a number of laws and regulations, including the National Historic Preservation Act (Section 106) and CEQA and the California Public Resources Code (PRC) 5024 et seq. Under Section 106 of the NHPA, federal agencies are mandated to take into account the effect of federal undertakings on historic properties affected by federally funded or federally approved undertakings. If avoidance is not an option, then minimization of impacts and mitigation of the effects are required. Under CEQA, a project which may cause a substantial adverse change in the significance of a historical resource would require mitigation of the project effects by the project's lead CEQA agency.

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 6.1~~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.

Habitat Connectivity

Section 1797.5 of the California Fish and Game Code expresses the State’s policy to promote the voluntary protection of wildlife corridors and habitat strongholds in order to enhance the resiliency of wildlife and their habitats to climate change, protect biodiversity, and allow for the migration and movement of species by providing connectivity between habitat lands. In order to further these goals, it is the policy of the State to encourage voluntary steps to protect the functioning of wildlife corridors through various means, such as the acquisition or protection of wildlife corridors as open space through conservation easements; the installation of wildlife-friendly or directional fencing; siting of mitigation and conservation banks in areas that provide habitat connectivity for affected fish and wildlife resources; and the provision of roadway undercrossings, overpasses, oversized culverts, or bridges to allow for fish passage and the movement of wildlife between habitat areas. Transportation facilities should be designed, engineered, planned, and programmed with habitat connectivity in mind in keeping with these State goals in order to maintain healthy ecological function and climate change resiliency in and between habitat areas. Below are tools that can help speed along habitat corridor projects in a cost-effective way during the initial phases of project planning and design:

California Water Action Plan: 2016 Update:

http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf

California Essential Habitat Connectivity Project:

<https://www.wildlife.ca.gov/conservation/planning/connectivity/CEHC>

Western Governors Association’s Crucial Habitat Assessment Tool:
<http://www.wafwachat.org/map>

California State Wildlife Action Plan: <https://www.wildlife.ca.gov/SWAP/Final>

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

Requirements (Shalls)

Federal: Title 23 CFR Part 450.306(b)(5) requires that the **metropolitan** planning process addresses protection and enhancement of the environment, among other planning factors. RTPAs shall comply as well.

Recommendations (Shoulds)

Federal: Title 23 CFR 450.318 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.

Best Practices: Available in Appendix M

~~Voluntarily addressing all of the applicable topics noted above during the preparation of the RTP would be considered as a best practice.~~

~~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 & 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.

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 RTP
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.

Recommendations (Shoulds)

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: Available in Appendix M

<http://www.stancog.org/rtp.shtm>

5.7 Air Quality & Transportation Conformity**Federal and State Clean Air Act**

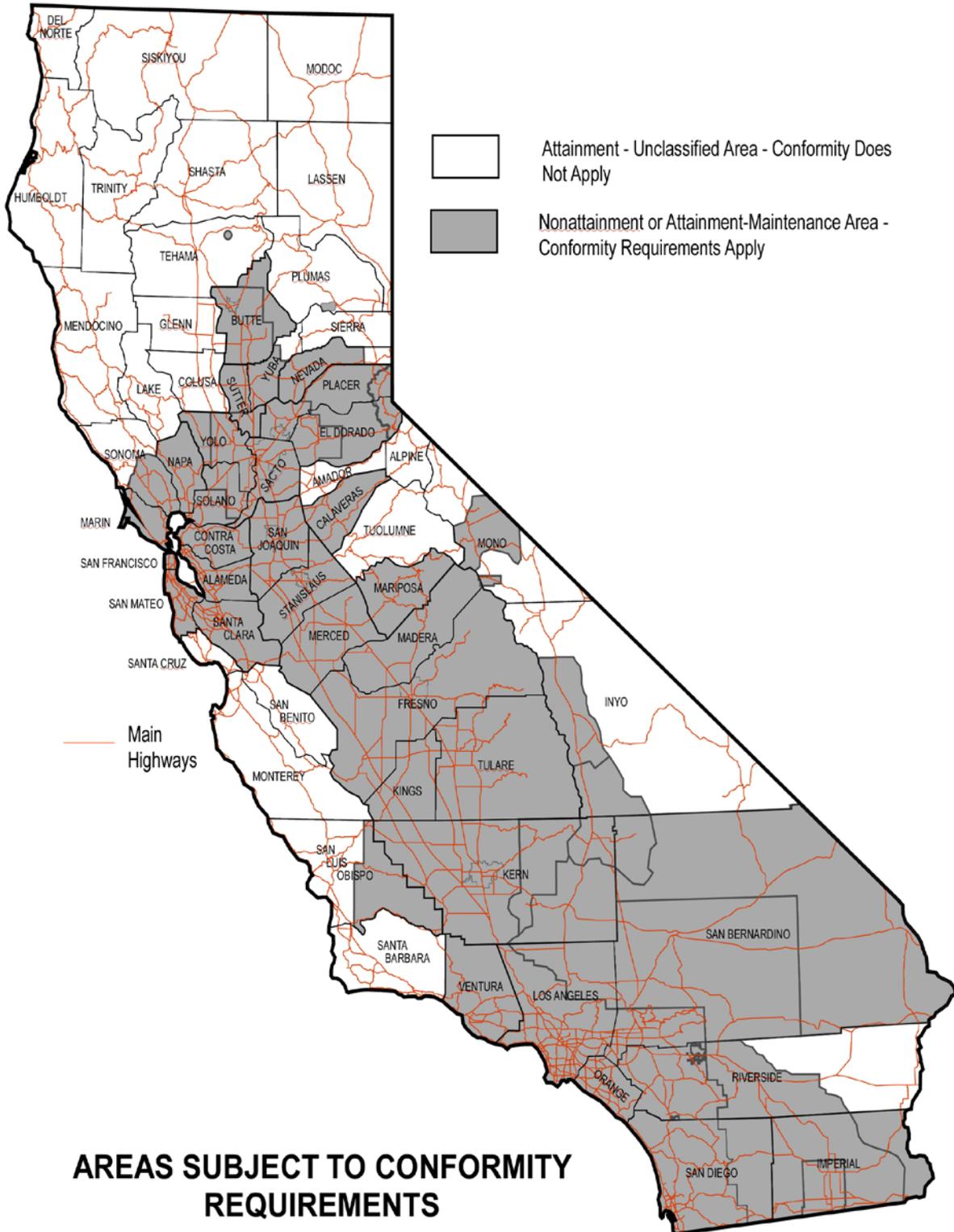
The Clean Air Act as amended in 1990 is the primary federal law that governs air quality. This law mandates the US **Environmental Protection Agency (EPA)** to establish the standards for the quantity of pollutants that can be in the air. **Subsequently, The US EPA revises must review the standards from time to time every five years and revise them as necessary to protect public health and welfare.** 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 (NO₂), ozone (O₃), particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂). 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 US **Environmental Protection Agency (EPA)**, and for developing and implementing statewide control measures such as those related to on-road mobile sources (vehicle emission controls). **Local air pollution control and air quality management districts (APCD or AQMD) are responsible for regional control measures, which may also include measures that affect mobile sources (e.g., fleet rules, indirect source review requirements).**

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 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, the area may develop 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.



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. For an RTPA within the boundary of an MPO, 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 **for MPOs**.

In isolated rural nonattainment and maintenance areas (non-MPO), a conformity determination must be done only when a non-exempt federal transportation project needs approval. Some projects (e.g., safety projects) are exempt from conformity altogether, and some are exempt from regional emissions analyses (See 40 CFR 93.126 - 93.128). Unlike MPO areas, there are no requirements to update conformity determinations for projects in isolated rural nonattainment and maintenance areas on a 4-year cycle, or to meet other conformity triggers as required in 40 CFR §93.104.

Transportation Control Measures

The RTP shall discuss ways in which activities in the plan will conform to the SIP, including TCM implementation.

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 RTPA is taking to address the delay. TCM projects must receive priority for funding.

Requirements (Shalls)

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.

Best Practices: Available in Appendix M

~~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/otag/stateresources/transconf/index.htm>~~

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Chapter 6

RTP 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 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 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.

RTPAs with populations that exceed 200,000 persons have the option to quantify a set of indicators 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 RTPA used to select the transportation projects on the constrained and unconstrained project lists.

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~~ RTPA 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 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.

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.

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 450.324

State: California Government Code Section 65080

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 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.

Federal law requires each transportation plan ~~and each transportation improvement program~~ prepared by the ~~RTPA 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 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 RTPA, State and transit operators.
2. Projected Costs – Takes 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 FRTIP 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 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 RTPA’s budget. To the extent there appear to be shortfalls, the 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 RTPA’s or transit operators’ past record of obtaining funding. If it relies on new funding sources, the RTPA must demonstrate that these funds are reasonably expected to be available.

Requirements (Shalls)

Federal: Title 23 CFR Part 450.324(f)(11)

State: California Government Code Section 65080(b)

Best Practices: Available in Appendix M

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 450.324(f)(11)

State: California Government Code Section 65080(b)

Best Practices: Available in Appendix M

<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 & 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 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. 324(f)(11) Requires a fiscally constrained list of projects.

Recommendations (Shoulds)

Federal: Title 23 CFR part 450. 324(f)(11)(vii) For illustrative purposes, the list of projects may include additional projects if an additional source of funds is located.

Best Practices: Available in Appendix M

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

<http://www.sacog.org/mtp/2035>

6.5 Revenue Identification & 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 RTPA or transit agency can commit such funding to transportation projects. As codified in federal regulations 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 450.324(f)(11)(iv), the RTP 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 450.324(f)(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 450.324(f)(11)

State: California Government Code Section 65080(b)

Best Practices: Available in Appendix M

<http://www.bcag.org/Planning/index.html>

<http://www.fresnocog.org/document.php?pid=320&x=272>

6.6 Estimating Future Transportation Costs

Federal regulations require that (Title 23 CFR Part 450.324(f)(11)(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. RTPAs must ensure project costs identified in ~~both~~ the RTP ~~and FRTIP~~ are in year of expenditure dollars. This is particularly crucial for large-scale projects with construction/implementation dates stretching into the future.

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 FRTIP~~, 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 ~~F~~RTP. 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 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, 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 450.324(f)(11)

State: California Government Code Section 65080(b)

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450.34(f)(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 from increased vehicle miles traveled, growing population, and greater congestion to aging infrastructure and escalating operating costs. These challenging circumstances put greater demands 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, 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.

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 RTPA and result in more effective decision making. The 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 technology applications, and making investment decisions based on measured performance relative to established goals. RTPAs can also educate the public and decision makers and work cooperatively with stakeholders across transportation modes.

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: The Moving Ahead for Progress in the 21st Century (MAP 21) and Fixing America's Surface Transportation (FAST) Act establishes limitations on federal funding flexibility if the aggregate bridge condition in California does not meet certain minimum conditions for National Highway System (NHS) bridges **being structurally deficient**.

State: None

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450.306(e) - 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: Available in Appendix M

To ensure a sustainable transportation system, RTPAs 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.sjcoag.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 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 450.324(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 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 450.324(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;
6. Unmet highway needs.
7. Consider CTP policy suggesting ~~to~~ strategic investing 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 450.324(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.

Best Practices: Available in Appendix M

<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 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. 2013 California Public Road Data – Statistical Information derived from the Highway Performance Monitoring System. Prepared by Caltrans Division of Research, Innovation & System Information. Available online at:

<http://www.dot.ca.gov/hq/tsip/hpms/datalibrary.php>

Requirements (Shalls)

Federal: Title 23 CFR Part 450.324(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.

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 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 increased use of transit is a key element to meeting legislative requirements such as AB 32 and SB 375 that aim to reduce GHG emissions that contribute to global warming. Transit systems also play an important role in the mobility for those who are unable to drive, including youth and the elderly, as well as low-income individuals, and people with disabilities. Given these reasons, it is crucial for RTPAs to engage in a continual and comprehensive dialogue with the transit operators within their region.

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 450.324(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.

6.11 3 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 RTPAs 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 2.76. 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**¹³ trips to destinations;
2. Policies, plans and programs, **such as Safe Routes to Schools**, used to promote the usage of bikes and walking;
3. Transit and rail interface with bicyclists and pedestrians;
4. Unmet bicycle and pedestrian needs; and,
5. 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

¹³<http://www.peopleforbikes.org/blog/entry/mapping-comfort-part-i-how-psychological-stress-influence-bike-maps>

Trail (or property designated for the coastal trail) to coordinate with specified agencies regarding development of the coastal trail. ~~The law also requires that RTPs and to include provisions for the coastal trail. in their Regional Transportation Plans.~~ As RTPs are updated, the CCT provisions from each respective certified Local Coastal Program Land Use Plan's policies, programs and maps should be integrated into the RTP update.

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. ~~Prioritization of projects within RTPs should include consideration of connecting the CCT across identified critical gaps in the coastal trail system.~~

Additional information and maps regarding the California Coastal Trail is available from the State Coastal Conservancy and the California Coastal Commission at:

www.yourcoast.org

<http://scc.ca.gov/2010/01/07/the-california-coastal-trail/>

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

~~<http://coastal.ca.gov/access/ctrail-access.html>~~.

~~<http://www.coastal.ca.gov/access/acndx.html>~~

~~<http://www.coastal.ca.gov/access/coastal-trail-map.pdf>~~

Requirements (Shalls)

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.

Best Practices: Available in Appendix M

~~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

6.12 4 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, 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 disproportionately high and adverse impact on low income or disadvantaged groups) are minimized.

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 to the regional economy, environment, public health, and community well-being. Improvements to the goods movement transportation system ~~often~~ can result in co-benefits to the overall system when California's economic, equity, and environmental goals are simultaneously considered. For example, as a rail improvement project could ideally take trucks off the highway, congestion is could be reduced and potentially reduces GHG emissions. The CTP recognizes the importance of enhancing freight mobility, reliability, efficiency, and global competitiveness, which is why RTPAs should consider deploying, as appropriate and feasible, cost-effective technologies that can help expedite goods movement and reduce congestion at our ports. A seamless, efficient, low-emitting and well-maintained, multi-modal transportation system is paramount to the state's economic strength and its citizens' 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 carriers and shippers, local air districts, electric and gas utilities, and multiple state agencies (e.g., ARB, California Energy Commission, Caltrans, California Public Utilities Commission).

