2010 WORKING DRAFT

California Regional Transportation Plan Guidelines

Page Left Intentionally Blank

2010 Regional Transportation Plan Guidelines

Adopted by the California Transportation Commission
on _____, 2010

Pursuant to California Government Code Section 14522

Commissioners
John Alvarado – Chair
James Earp – Vice Chair
Darius Assemi
John Chalker
Lucetta Dunn
Dario Frommer
James C. Ghielmetti
Carl Guardino
Patrick Mason
Joseph Tavaglione
Larry Zarian

Senator Alan S. Lowenthal – Ex Officio
Assembly Member Mike Eng – Ex Officio
Bimla G. Rhinehart – Executive Director

Page Left Intentionally Blank

Table of Contents

Page #

Chapter 1 - Introduction

1.1 Why Conduct Long-Range Transportation Planning? 11

1.2 Background and Purpose of the Regional Transportation Plan (RTP) Guidelines 12

1.3 Metropolitan Planning Organizations and Regional Transportation Planning Agencies in California 15

1.4 Purpose of the Regional Transportation Plan 17

1.5 California Transportation Planning and Programming Process 19

1.6 SAFETEA-LU Items Impacting the Development of RTPs 19

1.7 Key Additions to the 2010 RTP Guidelines 21

1.8 Senate Bill 375 – Impacts to the RTP Process 22

Chapter 2 – Regional Transportation Plan Overview

2.1 State Requirements 31

2.2 Land Use, Scenario and Regional Blueprint Planning 32

2.3 Federal Requirements 34

2.4 Relationship between RTP, OWP & FTIP 35

2.5 Consistency with Other Planning Documents 36

2.6 Coordination with Other Planning Processes 37

2.7 RTP Development Sequencing Process 38

Chapter 3 - Modeling

3.0 Transportation Modeling/Projecting Future Demand 43

3.1 RTP Modeling Requirements and Recommendations 46

3.2 Regional Economic and Land Use Model Recommendations 53

3.3 RTP Modeling Quality Control and Consistency 54

3.4 RTP Modeling as a Policy Tool 56

3.5 Modeling References 57

Chapter 4 – Regional Transportation Plan Contents

4.1 Policy, Action, Financial Elements and Sustainable Communities Strategy 59

4.2 Adoption - Update Cycles and Amendments 62

4.3 RTP Checklist 63

Financial

4.4 Financial Overview 63

4.5 Fiscal Constraint 66

4.6 Listing of Constrained and Un-constrained Projects 67

4.7 Funding Identification and Forecasting 68

4.8 Estimating Future Transportation Costs 69

4.9 Asset Management 70

RTP Consultation/Coordination

4.10 Consultation and Coordination 72

4.11 Participation Plan 74

4.12 Private Sector Involvement 77

4.13 Consultation with Interested Parties 78

4.14 Input/Consultation with Local Elected Officials on SCS Development 79

4.15 Interagency Consultation (IAC) on SCS Development 80

4.16 Native American Tribal Government Consultation & Coordination 80

4.17 Consultation with Resource Agencies 82

4.18 Coordinated Public Transit/Human Services Transportation Plans 83

Modal Discussion

4.19 Highways, Local Streets and Roads 85

4.20 Transit 85

4.21 Goods Movement (Maritime/Rail/Trucking/Aviation) 86

4.22 Regional Airport System 87

4.23 Bicycle & Pedestrian – Including AB 1396 88

Programming/Operations

4.24 Transportation System Operations and Management 89

4.25 Coordination with Programming Documents 90

4.26 Transportation Projects Exempted from SB 375 91

4.27 Regionally Significant Projects 92

4.28 Regional ITS Architecture 93

4.29 Performance Measures 94

4.30 Transportation Safety 95

4.31 Transportation Security 96

4.32 Congestion Management Process 98

RTP Environmental Considerations

4.33 Introduction 102

4.34 Environmental Documentation 103

4.35 SAFETEA-LU Environmental Requirements 104

4.36 SAFETEA-LU Environmental Recommendations 105

.

4.37 Key Environmental Considerations for Best Practices 106

4.38 Project Intent Statements/Plan Level Purpose and Need Statements 108

4.39 Air Quality and Transportation Conformity 109

Greenhouse Gas Emissions Requirements and Considerations in the RTP

4.40 Greenhouse Gas Emission Targets 112

4.41 Contents of Sustainable Communities Strategy (SCS) 113

4.42 Non-MPO Rural RTPA Addressing Greenhouse Gas Emissions 119

4.43 Addressing Climate Change Adaptation Issues in the RTP 119

APPENDICES

A Federal and State Transportation Planning Process Flowchart

B State and Federal Programming Process Flowchart

C Regional Transportation Plan Checklist

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 Checklists
1. MPO Conformity checklist
2. Rural Area Conformity checklist