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;
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.) and identification of expansion or improvement needs at seaport and airport facilities that handle cargo and issues regarding land side access to these facilities;
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-related 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 (COMBINED WITH #4 ABOVE);~~
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. Discussion of ITS and advanced technology opportunities for goods movement, with the aim of maximizing operational efficiencies and minimizing emissions.
12. 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 GHG 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.

California Freight Mobility Plan (Moved from Best Practices)

The state's 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 are encouraged to review the CFMP for guidance, and ensure consistency while addressing goods movement within their RTPs. The RTPs and the 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 CFMP.

Requirements (Shalls)

Federal: Title 23 CFR Part 450.324(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 450.324(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.

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:

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 Rural Freight Corridors (CRFCs):** These are public roads **not** in an urbanized area which provide access and connection to the Primary Highway Freight System (PHFS), and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities.

Best Practices: Available in Appendix M

~~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 CFMP GMAP for guidance, and ensure consistency while addressing goods movement within their RTPs. The RTPs and the CFMP GMAP 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 CFMP GMAP.~~

~~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://www.freightworks.org/Pages/default.aspx>~~

~~<http://www.trb.org/NCFRP/NCFRP.aspx>~~

~~<http://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm>~~

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

6.13 2 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.htm><http://dot.ca.gov/hq/planning/aeronaut/publication.htm>

The 2014 Caltrans Airport Forecasting Study, *The 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" described in Public Utilities Code (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 ALUC that works best for their needs. The PUC further specifies the types of powers and duties reserved for ALUC (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 RTPAs 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 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. RTPAs shall comply with this as well. 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.” 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.” The Transportation Research Board Airport Cooperative Research Program Report 146 provides resources and guidance regarding the development of the AGAIP. It can be found on the web at: <http://www.trb.org/Main/Blurbs/173350.aspx>. An additional ACRP web only ground access guide is also available at: <http://www.trb.org/Publications/Blurbs/173351.aspx>

Recommendations (Shoulds)

State: RTPAs should consider the needs of all commercial and general aviation public-use airports, heliports and military airfields and installations when planning transportation and infrastructure projects (i.e. by consulting with the sponsors) to further sustainable and compatible land uses around these anchor locations and circulation patterns.

Best Practices: Available in Appendix M

~~As a best practice, RTPAs 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~~

~~For questions and additional information regarding the state aviation program and its airport planning activities and the State's airport functional classes by region visit the Caltrans Division of Aeronautics website:~~

~~<http://www.dot.ca.gov/hq/planning/aeronaut/planners.htm>.~~

~~For additional information regarding airport land use compatibility concerns affecting airports please visit the Caltrans Division of Aeronautics website:~~

~~<http://www.dot.ca.gov/hq/planning/aeronaut/landuse.htm>~~

~~The Airport Land Use Planning Handbook is available at:~~

~~<http://www.dot.ca.gov/aeronaut/index.htm>~~

~~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>~~

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 level 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 statute 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 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 450.324(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. RTPA shall comply with this as well. 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: Available in Appendix M

~~As a best practice, RTPAs 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. Identify which governing body serves as each county's ALUC for the region established pursuant to Public Utilities Code 21670(a), as well as the title and date of the most current AICUZ and ALUCP for military airfields in the region.~~
- ~~5. 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).~~

- ~~6. 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.~~
- ~~7. Integrate military installation plans with other existing plans as described in Chapter 2, Sections 2.4 through 2.6.~~
- ~~8. 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-counterering-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.nceastmgf.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>~~

~~6.13 Bicycle & Pedestrian – Including AB 1396 California Coastal Trail~~

~~(MOVED TO SECTION 6.11)~~

~~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 RTPAs 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:~~

- ~~6. 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-stress¹⁴ trips to destinations;~~

¹⁴ ~~<http://www.peopleforbikes.org/blog/entry/mapping-comfort-part-i-how-psychological-stress-influence-bike-maps>~~

- ~~7. Policies, plans and programs used to promote the usage of bikes and walking;~~
- ~~8. Transit and rail interface with bicyclists and pedestrians;~~
- ~~9. Unmet bicycle and pedestrian needs; and,~~
- ~~10. 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.~~

~~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.coastal.ca.gov/access/acndx.html>~~

~~<http://www.coastal.ca.gov/access/coastal-trail-map.pdf>~~

Requirements (Shalls)

~~**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.~~

~~**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 Management & Operations

The RTP shall address 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) requires strategies for improving the regional transportation system and reducing congestion.

Best Practices: See Appendix M

~~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 Regional~~ Transportation Improvement Program (~~R~~F~~T~~I~~P~~) 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~~ ~~RTPA~~ as part of the ~~regional metropolitan~~ transportation planning process. ~~RTPA~~ ~~MPOs~~ work cooperatively with public transportation agencies as well as other local, state, and federal agencies to propose projects for inclusion in the ~~R~~F~~T~~I~~P~~. Each project or project phase in the ~~R~~F~~T~~I~~P~~ must be consistent with the approved RTP. The ~~R~~F~~T~~I~~P~~ must be updated at least every ~~four~~ ~~two~~ years.

Projects included in the RFTIP may include projects from two other State programming documents: (1) The purpose of the SHOPP program is to maintain safety, operational integrity and rehabilitation of the State Highway System. (2) 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 RFTIP.

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 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 450.2186.

The diagram in Appendix B illustrates the federal/state programming process.

Requirements (Shalls)

Federal: Title 23 CFR Part 450.2186(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 450.214.

6.16 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 RTPA in coordination with Caltrans 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) requires all regionally significant projects be included in the TIP regardless if the projects are to be funded with federal funds or not.

6.17 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, RTPAs should be sure to comply with current federal regulations. Title 23 CFR Part 450.306(g) 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(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.

Best Practices: Available in Appendix M

<http://www.bcag.org/Planning/index.html>

6.18 Performance Measures

MOVED TO CHAPTER 7 – PERFORMANCE MEASURES

~~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 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 FRTIP as a program, by furthering 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/cteliasion.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: None

State: ~~California Government Code Section 14530.1(b)(5) requires more detailed project specific information.~~

Best Practices: ~~Caltrans recommends using performance measures to measure the progress of regional projects. 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:~~ **verify information**

~~<http://www.dot.ca.gov/perf>~~

6.18 Future of Transportation & New Technology

While maintaining the current transportation network is often a priority for RTPAs, RTPAs need to be planning ahead for a future in which technology will transform the way that people move and live. RTPAs are ideally positioned to anticipate and be responsive to the needs of future generations. This section provides a summary of federal and State legislation to prepare for new technologies and innovations for the future of transportation.

Connected Vehicle Program

There are several activities related to the national Connected Vehicle Program that will certainly impact regional and local transportation agencies, in addition to Caltrans. Since 90% of the roadways in California are owned and operated by local agencies, including the 58 counties and more than 500 incorporated cities, it is critically important for them to be aware of and to plan for the implementation of connected vehicles.

RTPAs should be aware of the pending rule being considered by the National Highway Traffic Safety Administration (NHTSA) to mandate that equipment for vehicle-to-vehicle (V2V) communications, using a technology called "Dedicated Short-Range Communications" (DSRC), be installed in the light-duty passenger car fleet to enable applications that improve vehicle safety. As the government regulator for auto industry safety, NHTSA is expected to adopt this rule, as it did for other safety systems such as seat belts, airbags, and anti-lock brakes.

RTPAs should also be aware of the pending guidance from the Federal Highway Administration (FHWA) to transportation infrastructure owner/operators (Caltrans; counties; and cities) on what equipment they should consider installing in their infrastructure to support both V2V and vehicle-to-infrastructure (V2I) communications, again using DSRC. The best example of this equipment is the DSRC radios. These radios provide the communication capability that is essential for V2I applications. Roadside processors may also be necessary in some cases where the applications demands heavier computing requirements.

Unlike connected vehicles, the development of which is being led by the federal government, in partnership with state DOT's, regional transportation agencies, and the auto industry, automated vehicles are being developed by the technology industry, including companies such as Google, Tesla, and Delphi. So far, their philosophy has been to avoid dependence on the infrastructure. However it is difficult to achieve vehicle automation and connected vehicle (CV) applications without appropriate support from the infrastructure. The infrastructure needs to be upgraded with DSRC radios and roadside processors. The roadside processors are not an absolute requirement but may be required in some cases.

Title 23 USC Section 518 requires the US DOT Secretary establishing guidance for recommended implementation path for V2V and V2I communication system deployment. Title 23 USC Section 519 ensures that funds are available for the development of Intelligent Transportation System (ITS) Infrastructure, equipment and systems.

Best Practices: Available in Appendix M

~~This document explains licensing requirements transparent and best practices accessible to any organization, public or private, seeking to deploy "Connected Vehicle" Dedicated Short Range Communications (DSRC) Roadside Units (RSU) and services that support vehicle-to-infrastructure (V2I) applications.~~

~~<http://ntl.bts.gov/lib/56000/56900/56950/FHWA-JPO-16-267.pdf>~~

~~This guidance is intended to assist system owner/operator staff to deploy V2I technology not only in terms Federal Aid Highway program requirements but also practices to help ensure interoperability and efficient and effective planning/procurement/operations.~~

~~http://www.its.dot.gov/meetings/pdf/V2I_DeploymentGuidanceDraftv9.pdf~~

~~SCAG's RTP/SCS Mobility Innovations Appendix:~~

~~http://scagrtpscscs.net/Documents/2016/draft/d2016RTPSCS_MobilityInnovations.pdf~~

6.19 20 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. RTPAs 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 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(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 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 has 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.

Strategic Highway Safety Plan

~~As a result of new Federal law requirements contained in SAFETEA-LU~~, 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 (SHSP) in their RTPs.~~ RTPAs will also be held to this same level of addressing safety during the development of their RTPs.

~~SHSPs were first required under SAFETEA-LU, which established the Highway Safety Improvement Program (HSIP) as a core federal program. The FAST Act continues the HSIP as a core Federal-aid program and the requirement for States to develop, implement, evaluate and update an SHSP that identifies and analyzes highway safety problems and opportunities on all public roads no less than every five years. As a result of new federal requirements contained in SAFETEA-LU,~~ Each State must have a Strategic SHSP in place ~~by October 1, 2007~~ to receive its full share of federal transportation funds.

Each RTPA should review the California SHSP during the preparation of the portion of the RTP addressing safety. ~~The 2015 SHSP Update is guided by federal guidelines capitalizing on successes achieved to date and continue to create even greater improvements. It also addresses goals established by Congress and the President by the Moving Ahead for Progress in the 21st Century (MAP 21 :~~

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. ~~Includes Serves as a five-year guide for the implementation of specific projects and activities through 2010.~~
 - ~~Increases the focus on reducing the number of severe injuries and the rate at which severe injuries occur in each 100 million vehicle miles travelled~~
 - ~~Measure the cost effectiveness of improvements~~
 - ~~Develops strategies and actions to address the more difficult problems:~~

- ~~○ Repeat DUI offenders~~
- ~~○ Breath test refusals~~
- ~~○ Drug-impaired driving~~
- ~~● Identifies the locations of fatalities and severe injuries~~
- ~~● Identifies areas with high-risk factors for potential injuries~~
- ~~● Includes tribal roads~~
- ~~● Creates improvements to rail-highway crossings~~
- ~~● Involves even more safety stakeholders from across the state~~
- ~~● Involves the public to create a culture of traffic safety~~
- ~~● Coordinates with other safety statewide plans, including the California Transportation Plan, the California Freight Plan and the Highway Safety Plan~~
- ~~● Improves the speed of data results~~

The California SHSP is available on the Caltrans website at:

<http://www.dot.ca.gov/hq/traffops/survey/SHSP/>

Safety Performance Measures

The MAP-21/FAST Act established Safety Performance Management (PM) as part of the overall Transportation Performance Management (TPM) program, which FHWA defines as a strategic approach that uses system information to make investment and policy decision to achieve national performance goals. The Safety PM regulation supports the HSIP, as it establishes safety performance measure requirements for the purpose of carrying out the HSIP and to assess fatalities and serious injuries on all public roads.

The Safety PM establishes five performance measures as the five-year rolling averages for:

1. Number of Fatalities
2. Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
3. Number of Serious Injuries
4. Rate of Serious Injuries per 100 million VMT, and
5. Number of Non-motorized Fatalities and Non-motorized Serious Injuries.

The Safety PM regulation also establishes the process for Caltrans and MPOs to establish and report their safety targets, and the process that FHWA will use to assess whether Caltrans has met or made significant progress toward meeting their safety targets.

The California HSIP is available at:

<http://dot.ca.gov/hq/LocalPrograms/hsip.html>

Requirements (Shall)

Federal: Title 23 CFR Part 450.306(b)(2) states the planning process will address the safety of the transportation system for the public.

Recommendations (Should)

Federal: Title 23 CFR Part 450.306(d)(4) 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 450.324(h) states the RTP should include a safety element that incorporates or summarizes the priorities, goals, countermeasures or projects for the RTPAs MPOs region contained in the SHSP.

6.20 4 Transportation Security

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.

In developing the RTP, RTPAs are required to consult with agencies and officials responsible for other planning activities with in the region including natural disaster risk reduction. The RTP should identify the primary agencies responsible for preparing the necessary plans should a wide scale evacuation be necessary. The 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;
8. Alternative Routes – Rural areas typically do not have large scale highways and transit, which makes it critically important to identify alternate emergency evacuation routes; and,
9. 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(b)(3) states the planning process will address the security of the transportation system for the public. **23 CFR 450.316(b) requires consultation with agencies and officials responsible for planning natural disaster risk reduction.**

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450. 324(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.

6.21 Assessment of Capital Investment & Other Strategies

MAP-21/FAST adds a new RTP requirement that will take years to fully implement. The timeline for implementation is outlined in 23 CFR Part 450.340. The new RTP requirement is an assessment of capital investment and other strategies to:

1. Preserve the existing and projected transportation infrastructure;
2. Provide for multimodal capacity increases based on regional priorities and needs; and,
3. Reduce the vulnerability of the existing transportation infrastructure to natural disasters.

The RTP may consider projects and strategies that address areas or corridors where current or projected congestions threatens the efficient functioning of key elements of the metropolitan area's transportation system.

Requirements (Shalls)

Federal: 23 CFR 450.324(f)(7)

6.22 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 GHG 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 GHG emissions. The approach to TSM and operations shall be integrated into system planning documents.

Coordination of Project Programming

Programming of projects shall be scheduled so that project sequencing in a corridor achieves the most effective performance results. In State Highway System corridors the system planning documents should identify the most effective project sequencing, including projects identified for major local arterials. System planning strategies to address performance issues can include: system evaluation and monitoring, maintenance and preservation, smart land use and demand management, Intelligent Transportation Systems, operational 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 CSMPs and TCRs. The RTP should include by corridor all **multimodal** 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~~ **provide for safe and effective integrated management and operation of the multimodal transportation system** across jurisdictions and modes to improve corridor performance based upon performance measurement. The financial element of the RTP should identify funding by corridor to implement projects and strategies identified in system planning documents. Approaches to improving corridor performance can include new ~~capacity and existing facilities~~, improved maintenance and operation of existing infrastructure, investing ~~in~~ and encouraging the use of alternative modes (such as transit, rail, bicycling and walking), encouraging smart land use, **and** integrated corridor management strategies, among others.

The RTP should 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.

Recommendations (Shoulds)

Federal: Title 23 CFR Part 450. 322(b) states the congestion management process should result in performance measures that can be reflected in the RTP.

Regional GHG Emissions Considerations in the RTP

6.23 Land Use & 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 GHG (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
- **Employer-sponsored shuttle services**
- 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
- **Create active transportation plans**
- **A school district may provide bussing to students based on the distance from a school, other hazards to walking to the school, or other district criteria. Consider opportunities to incorporate existing and planned school district busing to supplement and complement public transit options.**
- **Consider opportunities to protect or improve designated and proposed school district safe routes to school in community wide transportation strategies and investments (e.g. transit improvements bifurcating neighborhoods near schools disrupting pedestrian/bike access).**

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 GHG emissions ~~in the SCS, MPOs RTPAs~~ should consider identifying and to the extent possible, quantifying the co-benefits associated with GHG emissions reduction strategies throughout the RTP implementation processes. Co-benefits are positive externalities that result from reducing GHGs 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.

Best Practices: Available in Appendix I

6.24 Non-MPO Rural RTPA Addressing GHG Emissions

Rural RTPAs have a unique set of challenges compared to urbanized areas to reduce regional transportation related GHG 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 SCS to meet a regional GHG emissions reduction target.

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)

State: Public Resources Code, Section 21000, et seq.

6.25 Adaptation of the Regional Transportation System to Climate Change

~~Recent science suggests~~ In 2014, the Intergovernmental Panel on Climate Change concluded that further effects of climate change are inevitable despite planned and implemented mitigation efforts. To help regions prepare for these effects, Caltrans' 2013 report "Addressing Climate Change Adaptation in Regional Transportation Plans: A Guide for California MPOs and RTPAs¹" provides methods to incorporate impacts of climate change into future long-range transportation planning and decisions. ~~There are a~~ A number of studies (Risky Business², Pacific Institute¹³, UC Merced and RAND Corporation²⁴, American Society of Civil Engineers⁵, Next10 and U.C. Berkeley³⁶) ~~that estimate~~ quantify the high costs associated with climate impacts such as rising sea levels, changing wind and precipitation patterns, increasing temperatures, and wildfire damage resulting from changes in the climate.

~~A new focus on~~ Adaptation planning is ~~rapidly becoming~~ very important for cities and counties across California. Because of its natural and 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 rising maximum and minimum~~ temperatures, ~~less snowpack and~~ earlier snowpack melt, ~~drought and other~~ changing precipitation patterns, increased severity of wildfires, sea-level rise, extreme weather events, ~~and which will lead to~~ numerous changes and effects on biodiversity and habitats.

~~The impacts listed above may have negative~~ Building on decades of successful actions to reduce pollution, increase energy efficiency and mitigate the effects of climate change; California has long been at the forefront of global and national efforts to reduce the threat of a changing climate. The increasing likelihood of severe, pervasive and irreversible impacts are expected to have potentially catastrophic impacts on the transportation system ~~specifically including~~ resulting in flooded airports, interstate highways and roads, landslides ~~resulting in that~~ disrupted traffic flow and rail lines, heat waves and subsidence causing roadways to buckle; and, increased costs of transportation infrastructure operations and maintenance due to fire damaged, erosion and inundation ~~watersheds that have resulted in mudslides~~. The degree of risk for the State's transportation infrastructure system is uncertain and since climate impacts are location-specific, it makes sense to address concerns regionally.

Impacts and outcomes of a changing climate depend on unknown probabilities and immeasurable components being focused on by scientists and advanced model forecasters. The potential for consequences to life, health and safety, the environment, economic well-being, and other values needs to be assessed in terms of probable risks and exposures, the likelihood of an event occurring (probability), and the anticipated damages that would result if it did occur (consequences) ~~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 2015, the Governor's Executive Order B-30-15 created a roadmap for climate adaptation progress around the foundation of prior state efforts to build climate preparedness and reduce GHG emissions. The Executive Order directs:

1. The preparation of implementation plans for the actions recommended in California's Adaptation Strategy, the Safeguarding California Plan and sector reports to the California Natural Resources Agency describing progress towards implementation.

2. State agencies to employ the following guiding principles in all planning and investment decisions:
 - prioritize actions that both build climate preparedness and reduce GHG emissions;
 - where possible, choose flexible and adaptive approaches to prepare for uncertain climate impacts;
 - protect the state's most vulnerable populations; and,
 - prioritize natural infrastructure solutions.
3. Perform a full life-cycle cost accounting on infrastructure projects to evaluate and compare investments and alternatives.
4. All infrastructure projects included in the state's annual Five-Year Infrastructure Plan must take into account the current and future impacts of climate change.
5. The establishment of a Technical Advisory Group through the *Governor's Office of Planning and Research* (OPR) to help state agencies incorporate climate change impacts into planning and investment decisions.

Additionally, three laws were signed in 2015, providing important context for RTPAs and MPOs considering climate impacts as they formulate their RTPs:

- **AB 1482** directs ongoing updates to the Safeguarding California Plan (beginning in 2017) and requires future updates (every three years) to describe the vulnerabilities from climate change in a minimum of nine specific sectors, and the priority actions needed to reduce climate risks in each of those sectors.
- **SB 246** establishes the Integrated Climate Adaptation and Resilience Program at the *Governor's Office of Planning and Research* to coordinate regional and local efforts with the state's climate adaptation strategies; and to establish a climate adaptation clearinghouse that centralizes best scientific evidence, available climate data and information for use in planning and implementing state, regional, and local climate adaptation projects. This bill also directs the *Office of Emergency Services* to update the California Adaptation Planning Guide, within one year of an update to the Safeguarding California Plan, to provide current tools and guidance to regional and local governments and agencies that are adopting and implementing climate adaptation and community resiliency plans and projects.
- **SB 379** requires local hazard mitigation plans to incorporate climate impacts by 2021; through coordination with an update to local jurisdictions' General Plan Safety Element (see OPR's 2016 edition of the General Plan Guidelines).

The state has developed tools and resources to help inform and empower local decision-makers to incorporate climate impacts into their work. Cal-Adapt.org⁷ is an online platform created in 2011 by the California Energy Commission to synthesize the best available climate science and generate spatially-explicit visualizations for local policymakers and the general public. Planners can find sophisticated locality-specific projections for many temperature metrics, wind and precipitation patterns, wildfire risk, snowpack and sea-level rise. The Adaptation Planning Guide⁷, released by the Natural Resources Agency in 2012, helps regions and communities prepare for those projected impacts. *The Governor's Office of Planning and Research* has incorporated these resources into the 2016 General Plan Guidelines to create comprehensive planning processes for local governments.

~~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 (MPOs) 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.dot.ca.gov/hq/tpp/offices/orip/climate_change/documents/FR3_CA_Climate_Change_Adaptation_Guide_2013-02-26_.pdf#zoom=65
2. <http://riskybusiness.org/site/assets/uploads/2015/09/California-Report-WEB-3-30-15.pdf>
3. http://www.pacinst.org/reports/sea_level_rise/
4. <http://www.energy.ca.gov/2009publications/CEC-500-2009-048/CEC-500-2009-048-D.PDF>
5. <http://ascelibrary.org/doi/pdfplus/10.1061/9780784479193>
6. <http://www.energy.ca.gov/2009publications/CEC-500-2009-014/CEC-500-2009-014-D.PDF>
7. <http://cal-adapt.org/>
8. http://resources.ca.gov/climate/safeguarding/adaptation_policy_guide/
9. https://www.opr.ca.gov/s_generalplanguidelines.php
10. <http://resources.ca.gov/docs/climate/safeguarding/Transportation%20Sector%20Plan.pdf>

Recommendations (Shall)

State: Public Resources Code 71154 requires that state agencies ensure that state investments consider climate change impacts. Executive Order B-30-15 provides further context to this statute through its requirements to:

- All state agencies with jurisdiction over sources of GHG emissions shall implement measures pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reduction targets.
- Incorporate climate change impacts into all projects in the State's Five-Year Infrastructure Plan.
- Take climate change into account in all state funded planning and investment decisions (including local assistance programs).
- Employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives.

Recommendations (Should)

State: California Environmental Quality Act CEQA, Public Resources Code 21000, et seq. Executive Order B-30-15, Senate Bill 246, and Assembly Bill 1482

RTPAs should begin to address climate change in their long-range transportation plans using Caltrans guidance, including ["Addressing Climate Change Adaptation in Regional Transportation Plans: A Guide for California MPOs and RTPAs, Cal-Adapt.org"](#) and other state resources (see Climate Adaptation Resources table). Design and planning standards should be re-evaluated to address future conditions. MPOs and RTPAs should consult Safeguarding California's transportation chapter, the California Coastal Commission Sea Level Rise Policy Guidance, and where possible, local General Plan safety elements and Hazard Mitigation Plan documents, as well as other relevant local, regional, and state plans, resources and documents.

Executive Order B-30-15 directs that all infrastructure projects paid for in full or in part through state funds are required to consider climate adaptation, and should apply the following principles:

- Prioritize actions that both build climate preparedness and reduce GHG emissions.
- Where possible, choose flexible and adaptive approaches to prepare for uncertain climate impacts.
- Take actions that protect the state's most vulnerable populations.
- Prioritize natural infrastructure solutions.

Best Practices: Available in Appendix M

~~Regional Transportation Plans should incorporate climate impacts in conjunction with the update of local hazard mitigation plans and General Plan safety elements as jurisdictions begin compliance with Senate Bill 379 (Government Code 65302).~~

~~Notwithstanding a lack of reliable information on the future impacts of sea level rise, precipitation changes, or extreme heat events, MPOs should begin to address climate change in their long-range~~

~~transportation plans using Caltrans guidance, Cal-Adapt.org and other state resources (see Climate Adaptation Resources table). Design and planning standards should be re-evaluated to address future conditions. Where possible, MPOs and RTPAs should consult *Safeguarding California's* transportation chapter, local general plan safety elements, local hazard mitigation plans, and other relevant local, regional, and state resources and documents. 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.~~

Climate Adaptation Resources for RTPAs and MPOs		
<i>Title of Resource</i>	<i>Origin and Use</i>	<i>Website</i>
2013 - Addressing Climate Change Adaptation in Regional Transportation Plans: <i>A Guide for California MPOs and RTPAs</i>	Caltrans	http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/documents/FR3_CA_Climate_Change_Adaptation_Guide_2013-02-26_.pdf#zoom=65
Guidance on Incorporating Sea Level Rise: For use in the planning and development of Project Initiation Documents	Caltrans	http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/documents/guide_incorp_slr.pdf#zoom=65
Cal-Adapt.org	Energy Commission	www.cal-adapt.org
Adaptation Planning Guide	Office of Emergency Services	http://resources.ca.gov/climate/safeguarding/adaptation_policy_guide/
2014 Safeguarding California Plan (California's Adaptation Strategy)	Natural Resources Agency	http://resources.ca.gov/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf
2016 Safeguarding California: Implementation Action Plans, Transportation Sector	Natural Resources Agency and the State Transportation Agency	http://resources.ca.gov/docs/climate/safeguarding/Transportation%20Sector%20Plan.pdf
State of California Sea-Level Rise Document	Ocean Protection Council	http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/
2016 General Plan Guidelines	Governor's Office of Planning and Research	https://www.opr.ca.gov/s_generalplanguidelines.php
Sea-Level Rise for the Coasts of CA, OR, & WA	National Academies of Sciences	https://www.nap.edu/catalog/13389/sea-level-rise-for-the-coasts-of-california-oregon-and-washington
California Coastal Commission Sea Level Rise Policy Guidance	California Coastal Commission	http://www.coastal.ca.gov/climate/slrguidance.html

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Chapter 7

Performance Measures

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7.1 ~~6-18~~ Goals & Performance Measures

Regional Transportation Plans are developed to reflect regional and local priorities and goals and they are also instruments of achieving federal and state transportation system goals. A clear articulation of regional goals helps regions select project in furtherance of those goals, but also helps the federal and state government understand how the regional plans will contribute to statewide or nationwide goals. To accomplish this, RTPs shall articulate regional goals in the following areas, with some of these already required in state or federal law, and others determined important in tracking achievement toward the state's GHG reduction goals. If existing modeling and data are limitations for RTPAs, qualitative goals may be used instead of quantitative measures:

- Preservation of transportation infrastructure
- Improved mobility and accessibility
- GHG reduction and improved air quality
- Natural resources protection and land conservation
- Smart growth or sustainable land use development
- Affordable housing
- Jobs and housing balance
- Social equity
- Economic development
- Safety and security

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** 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 **ERTIP** as a program, by furthering 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 RTPAs. RTPAs should develop and implement their own performance measures on regional roads, transit, rail, bicycle and pedestrian facilities etc. **Regions shall include in the RTPs performance measures required by the federal government and any others the region believes helpful to achieve regional and state goals. Regions should consider inclusion of performance measures that would evaluate the following, with the level of detail and qualitative or quantitative nature of the measures determined by modeling capacity and the level of available project detail: ~~Examples of performance measures include:~~**

1. Preserve the Transportation System;
2. Safety & Security;
3. Improve Mobility/Accessibility;
4. System Reliability;
5. Economic Well Being;
6. Investment Equity;
7. Cost-effectiveness;
8. Environmental Quality;
9. **Conserving Habitat, Open Space, and Working Lands**
10. **Ensuring Habitat Connectivity;**
11. **Protecting Wetlands;**
12. **Sequestering Carbon to Reduce GHGs;**
13. **Public Health;**
14. **Health Equity;** and,
15. Customer Satisfaction.