G Senate Bill 375

H Contents of Alternative Planning Strategy (APS)

I Transportation Demand Strategies (TDM)

J CEQA Information (flowchart etc)

K Caltrans Regional Planning Staff Contacts

L Glossary of Transportation Terms

Chapter 1

Introduction

Page Left Intentionally Blank

1.1 Why Conduct Long-Range Transportation Planning?

Transportation planning and land use planning became increasingly more closely linked in California following the passage of SB 375 in September 2008. As a result of this legislation, the reduction of greenhouse gases has become one of the key themes in the transportation planning process along with the traditional themes of improving transportation mobility, addressing federal air quality criteria pollutants and ensuring the regional transportation system addresses the regional and statewide economic needs.

Transportation helps shape an area's economic health and quality of life. Not only does the transportation system provide for the mobility of people and goods, it also influences patterns of growth and economic activity through accessibility to land. Furthermore, the performance of this system affects such public policy concerns as air quality, environmental resource consumption, social equity, "smart growth," economic development, safety, and security. Transportation planning recognizes the critical links between transportation and other societal goals. The planning process is more than merely listing highway and transit capital investments, it requires developing strategies for operating, managing, maintaining, and financing the area's transportation system in such a way as to advance the area's long-term goals.

The Regional Transportation Plan (RTP), also called a Metropolitan Transportation Plan (MTP) or Long-Range Transportation Plan is the mechanism used in California by both Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to conduct long-range (minimum of 20 years) planning in their regions.

~~The 2006 California Transportation Plan prepared by the California Department of Transportation (Caltrans) Stated: "Transportation is an integral part of the social and economic fabric of California. It cannot be examined without considering population growth and demographics, changing travel behavior and increasing demand, safety, employment, housing, land use, the environment, community values, individual opportunity, and resources."~~

~~The trends and challenges identified in the California Transportation Plan include:~~

- ~~Economy – The economic status of our State is dependant upon the safe and efficient movement of people and goods.~~
- ~~Goods Movement – An estimated 45 percent of all containerized cargo passes through California's ports. An efficient and effective freight transportation system is essential to economic growth, productivity, comparative advantage, national security, and the overall quality of life in California and the United States.~~
- ~~Employment – By 2020, employment of wage and salary workers in California is expected to grow by more than 30 percent.~~
- ~~Transportation Revenue and Expenditures – Adequate and flexible funding is one of the greatest challenges in providing a transportation system that offers a high degree of accessibility to all Californians and supports and enhances the efficient movement of goods. The primary source of revenue for transportation projects is the excise tax collected on each gallon of gasoline. The purchasing power of this tax is steadily diminishing, because it has not kept pace with inflation.~~
- ~~Environment – Vehicle fuel combustion and associated health and greenhouse gas emissions impact our air quality. Transportation sources also impact water and visual quality, vegetation, wildlife, open space, other land uses and other quality of life issues.~~

- ~~Land Use Impacts on Transportation – The way communities are planned and designed has a profound impact on our travel behavior. Uncoordinated decision-making, single-use zoning ordinances, and low-density growth planning can result in airport restrictions and closures, increased traffic congestion and commute times, air pollution, greater reliance on fossil fuels, loss of wildlife habitat and open spaces, inequitable distribution of economic resources, and loss of a sense of community.~~
- ~~Housing-Employment Mismatch – Many regions in California have an imbalance of housing and jobs. The heavily urbanized areas of the State have a lot of jobs, however many employees have to commute long distances between where there work and their housing located in the outlying suburban areas. This jobs/housing imbalance adds to congestion, increasing air pollution and decreases our overall quality of life.~~
- ~~Population and Demographics – California is the most populous and rapidly growing State in the nation. The State's population is also the most ethnically diverse, having no ethnic majority. Although this growth and diversity adds to California's economic strength and vibrancy, it also creates a multitude of social, economic, environmental and transportation challenges for policy makers.~~
- ~~Travel Behavior – In recent years, the number of non-work related trips has overtaken the number of commute trips, leading to increased congestion during off-peak periods and more demand on local road networks.~~

1.2 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 statues 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 while maintaining California's commitment to public health and environmental quality; and,

4. Promote a planning process that considers the views of all the 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 will serve the mobility needs of goods and people. The RTP Guidelines are intended to provide guidance so that MPOs and RTPAs will develop their RTPs to be consistent with Federal and State transportation planning requirements. This is important because State statues require that RTPs serve as the foundation of the Federal Transportation Improvement Program (FTIP). The FTIPs are prepared by MPOs and identify the next four years of transportation projects to be funded for construction. The CTC cannot program projects that are not identified in the RTP. Since the mid-1970s, with the passage of AB 69, (Chapter 1253, Statute 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.