Regions should consider use of the following criteria to ~~can~~ measure the performance of specific projects with the level of detail and qualitative or quantitative nature of the measures determined by modeling capacity and the level of available project detail:

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 vehicle miles traveled;
7. Increase in bicycling and walking trips;
8. **Decrease in acres of habitat, open space and working lands lost to conversion;**
9. **Percent of corridors with permeable habitat and infrastructure;**
10. **Percent of wetland area protected;**
11. **Tons of carbon sequestered or carbon dioxide emissions avoided;**
12. **Reduction of the disparity in health impacts in the most impacted communities relative to health impacts in less impacted communities;**
13. **Percentage of population within half mile of parks or open space;** and
14. 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 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 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 Section 19 and Appendix B~~ of the STIP Guidelines. ~~Attachment 4 Appendix B~~ has been developed to assist agencies with this task. Furthermore, ~~Attachment 4 Appendix B~~ 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:

<http://www.dot.ca.gov/hq/transprog/ctelaisson.htm>

<http://www.dot.ca.gov/hq/transprog/ocip/2016stip.htm>

Requirements (Shall)

State: ~~California Government Code Section 14530.1(b)(5) requires more detailed project specific information.~~ California Government Code Section 14522 and Governor's Executive Order B-30-15.

Best Practices: Available in Appendix M

~~Caltrans recommends using performance measures to measure the progress of regional projects. 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>~~

7.2 Performance Based Approach (Need to tailor for RTPAs – please provide feedback)

New federal regulations require MPOs to implement a performance based approach in the scope of the metropolitan transportation planning process. However, first MPOs, in coordination with the State and public transportation providers, will establish, to the maximum extent practicable, an appropriate target setting framework. Federal regulations define the implementation timeline for satisfying the new requirements for MPOs as two years from the effective date of each rule establishing performance measures under 23 USC 150(c), 49 USC 5326, and 49 USC 5329 FHWA/FTA. Although this new requirement will take years to implement and FHWA is in the process of developing and finalizing the national performance management measure regulations, this section is intended to provide a summary of the additional requirements specific to RTP development. The federally required performance-based approach specifically added two components to the RTP:

1. A description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with 23 CFR 450.306(d); and,
2. A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in 23 CFR 450.306(d), including –
 - a. Progress achieved by the MPO in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data; and,
 - b. For MPOs that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets.

The FHWA maintains a Performance Based Planning and Programming Guidebook to help identify potential packages of strategies to achieve performance-based objectives, as well as the data and tools used to determine which strategies may be most effective, available at:

~~http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/page06.cfm~~

Requirements (Shall)

Federal: 23 CFR 450.306; 23 CFR 450.324(f)(3) & (4); 23 CFR 450.340(e) & (f)

State: California Government Code Section 14522 and Governor’s Executive Order B-30-15. ~~14530.1(b)(5) requires more detailed project specific information.~~

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. Air Quality Conformity Checklist for Isolated Rural Non-Attainment/Maintenance Areas
- I. Land Use and Transportation Strategies to Reduce Regional GHG Emissions
- K. Glossary of Transportation Terms
- ~~L. AB 441 – Promoting Health and Health Equity in MPO RTPs~~
- M. Examples of Planning Practices that Exceed Statutory Authority

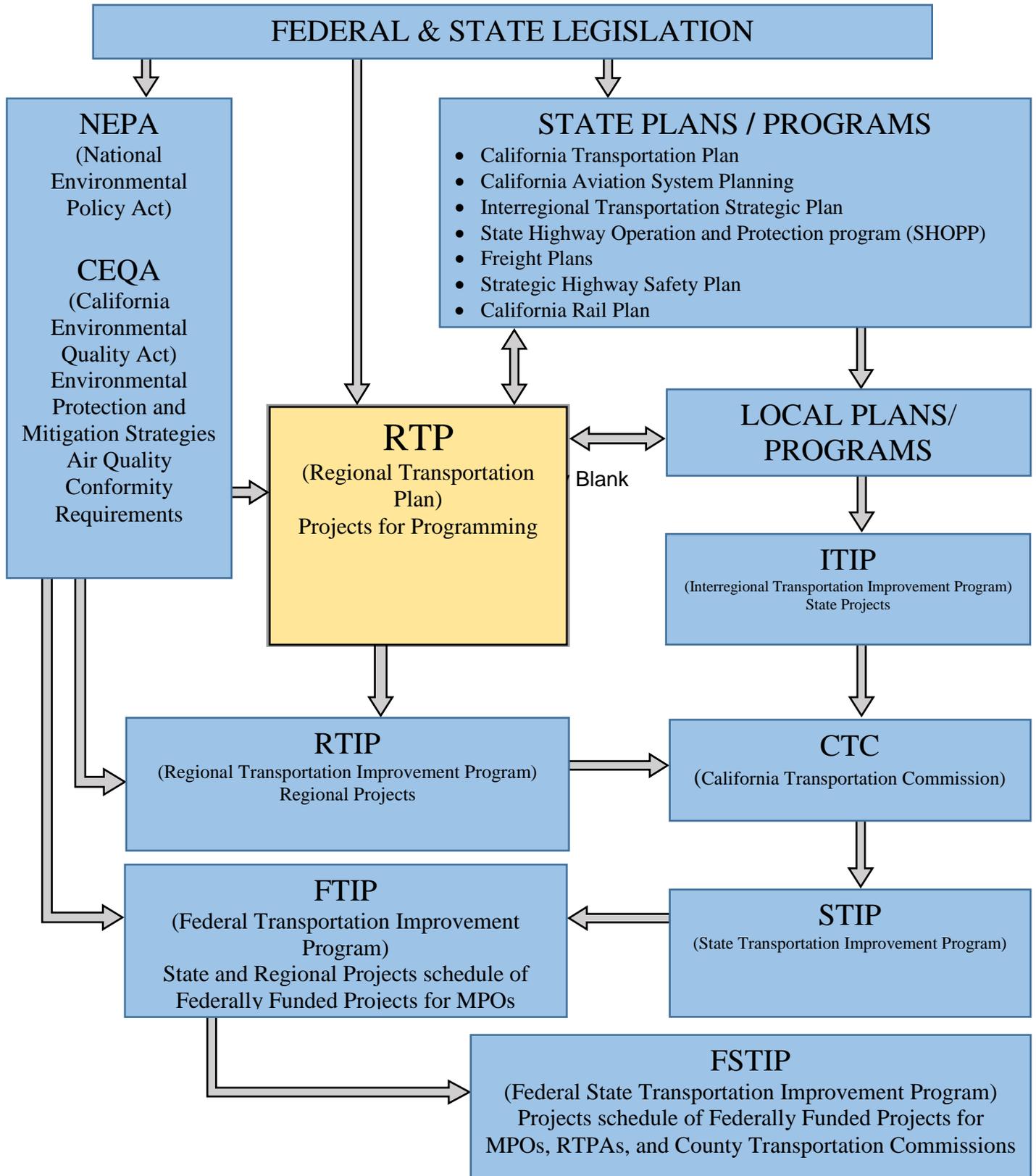
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Appendix A

Federal and State Transportation Planning Process Flowchart

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Regional Transportation Planning and Programming Process



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.

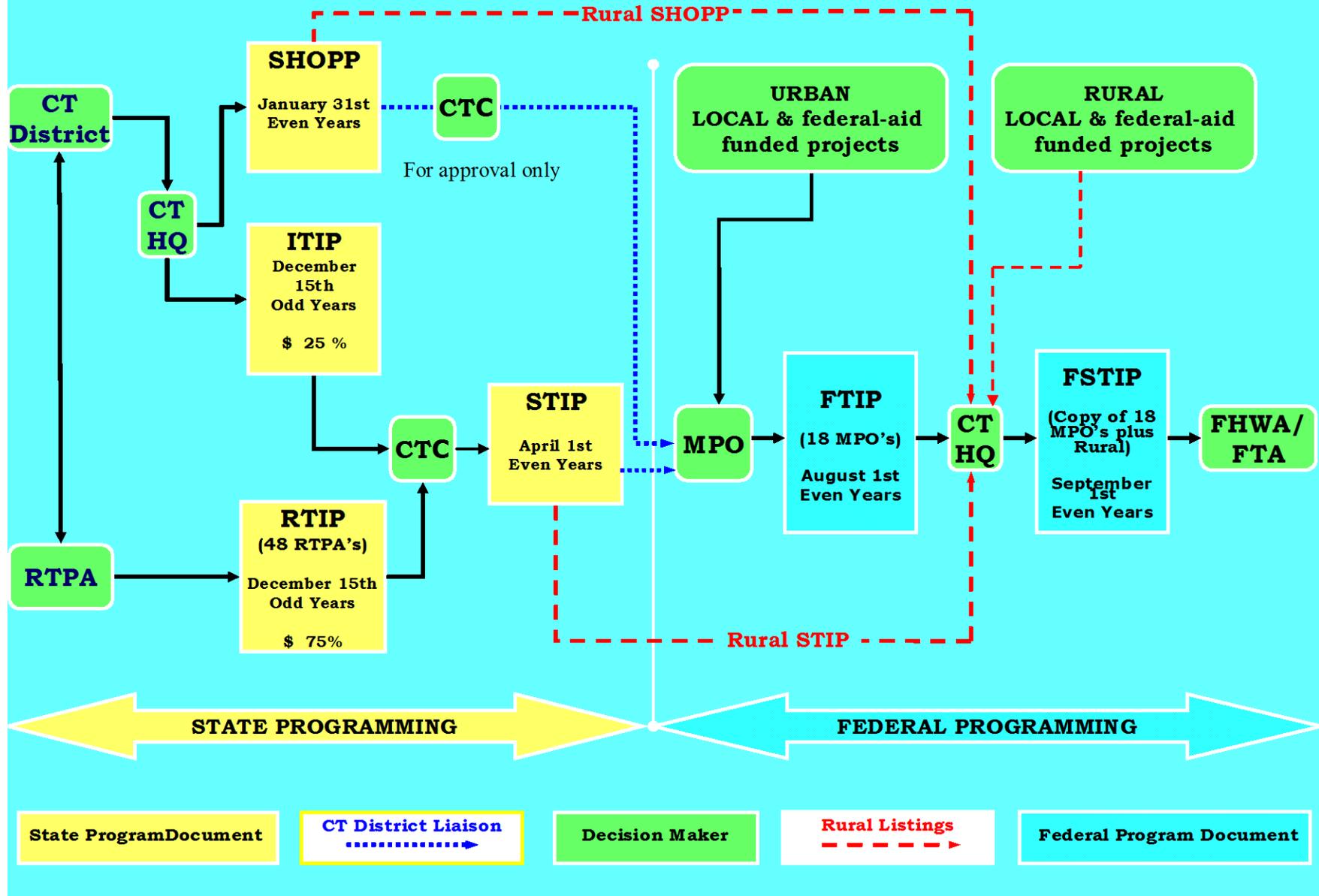
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Appendix B

State and Federal Programming Process Flowchart

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State and Federal Programming Process



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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

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 #

	Yes/No	Page #
e. 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)?		

- 12. If the RTPA elected to align the RTP with the Regional Housing Need Allocation (RHNA), was the RTP adopted on the estimated date provided in writing to State Department of Housing and Community Development to determine the RHNA and planning period (start and end date) and align the local government housing element planning period (start and end date) and housing element adoption due date 18 months from RTP adoption date? (Government Code 65588(e)(5))

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Title VI and Environmental Justice

- 1. Does the public participation plan describe explicit procedures, strategies, and desired outcomes for seeking out and considering the needs of low-income and minority households? (23 C.F.R. § 450.316 (a) (1) (vii).)
- 2. If the RTPA is a federal fund recipient, are funds available to local organizations that represent low-income and minority populations to enable their participation in planning processes? (FHWA/FTA, Memorandum re: Implementing Title VI Requirements in Metropolitan and Statewide Planning (Oct. 7, 1999), pp. 1-2.)
- 3. If the RTPA is a federal fund recipient, does the RTP include a description of the needs of low-income and minority populations that were identified and considered within the planning process; of the procedures by which those needs were identified and considered; of which of those needs the RTP will address; and of the investments, actions and timeframe by which the RTP will address them? (23 C.F.R. § 450.316 (a) (1) (vii); FTA, Title VI Circular, Ch. VI, §2; U.S. Department of Transportation, Updated Environmental Justice Order 5610.2(a) (amended 5/2/2012), pp. 14-15, App. sec. 1 (f); Federal Transit Administration Circular 4703.1, “Environmental Justice Policy Guidance for Federal Transit Administration Recipients” (Aug. 15, 2012), p. 2.)
- 4. If the RTPA is a federal fund recipient, does the RTP ensure that low-income populations and minority populations are protected against an unfair share of the burdens of the RTP and its investments, including the impacts of displacement and segregation? (U.S. Department of Transportation, Updated Environmental Justice Order 5610.2(a) (amended 5/2/2012), pp. 14-15, App. sec. 1 (f); Federal Transit Administration Circular 4703.1, “Environmental Justice Policy Guidance for Federal Transit Administration Recipients” (Aug. 15, 2012), p. 2, 49 CFR Section 21.5 (b) (1).)

Modal Discussion

- 1. Does the RTP discuss intermodal and connectivity issues?

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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?

Yes/No	Page #

Programming/Operations

- ~~1. Is a congestion management process discussed in the RTP? (23 CFR part 450.450.320(b)) (MPOs designated as TMAs only)~~
1. Is the RTP consistent (to the maximum extent practicable) with the development of the regional ITS architecture? (23 CFR 450.306(g))
 2. Does the RTP identify the objective criteria used for measuring the performance of the transportation system?
 3. 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? (65080(b)(4)(A)2006 STIP Guidelines, Section 19)
3. Do the projected revenues in the RTP reflect Fiscal Constraint? (23 CFR part 450.3242(f)(110)(ii))
4. Does the RTP contain a list of financially constrained projects? Any regionally significant projects should be identified. (Government Code 65808(3)(A))

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 450.3242(f)(110)(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 450.3242(f)(110)(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))~~

Yes/No	Page #

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)~~
3. Does the RTP specify mitigation activities? (23 CFR part 450.3242(f)(107))
4. Where does the EIR address mitigation activities?
5. Did the ~~MPO~~/RTPA prepare a Negative Declaration or a Mitigated Negative Declaration for the RTP in accordance with CEQA guidelines?
6. 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

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]dentifying 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 *Serville 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.3d 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

[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 siting 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

Air Quality Conformity Checklist For Rural Isolated Non-Attainment/Maintenance Areas

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Conformity Analysis Documentation
Checklist for Rural Isolated Non-attainment/Maintenance Areas

Checklist under development - will be in the final draft

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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. **Consider school districts’ facilities master plans and transportation policies in the coordination of regional planning efforts.**
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.
7. **In setting priorities, consider transportation projects that provide public health co-benefits.**
8. **Employ “Fix It First” policies to ensure that preventive maintenance and repair of existing roads are the highest priority for spending, to reduce overall maintenance costs, and to support development in existing centers and corridors.**

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
- **Innovative and Emerging Shared Mobility Services (i.e., bikeshare, carshare, and on-demand rideshare services)**

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>

SANDAG's Regional Parking Management Toolbox contains resources for parking and demand management. The Regional Parking Management Toolbox can be found here:

http://www.sandag.org/uploads/publicationid/publicationid_1910_18614.pdf

Appendix K

Glossary of Transportation Terms

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APCD	<u>Air Pollution Control District</u> , a county agency that adopts regulations to meet State and Federal air quality standards.
AQMD	<u>Air Quality Management District</u> , a regional agency formed by 2 or more counties, which adopts regulations to meet State and Federal air quality standards.
ATTAINMENT AREA	<u>Attainment Area</u> , 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	<u>Blueprint Planning</u> , 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	<u>Capacity</u> , is a transportation facility's ability to accommodate a moving stream of people or vehicles in a given time period.
CARB	<u>California Air Resources Board</u> , 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	<u>California Aviation System Plan</u> , 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	<u>California Environmental Quality Act</u> , State law that requires the environmental effects associated with proposed plans, programs and projects to be fully disclosed.
CMA	<u>Congestion Management Agency</u> , the county agency responsible for developing, coordinating and monitoring the Congestion Management Program.
CMP	<u>Congestion Management Program</u> 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~~ 4 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	<u>Interregional Transportation Improvement Program</u> 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	<u>Intelligent Transportation Systems</u> are electronics, photonics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
ITSP	<u>Interregional Transportation Strategic Plan</u> describes the framework in which the State will carry out its responsibilities for the Interregional Transportation Improvement Program (ITIP).
MIS	<u>Major Investment Study</u> 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	<u>Mode</u> is a specific form of transportation, such as automobiles, buses, trains or planes.
MPO	<u>Metropolitan Planning Organization</u> , a planning organization created by Federal legislation charged with conducting regional transportation planning to meet Federal mandates.
NATIONAL AMBIENT AIR QUALITY STANDARDS	<u>NAAQS</u> 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	<u>National Environmental Policy Act</u> 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 program proposal of projects prepared by the regions in coordination with Caltrans for inclusion in the STIP. ~~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	<u>Title VI</u> of the Civil Rights Act of 1964, prohibits discrimination in any program or project receiving Federal financial assistance.
TDM	<u>Transportation Demand Management</u> refers to policies, programs and actions that encourage the use of transportation alternatives to driving alone and reduce vehicle miles traveled. (1) decrease the demand on the highway system and (2) encourage the shifting or spreading out of peak hour travel periods.
TSM	<u>Transportation System Management</u> 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	<u>United States Environmental Protection Agency</u> is the Federal agency that approves the SIP and the emissions budgets that are the basis of the RTP conformity assessments. Page Left Intentionally Blank

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~~Appendix L~~

~~AB 441 - Promoting Health and Health Equity in MPO RTPs~~

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Introduction and Purpose of Appendix L

A growing body of evidence links built environment characteristics such as land use, neighborhood design, and transportation systems to health behaviors that can directly support or discourage healthy, active, and safe lifestyles. Considering and promoting goals, policies, and strategies within the RTP to: encourage walking and bicycling, increase access to affordable housing, jobs and services, reduce environmental pollutants, and engage community members in decision-making processes supports a healthier population and a more prosperous state. Assembly Bill 441 (2012, Monning) requires the RTP Guidelines to identify innovative planning practices that can serve as models for MPOs and their partner agencies in undertaking a regional transportation planning process that promotes the health and well-being of all Californians.

Appendix L has been prepared to serve as voluntary guidance to highlight cutting-edge examples of policies, programs, projects, and tools that MPOs are employing to address public health and health equity in the regional transportation planning process. It is important to note that this appendix is not intended to provide a “one size fits all” approach. In light of the diversity of California MPOs, and the varying level of financial resources and technical capabilities to undertake the long range regional transportation planning process, this appendix offers examples from both rural and urban regions, and recognizes the importance of a regionally appropriate approach to addressing health and health equity in the RTP.

Public Health and the RTP

The RTP identifies a 20 plus year vision for a regional multi-modal transportation network that is integrated with the land use planning of local jurisdictions to achieve local, regional, state, and federal goals. The long range transportation planning process is expected to balance a number of objectives and meet regionally defined goals that are informed by and support state and federal goals, from fostering economic growth and safety for all system users, to achieving environmental goals and promoting public health and quality of life.

An increasingly important consideration in long range transportation planning is how transportation can affect human health both directly and indirectly. A 2012 report published by Transform in collaboration with the California Department of Public Health “*Creating Healthy Regional Transportation Plans: A Primer for California’s Public Health Community on Regional Transportation Plans and Sustainable Communities Strategies*,” identified some of the direct and indirect effects of transportation projects and policies that are developed at both the regional and local level:

DIRECT EFFECTS

- **Physical Activity and Active Transportation.** Active transportation (walking, biking, and wheeling to destinations) has a direct health benefit, and can reduce the risk of heart disease, improve mental health, lower blood pressure, and reduce the risk of overweight and obesity related chronic disease such as Type 2

- Diabetes. Public transit is considered active transportation because it generally involves an active mode at the beginning or the end of the trip.
- **Collision Injuries and Fatalities.** Motor vehicle collisions are a major cause of death and injury, and are the leading cause of death among those ages 5-34. In 2009, traffic injuries caused 3,063 deaths, 25,328 hospitalizations, and 221,454 emergency department treatments in California. 18 percent of deaths, 19 percent of the hospitalizations, and 9 percent of the emergency department treatments were pedestrians and bicyclists. Road design, “Complete Streets,” speed reduction, and other strategies can all reduce the toll of motor vehicle collisions.
 - **Air Pollution.** Auto emissions impact air quality and contribute to impaired lung development, lung cancer, asthma and other chronic respiratory problems, and heart disease.¹⁰ Cleaner fuels and more efficient vehicles can reduce emissions, but strategies that reduce driving are also important for air quality because some pollutants, like particulate matter from re-entrained road dust, are directly related to how much people drive.
 - **Climate Change.** The transportation sector causes 38 percent of California’s total gross greenhouse gas emissions. Minimizing transportation’s contribution to climate change will limit the health effects of climate change, such as heat illness, effects of higher ozone levels, impacts of extreme weather events, and changes in vector-borne diseases.
 - **Stress and Mental Health.** Commuting during rush-hour traffic can be highly stressful for drivers. Unreliable and infrequent transit service can also cause stress, especially for low-income employees who depend solely on transit to get to their jobs on time.

INDIRECT EFFECTS

- **Access to Jobs.** For low-income families who cannot afford a car, public transit can be a lifeline to jobs. Social service agencies have found that inadequate transportation is one of the top three barriers to the transition from welfare to work.
- **Access to Services and Medical care.** When getting to health care or other essential services is difficult — and this is especially true for lower-income residents who don’t have access to a car or effective public transportation — patients often miss appointments or delay care until a condition deteriorates and requires emergency attention.
- **Household Expenses.** An astounding 19 percent of a household’s budget is now spent on getting from place A to place B. Low-income families are hit the hardest because transportation expenses account for a larger proportion of their income. This leaves much less for savings or investing in education, healthful food, etc. Regions can support increased economic stability and access to community necessities by assuring that all populations, and especially vulnerable populations such as youth, older adults, and low-income residents, have access to affordable and accessible transportation options.

- **Displacement/Gentrification.** Transportation improvements, especially new rail lines and stations to low-income communities, can increase access to opportunities. But they can also result in much higher property values and an increase in the cost of owning and renting property, inadvertently displacing existing residents and businesses. Being forced to leave a home is a stressful, costly and traumatic life event, especially when affordable housing is so limited. There is a growing recognition of tools and strategies that can be implemented alongside community investments to reduce displacement.
- **Social Cohesion and Social Networks.** Transportation planning and community design that facilitates active transportation, including public transportation, tends to increase social interaction and community cohesion. Increased neighborly interactions can help reduce crime, depression, and poverty, provide support and safety, and increase property values. Community cohesion and supportive transportation services are particularly important for vulnerable populations, including the elderly and disabled.

Cutting edge planning practice acknowledges the fact that public health outcomes are now understood to be the product of the Social Determinants of Health (SDOH), or the circumstances in which people are born, grow up, live, work, play and age. Economic opportunities, government policies, and the built environment all play a role in shaping the circumstances in which people live, work, play, and age and consequently influence public health outcomes such as rates of health conditions i.e. asthma, diabetes, obesity, depression, injuries, and some cancers. Because Regional Transportation Plans determine long-term investments in the built environment over extensive geographies, these plans can impact public health through multiple pathways, including economic opportunity, access to essential destinations, and the safety of communities and transportation options, as illustrated in the graphic below.

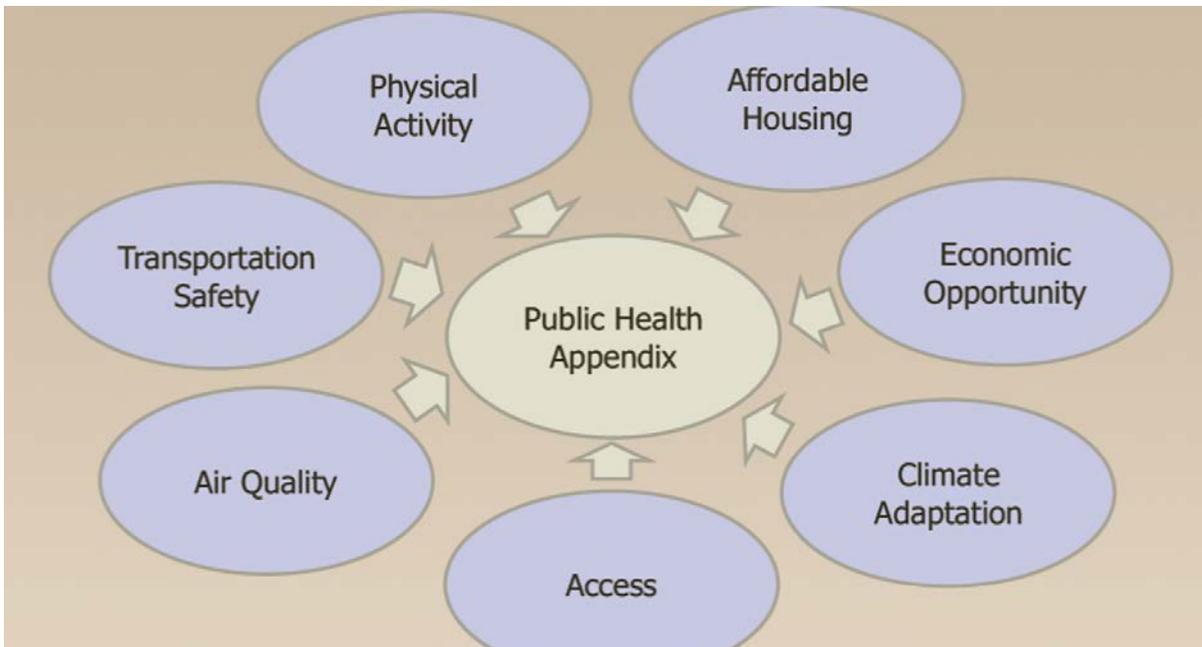


Image Credit: Southern California Association of Governments 2016-2040 RTP/ SCS Public Health Appendix

Health-focused transportation plans can help reduce the number of injuries and fatalities from collisions. Some research suggests that there is a multiplier effect: when streets are designed to safely accommodate walking and biking, more people do so, and as more people walk and bike the rate of collisions actually goes down as pedestrians and bicyclists become more visible to motorists. In addition, more people out walking and biking in a neighborhood has an important public safety benefit, as it means there are more “eyes on the street” to deter criminal activity. Taking this a step further, studies have shown that people who live in neighborhoods with less traffic and higher rates of walking, bicycling, and transit use know more of their neighbors, visit their neighbor’s homes more often, and are less fearful of their neighbors. When streets are inhospitable to pedestrians and bicyclists, residents don’t feel safe walking or biking to nearby transit and their ability to access regional educational and employment opportunities is hampered. In short, improving traffic safety results in better public health beyond simply reduced injuries and fatalities.