The RTP Guidelines are to be developed pursuant to California Government Code sections 14522 and 65080 that 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 between automobile, transit, carpool, and bicycle and pedestrian trips. If a travel demand model is unable to forecast bicycle and pedestrian trips, another means may be used to estimate those trips.*
> *(5) Speed and frequency, days, and hours of operation of transit service.*
>
> *65080 (d) Except as otherwise provided in this subdivision, each transportation planning agency shall adopt and submit, every four years, an updated regional transportation plan to the California Transportation Commission and the Department of Transportation. A transportation planning agency located in a federally designated air quality attainment area or that does not contain an urbanized area may at its option adopt and submit a regional transportation plan every five years. When applicable, the plan shall be consistent with federal planning and programming requirements and shall conform to the regional transportation plan guidelines adopted by the California Transportation Commission. Prior to adoption of the regional transportation plan, a public hearing shall be held after the giving of notice of the hearing by publication in the affected county or counties pursuant to Section 6061.*

The federal requirement for the development of RTPs originated in the 1970's as well.

The California RTP Guidelines were first adopted by the CTC in May 1978 and subsequently revised in August 1978, December 1982, October 1987, July 1991, December 1992, November

1994, and December 1999. A 2003 Supplement was also prepared that was based on a 2003 RTP Evaluation Report completed for the CTC.

The December 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 (SB 45, Chapter 622 Statues 1997). 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.

~~This~~ The 2007 revision of the RTP Guidelines was prepared in order to address changes in the planning process resulting from SAFETEA-LU and to incorporate information from the 2003 Supplement into the RTP Guidelines. 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 are incorporated in the RTP process. This addendum was adopted by the CTC prior to the September 2008 passage of SB 375.

This 2010 update was prepared to incorporate new planning requirements as a result of SB 375. This sweeping legislation has dramatically changed how transportation planning is conducted in California by MPOs. SB 375 was only directed towards MPOs and essentially requires them to include land use/housing issues and strive to reduce regional greenhouse gas emissions by achieving a regional greenhouse gas emission target specified by the ARB.

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

The ~~2007~~ 2010 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" will be used where the Guidelines reflect a permissive or optional statutory reference such as may or should. Each section ends with Federal and State Requirements (Shalls), Federal and State Recommendations (Shoulds), and "Best Practices" discussions where appropriate.

Changes to Federal statute are implemented by the Code of Federal Regulations (CFRs) that are also known as the 'final rules'. SAFETEA-LU section 6001, transportation planning is codified in the final rule that was issued for Title 23 CFR Part 450 on February 14,2007. The majority of citations in these guidelines refer to the implementing regulations i.e. the CFR section.

Because there are a variety of names used for the programming document that is prepared by an MPO, the RTP Guidelines will refer to the programming document that accompanies an RTP as the FTIP. The FTIP is defined as a constrained four-year prioritized list of all transportation projects that are proposed for *Federal, State and local* funding. The FTIP is developed and adopted by the MPO and is updated every two years. It is consistent with the RTP and it is required as a prerequisite for Federal funding. In this document the words FTIP and RTIP are

used interchangeably. In a similar fashion, the federal terminology for congestion management program is also referred to in this document as a congestion management process or plan.

It should be noted that the CTC is requiring the non-MPO RTPAs to address the federal planning requirements during the development of their RTPs. The justification being federal planning regulations address metropolitan planning (MPOs) and statewide planning for non-MPO areas of the State. The State of California addresses some of the federal statewide planning regulations through the California Transportation Plan (CTP). The CTP is a policy document prepared by the California Department of Transportation (Caltrans). It is not project specific. 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 including public involvement. ~~These RTPAs are compensated by the State using rural planning assistance (RPA) funds for their planning efforts.~~

1.3 Metropolitan Planning Organizations and Regional Transportation Planning Agencies in California

In cooperation with the Governor, 18 federally designated Metropolitan Planning Organizations (MPOs) and 26 State statutorily created Regional Transportation Planning Agencies (RTPAs) prepare Regional Transportation Plans in California. MPOs must adhere to federal planning regulations during the preparation of their RTPs. California statutes and the RTP Guidelines identify the RTP requirements for both RTPAs and MPOs. The planning requirements that were specified in SB 375 pertain only to the state's 18 MPOs. The RTPAs that also prepare RTPs are not statutorily required to meet ARB's regional greenhouse gas emission targets.