Additional examples of how transportation planning can promote health include:

- Transportation planning can help residents reach jobs, education, social services, and medical care by walking, biking or public transportation in a timely manner.
- Reducing commute times and increasing public transportation reliability can reduce stress and improve mental health.
- Affordable transportation options enable low-income households to invest in savings, education, and healthier food options—all factors that contribute to greater individual and community health.

While local governments have primary control over streets and roads in their jurisdictions, and county transportation agencies can generate funding by placing transportation sales taxes before voters, the interaction of transportation and land use happens most profoundly at a regional scale. Many of the greatest health, equity and environmental benefits of smarter planning and investment—from creating access to jobs for low-income communities, to protecting open space, to reducing air pollution—can only be fully realized at a regional scale through the collaborative regional planning process.¹ MPOs play a significant role in engaging residents and stakeholders in the regional transportation planning process to ensure the improvement of health outcomes for all segments of the population. A timely opportunity to address public health outcomes is early during the RTP development process and MPOs are encouraged to consider health priorities in selection of projects for the RTP.

¹ TransForm, 2012. *Creating Healthy Regional Transportation Plans*.
<http://www.transformca.org/resource/creating-healthy-regional-transportation-plans>

~~Policies, Programs, and Projects that Promote Health and Health Equity in RTPs~~

~~This section serves to identify examples of innovative policies, programs, and projects that California MPOs of varying size have employed to consider health and health equity in the RTP. This section encourages a regionally-appropriate approach to addressing health and health equity in the planning process. For example, regions with limited resources, especially rural regions, may be best served by selecting a few high-priority strategies where there is greatest opportunity to affect regional outcomes.~~

Goals and Policies:

Health in All Policies

~~The identification of regional goals and policies is an important part of the RTP development process. The Health in All Policies (HiAP) approach is one mechanism that facilitates the consideration of health in the RTP. HiAP is a collaborative strategy that aims to improve public health outcomes by including health considerations in the planning process across sectors and policy areas. The five key tenants of HiAP as defined by the California Department of Public Health include:~~

- ~~• Promote Health Equity and Sustainability~~
- ~~• Support Inter-Agency Collaboration~~
- ~~• Benefit Multiple Partners~~
- ~~• Engage Stakeholders~~
- ~~• Create Structural or Procedural Change~~

Urban MPO Example:

~~The regional planning process serves as a valuable forum for inter-agency collaboration and is uniquely suited for a HiAP approach. The Southern California Association of Governments (SCAG) incorporated the use of the HiAP policy framework in its 2016-2040 RTP/SCS. SCAG identified seven focus areas for further analysis and implementation related to the built environment's impact on health outcomes:~~

- ~~1. Access to Essential Destinations~~
- ~~2. Affordable Housing~~
- ~~3. Air Quality~~
- ~~4. Climate Adaptation~~
- ~~5. Economic Opportunities~~
- ~~6. Physical Activity~~
- ~~7. Transportation Safety~~

~~SCAG developed a comprehensive Public Health Appendix which features an in-depth discussion of the focus areas, a simple and clear graphic connecting the RTP goals to each of these focus areas, identification of the challenges and opportunities in these areas, adoption of guiding principles for the integration of public health considerations in the plan, a detailed report of plan performance in the public health focus areas, and examples of regional and local initiatives.~~

Rural MPO Example: [Need to identify a rural example]*Local Government General Plans and Policies*

Local jurisdictions are instrumental partners in the preparation of the RTP/SCS and are vital to its successful implementation. Local governments have exclusive land use authority and general plans are the mechanism by which long planning is conducted to provide for the public health and welfare of cities and counties within MPO regions. Local general plans serve as critical sources of information in the development of the RTP/SCS. The 2016 Draft General Plan Guidelines (GPG) prepared by the Governor's Office of Planning and Research (OPR) acknowledge this relationship and provides guidance on the relationship between the General Plan and regional plans.

The general plan development process has evolved to include elements beyond the seven mandated areas of land use, circulation, housing, open space, air quality, safety, and noise—for example, elements dedicated to health and equity. Chapter 5 of the 2016 Draft General Plan Guidelines (GPG) prepared by the Governor's Office of Planning and Research (OPR) identify the following health considerations for the General Plan development process:

1. Health and Economic Opportunity
2. A Changing Climate and Resiliency
3. Active Living and Recreation
4. Social Connection and Safety
5. Housing
6. Nutrition and Food Systems
7. Environmental Health; and
8. Health and Human Services

The GPG also provide guidance, strategies and approaches for:

1. Incorporating Health Considerations into General Plans
2. Innovative Partnerships and Collaboration
3. Sources of Support and Information for Health Considerations
4. Health Data and Mapping; and
5. OPR Recommended Policies

Chapter 6 of the GPG addresses Social Equity, Environmental Justice, and Community Resilience in the General Plan including relevant statutory requirements and definitions, examples of incorporating a social equity “lens” for the plan, government funding perspectives, data, mapping, and tools, examples of community engagement, incorporation of supportive policies and strategies for addressing community resilience.

The General Plan process is distinct and separate from the RTP/SCS and is carried out by local agencies, however it serves as an important opportunity for engagement to address regional goals and the plans themselves are foundational documents for the RTP/SCS. MPOs are encouraged to collaborate closely with local jurisdiction long-range planning staff, and share data and resources where appropriate to facilitate local and regional policy considerations and investments that promote health and health equity in the RTP/SCS.

State Air Quality and Land Use Guidance

The association between respiratory and other non-cancer health effects, and proximity to high traffic roadways, is addressed in ARB's Air Quality and Land Use Handbook. Diesel exhaust and other cancer causing chemicals emitted from cars and trucks, known as mobile source air toxics (MSATs), are responsible for much of the overall cancer risk from airborne toxics in California. ARB community health risk assessments have resulted in information that should be considered when siting new "sensitive land uses," including residences, schools, day care centers, playgrounds, and medical facilities. Sensitive land uses deserve special attention because children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Properly addressing these siting situations is an important preventative action. Any section of the RTP discussing highways, freight corridors, and other transportation facilities, should include the following:

- Discussion of the siting of new freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities, near sensitive land uses. The ARB Air Quality and Land Use Handbook contains siting recommendations
- Discussion of MSAT health risk and exposure reduction at sensitive land uses, where sensitive land uses are sited near highways, freight corridors, and other transportation facilities associated with high MSAT exposure (within the minimum distances indicated in the ARB Air Quality and Land Use Handbook). Local air districts often have protocols for discussion of health risk, and best management practices for exposure reduction. The Federal Environmental Protection Agency has also released *Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality*

Programs

Collaboration with Non-Transportation Agencies

Data development and technical analyses to consider public health and health equity in the RTP are very resource intensive and are often beyond the fiscal reach of small and rural agencies. One practical and non-resource intensive approach MPOs can use to understand regional public health and health equity issues is to engage in focused consultation with the local public health community and county public health departments, representatives from local school districts, community based organizations, and other non-transportation agencies. This type of outreach can yield valuable insight regarding identifying regional needs, opportunities for greatest impact, areas of existing community and decision-maker support as well as alignment with current and emerging policy direction and funding programs.

Urban MPO Examples:

To address public health more broadly in its planning process, SCAG has established a Public Health Subcommittee, a Public Health Workgroup, and is developing a Public Health Work Plan:

- The Public Health Subcommittee, outlined recommendations addressing the promotion of active transportation, enhancement of public health data, and engagement in collaborations.
- In accordance with the recommendations of the Public Health Subcommittee, SCAG formed a Public Health Workgroup to collaborate with regional stakeholders to develop a Work Plan of policy recommendations that further define SCAG's role in public health:
- For more information please visit the SCAG Public Health Program [webpage](#).

Health & Well Being in Regional Planning, Nashville Area MPO

Health in Transportation Planning, Pudget Sound Regional Council

Rural MPO Example:

[Shasta Regional Transportation Agency Coordination with Shasta County Department of Public Health]

Bicycle and Pedestrian Non-Infrastructure Programs

Non-infrastructure programs that promote public health, especially safe walking and biking, are just as essential as infrastructure projects that improve the built environment. Many people are uncomfortable or unfamiliar with how to navigate their communities on foot or bike, or feel unsafe doing so. Non-infrastructure programs are also essential to reducing greenhouse gas emissions because they make users more comfortable and familiar with how to walk and bike, thereby taking more cars and school buses off the

~~road. Programs such as Safe Routes to School, bike safety education programs and Vision Zero are some examples of non-infrastructure programs that can advance public health in the RTP.~~

~~The Safe Routes to School movement is focused around six “E”s: engineering, education, encouragement, enforcement, evaluation and equity. The first E, engineering, is focused on infrastructure projects that improve the built environment around schools. This is of particular importance in the RTP process given its focus on identifying transportation projects for funding. The second and third E’s are the heart of the non-infrastructure work with Safe Routes to School, and focus on getting more children to understand how to walk and bike safely to school and in their communities, and have fun doing it. Enforcement focuses on making sure existing traffic safety laws are enforced, and partnering with law enforcement and regulatory agencies to create safer environments for walking and bicycling. Evaluation looks at how effective the overall Safe Routes to School efforts are at increasing walking and bicycling. Finally, equity focuses on ensuring that students of all backgrounds and abilities can walk and bike safely, with a particular focus on disadvantaged communities, where there are often higher rates of students walking and biking, as well as higher rates of injuries and fatalities.~~

~~Safe Routes to School “non-infrastructure” efforts can be integrated into RTPs in several ways. First, MPOs can create Regional Safe Routes to School Plans that identify strategies for increasing walking and bicycling to school across the region. These plans would identify routes that are safe and convenient for walking and bicycling, as well as infrastructure improvements that could improve the commute for students making these trips. The plans would then be a resource when MPOs make decisions about where to prioritize transportation funding. Second, MPOs can integrate Safe Routes to School into the active transportation and complete streets sections of their RTPs, identifying strategies to increase walking and bicycling and improve safety as part of the overall active transportation goals. Third, Safe Routes to School can be a primary strategy to improve public health and health equity, because they focus on children and future generations living within the region.~~

~~Safe Routes to School is a mechanism to promote physical activity and thereby reduce obesity. It can also be a land use consideration in the SCS process, since the location of schools is a primary driver of how many students can walk or bike versus driven by their parents or a school bus. Safe Routes to School can also be a part of VMT reduction strategies, since around 10-14% of morning congestion is attributable to cars and buses driving children to school. Finally, MPOs can create distinct Safe Routes to School funding programs to allocate resources to communities and schools to run Safe Routes to School education and encouragement activities, as well as infrastructure improvements. It is important to note that many regions do not have the financial resources to undertake such a program; however MPOs are encouraged to strategically partner and pursue discretionary funding from the Active Transportation Program or~~

~~other sources to develop non-infrastructure plans and programs to address regional health and health equity issues.~~

~~Many more strategies can be found in the [Safe Routes to School National Partnership's Primer for Regional Governments](#)~~

~~“Vision Zero” is a campaign to reduce the number of pedestrian deaths to zero. It involves a culture change to reclaim streets for people rather than cars, and relies on significant collaboration across agencies, organizations, and community residents to work towards improving street safety.~~

~~How are MPOs characterizing Vision Zero in RTPs and are there any examples of regions that have integrated Vision Zero principles into the RTP?~~

~~Urban MPO Examples:~~

~~*Go Human* is a community outreach and advertising campaign with the goals of reducing traffic collisions in Southern California and encouraging people to walk and bike more. The program seeks to create safer and healthier cities through education, advocacy, information sharing and events that help residents re-envision their neighborhoods. *Go Human* is a collaboration between the Southern California Association of Governments (SCAG) and the health departments and transportation commissions from the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. *Go Human* is funded by a \$2.3 million grant from the 2014 Active Transportation Program.~~

~~Metropolitan Transportation Commission (MTC) [One Bay Area Grant \(OBAG2\) Program](#) provides specific funding opportunities for jurisdictions in the nine-county Bay Area region to invest in Safe Routes to School projects.~~

~~Rural MPO Example:~~

~~[Identify local safety campaigns, or other non-infrastructure projects that use ATP funds]~~

~~Strengthening Stakeholder Engagement in Communities Affected by Health Inequities~~

~~MPOs can strengthen stakeholder engagement in communities most affected by health inequities by identifying and proactively seeking the input of these households and by making meetings as accessible as possible. Engagement strategies may include:~~