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

Federal legislation required the formation of MPOs for any urbanized areas with a population greater than 50,000. An MPO has five core functions:

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

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

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

CALIFORNIA
Metropolitan Planning Organizations(MPOs)
and
Regional Transportation Planning Agencies (RTPAs)
AMBAG[1] Association of Monterey Bay Area Governments
BCAG Butte County Association of Governments
COFCG Council of Fresno County of Governments
KCAG Kings County Association of Governments
KC0G Kern Council of Governments
MCAG Merced County Association of Governments
MCTC Madera County Transportation Commission
MTC[2] Metropolitan Transportation Commission
SACOG[3] Sacramento Area Council of Governments
SANDAG San Diego Association of Governments
SJCOG San Joaquin Council of Governments
SLOCOG San Luis Obispo Council of Governments
SBCAG Santa Barbara County Association of Governments
SCRTPA Shasta County Regional Transportation Planning Agency
SCAG[4] Southern California Association of Governments
StanCOG Stanislaus Council of Governments
TCAG Tulare County Association of Governments
TMPO Tahoe Metropolitan Planning Organization
[1]AMBAG includes SCCRTC, TAMC, and SBtCOG. All retain RTPA status.
[2]MTC covers a nine county region.
[3]SACOG is the RTPA for Sacramento, Sutter, Yolo, and Yuba Counties. It is the MPO for the federally designated ozone non-attainment area in Sacramento, Yolo, Yuba, Sutter, Placer, and El Dorado Counties. Placer and El Dorado Counties retain RTPA status up to the crest of the Sierras.
[4]SCAG covers a six county region. Five of which are County Transportation Commissions: LACMTA, OCTA, RCTC, SBCTC, and VCTC.
Tahoe Regional Planning Agency (TRPA) and Tahoe Metropolitan Planning Organization (TMPO)
Santa Cruz County Regional Transportation Commission (SCCRTC)
Transportation Agency for Monterey County
Orange County Transportation Authority
RTPAs within MPOs
MPO Areas
Non-MPO Rural RTPA Areas
California Department of Transportation
Division of Transportation Planning
September 2003

1.4 Purpose of the Regional Transportation Plan

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

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

Pursuant to Title 23 CFR 450.322 et seq, FHWA describes the development and contents of RTPs as follows:

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

Transportation planning by MPOs/RTPAs is a collaborative process, led by the MPO/RTPA, State 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, community groups, environmental organizations, the general public, and local jurisdictions through a proactive public participation process conducted by the MPO/RTPA in coordination with the State and transit operators. It is essential to extend public participation to include people who have been traditionally underserved by the transportation system and services in the region. Neglecting public involvement early in the planning stage can result in delays during the project stage.

New SAFETEA-LU requirements are addressed in Section 1.6. However, the traditional steps undertaken during the regional planning process include:

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

The overall scope of the RTP (prepared by MPOs) has changed as a result of SB 375. As a result of this legislation, the following items have been added to an MPO's RTP:

1. Other that those specifically exempted, transportation projects identified in the RTP must be modeled to determine their impact on the regional GHG emissions.
2. The RTP must include a sustainable communities strategy (SCS) that outlines land use within the region. The MPO will need to increase its coordination with cities and counties within the region to work towards more compact development that will reduce regional GHG emissions.

The RTPs are developed to provide a clear vision of the regional transportation goals, objectives and strategies. This vision must be realistic and be 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 the regions 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 Transportation Improvement Program (FTIP), and the Interregional Transportation Improvement Program (ITIP), (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, Native American 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) to facilitate 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, Native American Tribal Governments, as well as local elected officials, early in the transportation planning process so as to include them in discussions and decisions on the social, economic, air quality and environmental issues related to transportation.

1.5 California Transportation Planning and Programming Process

The State of California and Federal transportation agencies allocate millions of dollars of planning funds annually to support California's transportation system. State and Federal planning and programming legislation has been initiated and is periodically revised to provide guidance in the use of these funds to plan, maintain and improve the transportation system.

The Planning and Programming Process is the result of State and Federal legislation to assure 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 provides 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.

1.6 SAFETEA-LU Items Impacting the Development of RTPs

Public Participation Plan/Outreach – Each MPO shall provide citizens, 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 the stakeholders during its preparation. (Title 23 CFR 450.316)

Changes to Federal Planning Factors – The planning factor to "protect and enhance 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 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 a 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 World Wide Web 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 is adopted by the MPO. (Title 23 CFR 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 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 450.322(e)(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 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 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 by (Title 23 CFR 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 recommends 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 450.322(i))

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 450.320(c))

Visualization Technique 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, but more comprehensive and basic. The RTP shall be available on a website and for the life of the plan. (23 CFR Part 450.316(a))

Safety Issues – SAFETEA-LU 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(7)(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 450.306(g))

1.7 Key Additions to the 2010 RTP Guidelines

~~SAFETEA-LU Related~~

1. ~~Section 3.2 – SAFETEA-LU added one more year to how often MPOs must update their RTPs. State statute was also changed to mirror this new federal update period.~~
2. ~~Section 3.6 – The discussion on financial issues relating to the RTP has been expanded. Although RTPs have always had to be financially constrained, the 2007 update now requires the 20-year financial estimate to take into account construction related inflation costs. RTPs should also include a list of un-constrained projects in addition to the list of financially constrained projects.~~
3. ~~Section 3.10 – Increased the amount of information concerning consultation and coordination during the preparation of the RTP. MPOs/RTPAs must now consult with resource agencies during the development of the RTP to ensure potential problems are discovered early in the planning process.~~
4. ~~Section 3.11 – Requires MPOs to prepare a separate participation plan prior to development of RTP.~~
5. ~~Section 3.16 – SAFETEA-LU requires MPOs to consult the Public Transit/Human Services Transportation Plan (prepared by transit agencies) during the development of the RTP.~~
6. ~~Section 3.22 – Transportation system operations and management issues must now be addressed in the RTP.~~
7. ~~Sections 3.27 & 3.28 – Regional transportation safety issues and now the role of the MPO/RTPA during a large-scale security incident or natural disaster must be discussed in the RTP.~~
8. ~~Section 3.31 – The 2007 RTP Guidelines dramatically expand the discussion on RTP environmental considerations. This section was prepared in consultation with Div. of Environmental Analysis staff. SAFETEA-LU requires RTPs to discuss what mitigation actions should be addressed in the RTP (mitigation is addressed in California through the RTPs CEQA document)~~

~~Other Key Additions to the 2007 RTP Guidelines~~

1. ~~Section 2.2 – Discusses relationship of the RTP to regional blueprint planning efforts.~~

~~2. Section 3.23 – Expanded the discussion on coordination between RTPs and programming documents.~~
~~3. Section 3.26 – Transportation system performance measures were refined.~~
~~4. Section 3.29 – Expanded discussion on congestion and corridor management.~~

SB 375 Related

1. Section 2.2 – Outline of state RTP requirements now includes a discussion on SB 375 planning requirements.
2. Section 2.7 – Outlines the sequencing of RTP adoption, RHNA allocation, conformity determination and SCS/APS review by ARB.
3. Chapter 3 (Modeling) – General guidance on modeling issues has been increased to address how regional land use and GHG emissions will have to be discussed in RTPs.
4. Sections 4.11, 4.14 and 4.15 (Public Participation) – These sections were expanded to include new SB 375 consultation and public participation requirements as well as a discussion in Interagency Consultation (IAC) on SCS Development.
5. Section 4.26 – Expanded to include discussion on the type of programmed transportation projects that are exempt from SB 375.
6. Section 4.40 – Section added to discuss SB 375 required regional GHG reduction targets specified by the ARB.
7. Section 4.41: Sustainable Communities Strategy (SCS) – SB 375 requires that any RTP prepared by an MPO must include an SCS specifying how the ARB designated regional GHG emission reduction target will be met.
8. Appendix H: Alternative Planning Strategy (APS) – SB 375 also specified that if an MPO's SCS was unable to achieve ARB's regional GHG emission reduction target, the MPO must then prepare an APS.

Other Key Additions to the 2010 RTP Guidelines

1. Section 2.6 - Includes information and recommendations regarding consideration of the planning processes associated with Corridor System Management Plans, Complete Streets, Context Sensitive Solutions and the Smart Mobility Framework.
2. Section 4.23 – Expanded to include a new state requirement to ensure that MPOs/RTPAs located along the coast address the California Coastal Trail in their RTPs.
3. Section 4.42 – Provides guidance and recommendations for how non-MPO rural RTPAs can address GHG emissions in their RTPs without the statutory mandate of SB 375.
4. Section 4.43 – Provides information and guidance regarding addressing climate change adaptation issues in the RTP.

1.8 Senate Bill 375 – Impacts to the RTP Process

Overview

This section summarizes the transportation related statutory changes as a result of SB 375, which was signed into law by the Governor on September 30, 2008. The following is intended to provide information to Metropolitan Planning Organizations, decision makers, the public, and others in the transportation sector on the impacts of this bill. A chaptered copy of SB 375 can be found at the link below:

Insert link to Chaptered SB 375 bill here.

The summary below is formatted just as the bill itself is laid out to allow the reader to review the actual details of SB 375 if desired. The language in SN 375 addresses three primary areas:

1. Requires the California Air Resources Board (ARB) to develop regional greenhouse gas (GHG) emission reduction targets for cars and light trucks for each of the 18 Metropolitan Planning Organizations (MPOs).
2. Through their planning processes, each of the MPO's are required to develop plans to meet their regional GHG reduction target. This would be accomplished through either the financially constrained sustainable communities strategy (SCS) as part of their RTP or an unconstrained alternative planning strategy.
3. Provides streamlining of California Environmental Quality Act (CEQA) requirements for specific residential and mixed-use developments.