- ~~• Proactively working with and/or providing financial support (if feasible) to community-based and membership organizations across the region to help engage low-income residents and residents of color in the public process and to jointly plan public workshops or other engagement opportunities.~~
- ~~• Form an advisory group on Environmental Justice, Social Equity and/or Disadvantaged Communities that includes policy and community-based organizations that are focused on social equity in the region to provide feedback throughout the RTP process.~~
- ~~• Creating resident advisory committees or roles within existing committees with decision-making authority and identify opportunities for disadvantaged communities to serve as representatives on decision-making bodies;~~
- ~~• Ensure that community residents have the opportunity to deliberate together to achieve consensus on their most pressing needs and recommendations.~~
- ~~• Creating a feedback loop to provide community members information about how their input was included in any drafts and reasons for including/excluding the input;~~
- ~~• Ensuring that there is agreement between residents and the local planning authority about what community engagement includes;~~
- ~~• Educating and building capacity of community members on issues such as data, evaluation, storytelling, and mentoring community members new to the process;~~
- ~~• Ensure Meetings are Convenient and Accessible: Hold multiple public meetings at times and locations that allow a diverse range of individuals and organizations, including communities with various family and work schedules, to attend such as meetings in the evening and on the weekends. Consider holding meetings at public facilities such as libraries, community centers, or neighborhood organizations that people are already familiar with and which are convenient to other destinations they may have to go before or after the meeting. Avoid holding public meetings during the day if feedback from the community is sought. Avoid government office buildings that require photo ID and security to enter. Ensure that interpreters are available when holding meetings in communities with a large population of people with English as a second language or who do not speak English at all. Translate materials, including electronic communications and invitations, to Spanish and other languages where appropriate.~~
- ~~• Provide childcare, food, and other amenities, or resource local community groups to do so.~~
- ~~• Add to the meeting agendas of neighborhood/community based organizations to facilitate a meeting where residents will be available, providing resources to the organization to assist.~~
- ~~• Use meeting locations within access to public transportation, walking and biking routes in addition to parking when selecting a facility. Many times agencies choose locations based on access to parking and busy routes like freeways, which are not as convenient for people who depend on public transportation or~~

- ~~other modes. Neighborhood and community based organizations and schools may let you use their meeting space.~~
- ~~• Consider neutral professional facilitation of public meetings to manage conflict and keep the meetings running on time.~~
 - ~~• As part of public process materials should be provided ahead of time and draft work product should be shared.~~
 - ~~• Public participation should also include ability to access underlying data on populations (household and person files) and travel patterns (trip lists with time and distances of trip segments) to statistically describe the baseline and alternative scenarios by mode and other characteristics. This approach may better address specific questions of the public and complement limited analytic resources of MPOs~~
 - ~~• Expanding the list of potential partners to include: schools, the faith community, agriculture and food hubs, local business or chambers of commerce, health providers and public health sectors, funders/philanthropy, academia, and environmental health/justice advocates, libraries, law enforcement, parks and recreation, and the technology industry;~~
 - ~~• Using a community health worker or *promotora* model to identify resident leaders;~~
 - ~~• Using facilitators with experience in race and power inequities at community meetings;~~
 - ~~• Working with community-based and membership organizations across the region to jointly plan public workshops on the RTP, especially the Title VI and Environmental Justice analyses. They know the communities impacted by the RTP transportation projects and can assist with recruiting residents, businesses and other affected stakeholders. Be proactive in asking for their participation instead of waiting for them to come to you; and,~~
 - ~~• Ensuring meetings are attended by MPO decision makers in addition to MPO staff.~~

Urban MPO Example:

~~To help ensure diverse and direct input from all populations especially those with the most potential to be affected by health inequities, Fresno Council of Governments (FresnoCOG) administers a “Community-Based Mini-Grant Outreach Program,” which competitively awards mini-grants (\$1,000 – \$3,000) to community-based organizations, schools, and other groups to conduct outreach to individuals not typically involved in the regional transportation planning process. The selected organizations conduct outreach activities such as organizing and tailoring meetings, customizing presentations materials, building trust and removing barriers to participation to secure public involvement from stakeholders in their communities and the populations they currently serve, engaging them in the planning process and generating feedback on the development of the RTP and SGS.~~

~~[Need to identify a Rural MPO Example]~~

~~Programs that Serve Rural Transportation Needs~~

~~Fresno COG Measure C Farmworker Vanpool Program provides vouchers to help farm laborers pay for their transportation to various job sites when they ride in an approved Farmworker Vanpool.~~

~~[Need to identify additional examples]~~

~~Community Violence Prevention through Programming/Infrastructure~~

~~Taking Back the Streets and Sidewalks Report~~

~~This report can serve as a reference for those in the planning community working on violence prevention. The report examines ways in which Safe Routes to School and community safety efforts overlap and complement each other. The report primarily focuses on approaches to support personal safety for children and teens during the trip to and from school, but broader community strategies are also discussed in the course of providing background and exploring more comprehensive solutions to violence in communities. The report's overall goal is to increase the safety and health of children and youth, and ensure that communities become more equitable places.~~

~~[Need to Identify Urban and Rural MPO Examples]~~

~~Promoting Public Transit Connectivity to Essential Destinations and Low Income Communities~~

~~First-mile and last-mile connections to public transit are fundamentally important to providing access to essential destinations and increasing transit mode share which can contribute to improving public health outcomes through improved access to health care and services and enhancing active transportation opportunities.~~

~~Los Angeles County Metropolitan Transportation Authority developed a First and Last Mile Strategic Plan which identified strategies and potential funding sources for improving the areas surrounding transit stations to make it easier and safer for people to access them.~~

Projects

*Health Impact Assessment**Atlanta Regional Plan 2040 Health Impact Assessment Case Study**Bicycle and Pedestrian Infrastructure**Safe Routes to School:*

~~The Safe Routes to School movement is focused around six “E”s: engineering, education, encouragement, enforcement, evaluation and equity. The first E, engineering, is focused on infrastructure projects that improve the built environment around schools. This is of particular importance in the RTP process given its focus on identifying transportation projects for funding. The second and third E’s are the heart of the non-infrastructure work with Safe Routes to School, and focus on getting more children to understand how to walk and bike safely to school and in their communities, and have fun doing it. Enforcement focuses on making sure existing traffic safety laws are enforced, and partnering with law enforcement and regulatory agencies to create safer environments for walking and bicycling. Evaluation looks at how effective the overall Safe Routes to School efforts are at increasing walking and bicycling. Finally, equity focuses on ensuring that students of all backgrounds and abilities can walk and bike safely, with a particular focus on disadvantaged communities, where there are often higher rates of students walking and biking, as well as higher rates of injuries and fatalities.~~

~~Safe Routes to School “non-infrastructure” efforts can be integrated into RTPs in several ways. First, MPOs can create Regional Safe Routes to School Plans that identify strategies for increasing walking and bicycling to school across the region. These plans would identify routes that are safe and convenient for walking and bicycling, as well as infrastructure improvements that could improve the commute for students making these trips. The plans would then be a resource when MPOs make decisions about where to prioritize transportation funding. Second, MPOs can integrate Safe Routes to School into the active transportation and complete streets sections of their RTPs, identifying strategies to increase walking and bicycling and improve safety as part of the overall active transportation goals. Third, Safe Routes to School can be a primary strategy to improve public health and health equity, because they focus on children and future generations living within the region. Safe Routes to School is a mechanism to promote physical activity and thereby reduce obesity. It can also be a land use strategy in the SCS process, since the location of schools is a primary driver of how many students can walk or bike versus driven by their parents or a school bus. Safe Routes to School can also be a part of VMT reduction strategies, since around 10-14% of morning congestion is attributable to cars and buses driving children to school. Finally, MPOs can create distinct Safe Routes to School funding programs to allocate resources to communities and schools to run Safe Routes to School education and encouragement activities, as well as infrastructure improvements. The Metropolitan Transportation Commission has had such a program for many years. Many more strategies can be found in the Safe Routes to School National Partnership’s Primer for Regional Governments~~

Urban MPO Example: MTC regional SRTS program

[Other types of projects to potentially highlight, need to provide context and examples]

Infrastructure Projects

- ~~Bicycle and Pedestrian Infrastructure — i.e. re-striping existing roads during routine rehabilitation and maintenance, construction of separated bike lanes and walking paths, safe routes to school~~
- ~~Complete Streets~~
- ~~First & Last Mile: Promoting Public Transit Connectivity to Essential Destinations and Low Income Communities (i.e. Omnitrans sbX Bus Rapid Transit Program in San Bernardino, Delaware Valley Regional Planning Commission pilot demonstration on the relationship between transportation and food insecurity)~~

Livability

- ~~Affordable Housing~~
- ~~Equitable Transit-Oriented Development~~
- ~~Anti-Displacement Policies~~
- ~~Access to Essential Destinations (jobs, schools, healthy food, parks, etc.)~~
- ~~Urban Greening~~

Safety

- ~~Complete Streets, Safe Routes to School~~

Air Quality

- ~~Considering AQ impacts of siting new housing, schools and other destinations (i.e. 500-foot buffer around freeways)~~
- ~~Health impact assessments of transportation projects on surrounding communities~~
- ~~Freight/goods movement~~

Data, Modeling Tools, and Metrics that Promote Health and Health Equity in RTPs

While this is a dynamic and evolving policy area, research has demonstrated a clear connection between public health and transportation. Accordingly, the tools and strategies to promote health in transportation continue to be improved, and it is recommended that state, regional and local agencies all integrate the consideration of public health into their transportation and planning policies, programs, and projects as appropriate.

MPOs are encouraged to include strategies and policies in the RTP to obtain data and develop tools which would facilitate health equity analysis and measurements. Agencies are also encouraged to build partnerships to leverage financial and technical resources as appropriate. Regions with limited resources, especially rural regions, may be best served by selecting a few high-priority strategies where there is greatest opportunity to affect performance metrics/outcomes over a larger geographic region, or taking a more comprehensive approach over a smaller, more focused geographical area. Appropriate scale is important for the effective application of resources to quantitatively address public health and health equity in the planning process.

Data Sources for Public Health and Health Equity Information

- a) Common sources of data for transportation and land use modeling (i.e. Household Travel Surveys and Transit Surveys)
- b) Forecasting
- c) How can this type of data be used in the RTP?
- d) Overview of Data Sources appropriate for RTP level analysis (i.e. CDPH HCI)
- e) Challenges of using Health Data in Transportation Planning (i.e. scale)
- f) Identify Data Needs
- g) Off-Model Assessments and Methodologies

Modeling Tools to Capture Health and Health Equity Impacts

Health Economic Assessment Tool (HEAT)

The Health Economic Assessment Tool (HEAT) was developed by the World Health Organization (WHO) to assist in economic assessment of the health benefits of walking or bicycling. The tool estimates the value of reduced mortality that results from specified amounts of walking or bicycling. HEAT is best used for planning new bicycle or walking infrastructure, evaluating the reduced mortality from past and/or current levels of bicycling or walking, and providing input for health impact assessments (HIA). The data needed to run HEAT are: an estimate of how many people are walking or bicycling, an estimate of the average time spent walking or bicycling, mortality rate, and a value of statistical life number. The tool is designed for adult populations between the ages of 20-65 years old due to the fact that the model is designed to be used for activities such as commuting. The segment of the population age 65 and older is considered to be retirement age and not participating in a regular commuting and walking/bicycling routine.

~~[Insert table that outlines the applications, minimum data/system requirements, resources, and contacts for technical assistance.]~~

~~Examples/Case Studies of HEAT~~

~~Metropolitan Transportation Commission uses a variation of HEAT to model individual projects to determine their health benefits. Small MPOs and rural agencies with minimal financial and technical resources may find this tool helpful for modeling health outcomes.~~

~~Integrated Transport and Health Impact Model (ITHIM)~~

~~The Integrated Transport and Health Impact Model (ITHIM) was developed at the University of Cambridge, England, in 2011. ITHIM is a transportation focused scenario-based health risk analysis tool that models three health pathways related to travel behavior: physical activity from active transportation, road traffic injuries, and Particulate Matter (PM) 2.5 concentrations. Fifteen inputs go into ITHIM which are derived from travel and health surveys, travel demand and air pollution models, mortality and disease data, and road traffic injuries. Data can be arranged by sex and age from child to adult. ITHIM is a free, open source, and evolving tool. Extensions are available for cost-benefit, equity, and downscaling. Analysis can be conducted at the county or regional scale.~~

~~[Insert table that outlines the applications, minimum data/system requirements, resources, and contacts for technical assistance.]~~

~~Examples/Case Studies of ITHIM~~

~~ITHIM has been used in California by the Fresno Council of Governments (Fresno COG) and the Metropolitan Transportation Commission (MTC).~~

~~California Statewide Public Health Assessment Model (C-PHAM)~~

~~The California Statewide Public Health Assessment Model (C-PHAM) was developed by Urban Design 4 Health (UD4H). It is a neighborhood/city scale public health scenario modeling tool for California's five major urban centers: San Francisco Bay Area, Los Angeles, San Diego, Sacramento, and Fresno. This tool looks at health from a broad perspective, rather than a transportation specific perspective. This model uses adult data but expansion to include the demographic cohorts of children and seniors is being pursued. This tool can be used to provide analysis needed for grant program applications such as the Active Transportation Program (ATP) and the Affordable Housing and Sustainable Communities program (AHSC). This model is most useful for single scenarios, present to future and becomes more difficult to apply in multiple scenario comparisons; however it can be used on multiple scenario planning platforms. C-PHAM is an evolving tool and currently the model does not include air pollution exposure.~~

~~[Insert table that outlines the applications, minimum data/system requirements, resources, and contacts for technical assistance.]~~

~~Examples/Case Studies of C-PHAM~~

~~C-PHAM has been used by the Southern California Council of Governments (SCAG)~~

Performance Measures/Metrics/Indicators for Health and Health Equity

- i) Explain performance measures/metrics/indicators and how they are used in the long-range planning process (i.e. project performance, scenario analysis, final plan):
 - (1) USDOT Transportation and Health Tool
 - (2) CDPH Healthy Communities Data and Indicators Project (HCI)
 - (3) Transportation 4 America: Planning for a Healthier Future
 - (4) CDC: Community Health Status Indicators (CHSI 2015)
 - (5) California Health Disadvantaged Index
- ii) Identifying Vulnerable Populations and Local Communities of Concern (i.e. CES/DAC)