Added Government Code Section 14522.1:

Changes to the RTP Guidelines and Development of RTP's

1. The California Transportation Commission (CTC) in consultation with Caltrans and ARB shall ensure the RTP Guidelines address travel demand models used by MPOs in the development of their RTPs.
2. Whenever the RTP Guidelines are revised, the CTC shall convene an advisory committee that includes the following representatives: MPOs, Caltrans, organizations familiar with travel demand models, local governments, and representatives of environmental and community groups.
3. Prior to adopting the amended RTP Guidelines, during regular CTC meetings, CTC shall hold two workshops – one in the northern and one in the southern part of the state.
4. The RTP Guidelines shall, at a minimum and to the extent practicable (taking into account MPO size and resources available) account for all of the following: A) Relationship between land use density/vehicle ownership and VMT; B) Impact of enhanced transit service levels on vehicle ownership and VMT; C) Changes in travel and land development likely to develop as a result of highway and passenger rail expansion; D) Mode split (including bicycle and pedestrian) within the region; E) Transit operations (frequency, speed, days, hours, etc.)

Added Government Code Section 14522.2

1. MPOs are required to disseminate the methodologies used in the development of their regional models in an understandable format.
2. Other transportation agencies, cities and counties are encouraged to use the same transportation models as the MPOs.

Amended Government Code 65080

1. The RTP shall be "internally consistent." All required elements of the RTP must be consistent with one another.
2. MPOs are required to prepare a sustainable communities strategy (SCS) as part of their RTP. RTPAs (rural areas) outside of an MPO boundary are not required to prepare an SCS or address greenhouse gas (GHG) reduction issues in their RTPs.

Amended Government Code 65080

Regional Greenhouse Gas Emission Reduction Targets

1. No later than September 30, 2010, the ARB shall provide each MPO with a regional GHG emission reduction target for cars and light trucks for the years 2020 and 2035.
2. No later than January 31, 2009, ARB shall appoint a Regional Targets Advisory Committee. This committee will recommend the methodologies and factors to be used in the development of regional GHG reduction targets. The committee is composed of representatives of MPOs, air quality management districts (AQMD), League of California Cities, California Association of Counties, local transportation agencies members of the public, homebuilders, environmental groups, planning organizations, EJ groups, affordable housing organizations and others.
3. The committee must submit a report to the ARB by September 30, 2009. This report would include any relevant issues such as: data needs, modeling techniques, growth forecasts, jobs-housing balance, interregional travel, various land use/transportation issues impacting GHG emissions, and overall issues relating to setting these targets.
4. Prior to setting the GHG emission reduction target for each MPO, the ARB shall exchange technical information with the specific MPO and AQMD. The MPO may recommend a target.
5. The ARB must release draft targets by June 30, 2010. Each MPO is required to hold at least one public workshop regarding their draft target and the report prepared by the Regional Targets Advisory Committee.
6. When developing these targets, ARB must factor in improved vehicle emission standards, changes in fuel consumption, other measures that will reduce GHG emissions and prospective measures that ARB plans on adopting to reduce GHG emissions.
7. ARB must update the regional targets every eight years; however they may update the targets every four years. The update of the targets will be consistent with each MPOs update of their RTPs. During these updates, ARB shall exchange information with Caltrans, MPOs, local governments, AQMDs, and also consult with public and private stakeholders.
8. The regional targets may be expressed in gross tons, tons per capita, tons per household, or any other metric deemed appropriate by ARB.

Amended Government Code 65080

Sustainable Communities Strategy (SCS)

1. As part of its RTP, each MPO shall prepare a SCS subject to the requirements of 23 CFR Part 450 (Planning Assistance & Standards) and 40 CFR Part 93 (Determining Conformity of Federal Actions to State or Federal Implementation Plans). It should also use the most recent local general plans and other land use assumptions. The SCS would identify how to reduce regional GHG emissions from cars and light trucks taking into account future land use and planned transportation projects.
2. Over the course of the 20 plus years of the RTP, the SCS shall identify general land use assumptions such as residential densities; identify areas within the region sufficient to house all the regional population (including low income), population growth, number of persons per household and employment growth.
3. The SCS must identify the areas within the region sufficient to house an eight year projection of the regional housing need developed by HCD. The state housing goals are specified in Government Codes 65580 and 65581.