Funding

- The Commission acknowledges the need for additional discretionary planning funding to meet the growing number of objectives that RTPs should address including public health and health equity.
- Federal formula funding sources for metropolitan planning are subject to certain requirements and limitations (i.e. FHWA PL and FTA 5303)
- Provide overview of federal discretionary planning grant opportunities (i.e. FHWA Partnership Planning and FTA 5304)
- Highlight MPO discretionary programs (i.e. SCAG and MTC, FresnoCOG)
- Provide overview of state discretionary grant programs (i.e. AHSC and ATP, GGRF)
- Local funding i.e. Sales Tax Measures
- Strategic Partnerships to leverage funding opportunities (i.e. partnering with public health organizations, the private sector)

Key Terms

[Identify key terms and provide definitions — this will require stakeholder input thorough the workgroup process]

- a. Health
- b. Health Equity
- c. Health Inequity
- d. Social Equity
- e. Environmental Justice
- f. Disadvantaged Community
- g. Vulnerable Population
- h. Community Resilience
- i. Displacement
- j. Gentrification
- k. Healthy Communities

Resources and Citations

[Organize and annotate to identify title/date/source etc.]

http://sgc.ca.gov/pdf/HiAP_Task_Force_Report_Dec_2010.pdf

https://www.cdph.ca.gov/programs/Documents/Healthy_Community_Indicators_Core_list10_17_14Table1_5.pdf

https://www.cdph.ca.gov/Documents/CDPH_Healthy_Community_Indicators1pager5_16_12.pdf

<https://www.cdph.ca.gov/programs/Pages/HealthyCommunityIndicators.aspx#TechInfo>

<https://planning-org-uploaded-media.s3.amazonaws.com/document/State-of-Health-Impact-Assessment-in-Planning.pdf>

<https://www.transportation.gov/transportation-health-tool>

<https://www.transportation.gov/mission/health/strategies-interventions-policies>

<http://phasocal.org/ca-hdi/>

<http://scagrtpscs.net/Documents/2016/proposed/pf2016RTPSCS-PublicHealth032816.pdf>

http://t4america.org/docs/planning_for_a_healthier_future_0616.pdf

<http://www.transformca.org/sites/default/files/Healthy%20RTP%20-%20FULL%20-%202013-02-19%20Color.pdf>

http://narc.org/wp-content/uploads/Public_Health_and_Transportation_Info_0606121.pdf

http://www.fhwa.dot.gov/planning/health_in_transportation/resources/healthy_communities/mpohealth12122012.pdf

http://www.fhwa.dot.gov/planning/health_in_transportation/resources/movinghealthy.pdf

<http://www.trbhealth.org/>

http://www.saferoutespartnership.org/sites/default/files/pdf/CaseStudy_ActiveTransportationPlanningattheRegionalLevel.pdf

http://www.saferoutespartnership.org/sites/default/files/pdf/The_Final_Active_Primer.pdf

<http://saferoutespartnership.org/sites/default/files/pdf/RegionalGovernmentPrimer-v5.pdf>

http://www.saferoutespartnership.org/sites/default/files/pdf/Local_Policy_Guide_2011.pdf

<http://saferoutespartnership.org/resources/report/intersection-active-transportation-equity>

<http://www.apha.org/topics-and-issues/transportation/public-health-and-equity-principles-for-transportation>

https://saferoutescalifornia.files.wordpress.com/2012/11/hip_healthequitymetrics_impacts_table_11_16_12.pdf

<http://www.psrc.org/transportation/bikeped/health-in-transportation-planning/>

http://www.nashvillempo.org/regional_plan/health/

<http://www.mapc.org/public-health>

http://www.changelabsolutions.org/sites/default/files/Health_Transport_Factsheet_FINAL_20110713_%28rebrand_20130409%29.pdf

Appendix M

Examples of Planning Practices that Exceed Statutory Authority

This appendix aggregates all best practices from within the document into a single location which will be organized by topic area and further developed through the workgroup process to provide additional context and a variety of examples from both rural and urban regions. The examples contained in this appendix are not intended to establish baseline standards but rather, to highlight exemplary, state of the art planning practices that RTPAs can seek to emulate as financial and technical resources allow.

This appendix needs to be tailored for RTPAs, as all current examples are MPO-specific. RTPAs and their partners are encouraged to provide relevant examples for inclusion in this appendix.

Section 2.7 Coordination with Other Planning Processes

Complete Streets

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_generalplan/guidelines.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>

System Planning

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

2.9 Adoption – Update Cycles and Amendments

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

4.1 Consultation & Coordination

By documenting how specific comments are considered, the MPO 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 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.mtc.ca.gov/planning/2035_plan

4.2 Title VI & Environmental Justice Considerations in the RTP

Federal guidance for Environmental Justice analysis can be found at:

http://www.fhwa.dot.gov/environment/environmental_justice/index.cfm

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

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

4.4 Participation Plan

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

4.5 Private Sector Involvement

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

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

4.6 Consultation with Interested Parties

<http://www.sjcoq.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

4.9 Native American Tribal Government Consultation and Coordination

US DOT Order 5301.1 ensures that programs, policies and procedures administered by the US 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>

4.10 Consultation with Resource Agencies

Butte County Association of Government's (BCAG) RTP/SCS and Regional Conservation Plan. BCAG adopted the Butte County Regional Conservation Plan (Plan), a regional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), adopted recently to streamline the development and mitigation associated with public and private development in the planning area. BCAG's RTP/SCS has identified Regional Conservation Plan development and implementation strategies during transportation projects. Preparation and adoption of the Regional Conservation Plan required extensive resource agency coordination with the planning signatories upon issuance of federal and state permits along with the Plan.

<http://www.buttehcp.com/>

The San Diego Association of Governments' *TransNet* Environmental Mitigation Program (EMP), funded by local sales tax dollars, 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>

The Southern California Association of Governments' (SCAG) recently approved SCS Appendix on Natural and Farm Lands is a prime example of successful consultation with environmental agencies and stakeholders. The SCAG SCS Appendix is available at:

scagrtpscs.net/Documents/2016/final/f2016RTPSCS_NaturalFarmLands.pdf

FHWA's Integrated Eco-logical Framework (IEF) is a nine-step, voluntary framework for partners to collaborate, share data, and prioritize areas of ecological significance. Implementing IEF at a regional scale during RTP development would allow for early coordination with resource agencies and other key stakeholders to establish a Regional Ecosystem Framework.

<https://www.environment.fhwa.dot.gov/ecological/ImplementingEcoLogicalApproach/default.asp>

5.2 Environmental Documentation

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>

5.3 Federal Environmental Requirements

Southern California Council of Government's (SCAG) has developed a section on Environmental Mitigation pursuant to 23 USC Section 134 into their RTP/SCS and planning process. SCAG has also developed a Sustainability Program focused on natural resources and climate change strategies.

<http://sustain.scag.ca.gov/Pages/LinksResources.aspx>

<http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx>

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 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.

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 Federal Environmental Recommendations

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

5.5 Key Resource Areas for Avoidance and Mitigation Environmental Considerations for Best Practices

Voluntarily **and thoroughly** 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 450.324(f)(10), 450.324(g)(1) and (2), MPOs **may are strongly encouraged to** 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) **as well as other key resources identified in Habitat Conservation Plans (HCPs), Natural Community Conservation Plans (NCCPs) and input from leading conservation organizations, 2) consider developing an NCCP to aid in streamlining project permitting and delivery, 3) use the Regional Open Space and Conservation Area Framework to set priorities for a regional advance mitigation planning (RAMP) program or a programmatic mitigation plan as described in MAP-21, and 4) require, as a condition of transportation funding and consistency with the SCS, that projects provide mitigation according to these priorities, including any advance acquisitions and restoration work necessary to avoid temporal gaps in habitat function. Any conservation easements acquired as part of this program should be held by an organization whose mission includes the acquisition and stewardship of conservation easements, such as a Land Trust Alliance-accredited land trust.**

An excellent example of this approach is San Diego’s Environmental Mitigation Program (EMP), which is funded through the region’s TransNet sales tax measure. The EMP directs mitigation resources to habitat identified in adopted conservation plans, leverages funding from conservation partners, and saves additional money by acquiring habitat “early, at lower prices, and in larger parcels” (<http://www.keepsandiegomoving.com/EMP/EMP-intro.aspx>). For more information, please see San Diego Forward: The Regional Plan (<http://www.sdfoward.com/>).

For additional information regarding regional open space conservation please see the following EPA website:

<http://www.epa.gov/dced/openspace.htm>

SCAG included a comprehensive list of air quality mitigation measures in the PEIR for the 2012-2035 RTP/SCS, available at:

<http://scagrtpscs.net/Pages/FINAL2016PEIR.aspx#downloads>

5.6 Project Intent Statements/Plan Level Purpose and Need Statements

<http://www.stancoq.org/rtp.shtm>

5.7 Air Quality and Transportation Conformity

The conformity analysis should be prominently referenced in the RTP document. MPOs should work with air districts to develop TCMs that include mechanisms to promote movement from single occupancy vehicles to more sustainable modes of transportation, in support of the SIP. 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.epa.gov/otaq/stateresources/transconf/index.htm>

6.1 Summary of RTP Components

Public health performance measures must be easily obtainable and measurable, such as those provided by the California Health Interview Survey (CHIS), a random-dial telephone survey with representative public health data on all 58 counties in California. The CHIS is available at:

<http://healthpolicy.ucla.edu/CHIS/ABOUT/Pages/about.aspx>

Southern California Council of Government's (SCAG) has developed a section on Environmental Mitigation pursuant to 23 CFR Part 450.324 into their RTP/SCS and planning process. SCAG has also developed a Sustainability Program focused on natural resources and climate change strategies. More information is available at:

<http://sustain.scag.ca.gov/Pages/LinksResources.aspx>

<http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx>

6.2 Financial Overview

<http://www.bcag.org/Planning/index.html>

6.3 Fiscal Constraint

<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

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

6.5 Revenue Identification and Forecasting

<http://www.bcag.org/Planning/index.html>

6.6 Estimating Future Transportation Costs

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

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.

6.10 Transit

Los Angeles Metro, *First and Last Mile Strategic Plan*, identified strategies and potential funding sources for improving the areas surrounding transit stations to make it easier and safer for people to access them. SCAG incorporated some of these strategies into its 2016 RTP/SCS as well as short trips strategies to increase the number of trips under three miles that people take by foot or bike. The draft plan is available at:

http://media.metro.net/projects_studies/sustainability/images/path_design_guidelines_draft_november_2013.pdf

6.113 Bicycle & Pedestrian – Including AB 1396 California Coastal Trail

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

6.124 Goods Movement (Maritime/Rail/Trucking/Aviation)

MPOs are encouraged to consider developing or updating freight plans for their region, as these plans can help MPOs improve the efficiency and sustainability of goods movement in their regions.

<http://www.dot.ca.gov/hq/tpp/offices/ogm/>

<http://rtpscscs.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>

6.132 Regional Aviation System

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

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 nonattainment areas throughout the State.~~

Additional military installation Best Practices can be found at:

<http://www.napawash.org/2009/1378-strengthening-national-defense-counteracting-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.nceastmgf.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>

6.14 Transportation System Management & Operations

A US DOT 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 US DOT 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>

6.17 Regional ITS Architecture

<http://www.bcag.org/Planning/index.html>

6.18 Future of Transportation and New Technology

This document explains licensing requirements transparent and best practices accessible to any organization, public or private, seeking to deploy “Connected Vehicle” Dedicated Short Range Communications (DSRC) Roadside Units (RSU) and services that support vehicle-to-infrastructure (V2I) applications.

<http://ntl.bts.gov/lib/56000/56900/56950/FHWA-JPO-16-267.pdf>

This guidance is intended to assist system owner/operator staff to deploy V2I technology not only in terms Federal Aid Highway program requirements but also practices to help ensure interoperability and efficient and effective planning/procurement/operations.

http://www.its.dot.gov/meetings/pdf/V2I_DeploymentGuidanceDraftv9.pdf

SCAG’s RTP/SCS Mobility Innovations Appendix:

http://scagrtpscs.net/Documents/2016/draft/d2016RTPSCS_MobilityInnovations.pdf

6.25 Adaptation of the Regional Transportation System to Climate Change

~~Notwithstanding a lack of reliable information on the future impacts of sea level rise, precipitation changes, or extreme heat events,~~ MPOs should begin to address climate change in their long range transportation plans using Caltrans guidance, Cal-Adapt.org and other state resources (see Climate Adaptation Resources table). Design and planning standards should be re-evaluated to address future conditions. Where possible, MPOs and RTPAs should consult *Safeguarding California’s* transportation chapter, local general plan safety elements, local hazard mitigation plans, and other relevant local, regional, and state resources and documents. ~~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.~~

7.1 Goals & Performance Measures

Caltrans recommends using performance measures to measure the progress of regional projects. MPOs 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 areas. The Guidebook on “Performance Measures for Rural Transportation Systems” can be accessed at:

<http://www.dot.ca.gov/perf>

The following documents contain best practices for performance based planning:

- Transform report entitled “Creating Healthy Regional Transportation Plans” (2012) contains a chapter explaining what the RTP Guidelines are, how they support healthy outcomes, and best practices for public participation. <http://www.transformca.org/resource/creating-healthy-regional-transportation-plans>
- The Nature Conservancy report entitled “Sustainable Communities Strategies and Conservation” includes model policies and best practices for conservation policies in SCSs. <http://www.southernsierrapartnership.org/scs-policy-report.html>
- US DOT: Management & Operations in the Metropolitan Transportation Plan: A Guidebook for Creating an Objectives-Driven, Performance-Based Approach <http://www.ops.fhwa.dot.gov/publications/moguidebook/index.htm>
- FHWA Model Long-Range Transportation Plans: A Guide for Incorporating Performance Based Planning (2014) http://www.fhwa.dot.gov/planning/performance_based_planning/mlrtp_guidebook/

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