4. The SCS must also identify the transportation network needed to accommodate the transportation needs of the region.
5. The SCS must also address the best information available regarding resource areas and farmland within the region.
6. Within the San Francisco Bay area, ABAG has the designated responsibility to address the land use/housing portions of the SCS and MTC shall address the transportation portions.
7. Role of RTPAs: When a council of governments or county transportation commission is located within the boundaries of an MPO, that sub-region may work with the MPO in preparing the SCS or the alternative planning strategy (APS). If the MPO chooses, a sub-regional SCS or APS may be prepared. For example, the Riverside County Transportation Commission may prepare their portion of the SCS for APS for the SCAG region. The MPO must develop the SCS or APS guidelines and public participation criteria for their sub-regions in order to ensure region wide consistency. However, the MPO is still responsible for the overall GHG reduction attainment.
8. Informing locally elected officials: In order to inform locally elected officials on the draft SCS or APS, the MPO must hold one or tow meetings with those groups. The MPO shall conduct a minimum of two informational meetings within each of its counties for members of the board of supervisors and city councils on the SCS and APS. One meeting is acceptable if a majority of board of supervisors and city council representatives (representing a majority of the regions population) are in attendance. The MPO would obtain input and comments on the SCS and APS.
9. Public Participation: Input from the public is an important component of the SCS/APS process. Each MPO must adopt a public participation plan (PPP) prior to the adoption of an SCS/APS. The existing PPP used for the RTP may be modified to include the SCS/APS. However, the PPP must address the following: A) Identify efforts to include a wide range of groups such as environmental, community, building and business representatives, B) Consultation with congestion management agencies and transportation commissions, C) Workshops providing the public with clear understanding of the isses and how they would be addressed in the SCS/APS. At least one workshop will be held in each county – three workshops must be held for counties with a population greater than 500,000. Visualization techniques such as maps and computer graphics shall be used at these workshops, D) The PPP will also discuss how the draft and final SCS/APS will be prepared and circulated, E) If the MPO is comprised of a single county, two public hearings on the SCS/APS will be held, at least three will be held in a multi-county MPO, these hearings should be held in different parts of the MPO region to ensure maximum participation. Notices of these public hearings should be distributed to the public in a manner to allow for wide scale notification.
10. When preparing the SCS, the MPO shall consider spheres of influence that have been adopted by local agency formation commissions within its region.
11. The MPO shall quantify the reduction in GHG emissions projected to be achieved in the SCS. The SCS will also identify the difference between the regional GHG target set forth by ARB and the target identified in the SCS.
12. Two or more of the eight MPOs located in the San Joaquin Valley may have multi-county goals and policies contained in their SCS or APS. They may also have one SCS or APS for the entire San Joaquin Valley.

Alternative Planning Strategy (APS)

1. If the SCS is unable to reduce GHG emissions to achieve ARBs regional target, the MPO must prepare an APS. The APS is separate from the SCS and RTP, but it may be adopted by the MPO at the same time as the RTP.
2. The APS would specify how the MPO could achieve the GHG target through alternative development patterns, infrastructure, or additional transportation measures or policies.
3. The APS shall address the following: A) The principle impediments to achieving the GHG reduction targets identified by the ARB, B) The APS may include an alternative land use development pattern other than what was addressed in the SCS, C) The APS would also describe how GHG emission reduction targets could be achieved by implementing the APS, and why the land use development pattern, measures and policies are the most practicable to achieve these reduction targets, D) To the extent possible, the APS would comply with federal regulations except to the extent that compliance will prevent achievement of the GHG reduction targets, E) Unlike the RTP, the APS will not be financially constrained and will not identify specific transportation projects to be programmed in the MPOs TIP, therefore it is exempt from any CEQA requirements.

MPOs Communication with ARB on its Assumptions to Achieve the Target

1. Prior to starting its public participation process for the SCS or APS, the MPO must submit its technical methodology (such as modeling) on how it's going to estimate the regional GHG emissions. The ARB must respond back to the MPO in a "timely manner" with written comments. The MPO is encouraged to work with ARB until the ARB concludes this technological methodology operates accurately.

Submitting SCS/APS to ARB for Review

1. After adoption of an SCS or APS, the MPO will submit the document to the ARB for review. This would include projected GHG emission reductions and the modeling methodology used to achieve these reductions. ARB has 60 days to review the document and provide comments back to the MPO. ARB is limited to either accepting or rejecting the SCS/APS.
2. If the ARB determines the SCS/APS would not achieve the GHG reduction targets, the MPO would have to revise the SCS or prepare an APS that would achieve these targets; this would have to be resubmitted to ARB. The MPO must obtain ARB acceptance of their SCS/APS.

State Approval of SCS/APS Not Necessary – Continued Control of Local Land Use Authority

1. Neither the SCS nor APS are subject to any state approval.
2. Government Code Section 65080 is very explicit that neither the SCS nor the APS can supersede the land use authority of a city or county. There is no requirement that a city's or county's general plan must conform to the RTP.

Programmed Projects

1. Any transportation projects contained in the 2007 or 2009 FSTIP and that have been programmed by December 31, 2011 are not required to conform to the SCS or included in any regional GHG modeling.

2. Projects funded by locally funded sales tax measures: transportation projects are also exempt from the SCS if the projects contain any local slaes tax funds listed on the ballot measure prior to December 31, 2008. If a local sales tax measure to fund transportation projects is approved by the voters prior to December 31, 2010, those projects shall also be exempt from any SCS requirements.

RTP Update Cycle

1. MPOs located in federally designated air quality attainment areas and all RTPAs must update their RTP at least every 5 years. This bill state they may update every 4 years. If these MPOs or impacted RTPAs decide to update their RTPs every 4 years, they must make that decision by June 1, 2009 or 4.5 years (54 months) prior to the statutory deadline for adoption of the housing elements.

Financial Incentives

1. The MPO or RTPA preparing the RTP and SCS/APS shall consider "financial incentives" for cities and counties that have resource areas or farmland as defined in Government Code Section 65080.01. These incentives would be in the form of transportation funds for city and county roads. The MPO or RTPA shall also consider financial assistance for counties that contribute towards GHG reduction targets by implementing policies for growth to occur in their cities.

Added Government Code Section 65080.01

Several Terms are Defined – Summaries of Terms

- Resource Areas – Essentially parks and open spaces protected by various conservation plans. Agricultural easements are also included.
- Farmland – Land classified as prime or unique farmland outside of city limits and spheres of influence.
- Feasible – Capable of being accomplished in a successful manner within a reasonable amount of time, taking into account economic, environmental, legal, social, and technical factors.
- Consistent – Same meaning that is used in 23 U.S.C. Section 134 (Metropolitan Planning)
- Internally Consistent – All the contents of the RTP are consistent with one another. The SCS must be consistent with the other sections of the RTP.

Page Left Intentionally Blank

Chapter 2

Regional Transportation Plan Overview

Page Left Intentionally Blank

2.1 State Requirements

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

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

When applicable, RTPs shall be consistent with Federal planning and programming requirements and shall conform to the RTP Guidelines adopted by the California Transportation Commission (CTC). In addition, the CTC cannot program projects that are not identified in the RTP.

Section 65080 states RTPs shall address the following:

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

SB 375 added significant requirements to an MPO's RTP process, those requirements are identified in Section 1.8.

Additional California Government Code Sections apply to the development of RTPs.

Government Code Section 65080 - An MPO/RTPA with a population exceeding 200,000 persons may prepare at least one "alternative planning scenario" during the development of the RTP. The purpose of the alternative planning scenario is to address attempts to reduce growth in traffic congestion, make more efficient use of existing transportation infrastructure, and reduce the need for costly future public infrastructure.

Government Code Section 65080 - Prior to adoption of the RTP, a public hearing shall be held after publishing notice of the hearing. After the RTP is adopted by the MPO/RTPA, the plan shall be submitted to the CTC and Caltrans. One copy should be sent to the CTC. Two copies should be submitted to the appropriate Caltrans district office. The Caltrans district office will send one copy to the headquarters Division of Transportation Planning.

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

Government Code Section 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.

2.2 Land Use, Scenario, Regional Blueprint Planning and Coordination with the Sustainable Communities Strategy (SCS)

Authority for transportation decisions rest with the MPOs/RTPAs and Caltrans. City and county governments make the land use decisions. There is a reciprocal relationship between the fields of transportation planning and land use planning. Transportation access impacts housing choices and the location of housing and commercial development impacts transportation.

The Regional Blueprint grant program is seen as a vehicle for linking the fields of transportation, land use, and environmental planning. Blueprint planning program is a voluntary grant program for MPOs and RTPAs funded by Caltrans. Its goal is to promote regional collaboration and integrated planning. The objective of this program is to develop a shared or consensus vision of the future as it relates to infrastructure and growth. The primary focus of the regional blueprint planning effort is to coordinate decisions regarding transportation, land use (such as housing) and the environment. The Blueprint plan, also known as a preferred land use pattern or Preferred Growth Scenario (PGS), is an analytical tool developed to inform decision-makers.

The process for developing the Blueprint plan is as important as the outcome of the planning efforts. Key elements of the Blueprint planning process are 1) engaging the public, especially the traditionally under-represented, 2) involving a broad range of stakeholders, 3) use of scenario planning or "visioning" techniques and 4) use of regional scale data/GIS modeling.

The Blueprint plan is intended to provide more housing and transportation choices, less congestion, improved air quality, improved social justice and economic competitiveness, better environmental protection, and streamlined transportation project delivery. MPOs and RTPAs should describe their regional blueprint planning efforts in the RTP and describe its relationship to the RTP process – the two processes are linked.

Land Use Strategies

Regional land use projections that underlie RTPs have typically assumed existing growth trends will continue in the future, based on general plans that are prepared by cities and counties. Beginning in 2004, 17 of the 18 MPOs have undertaken regional visioning or "blueprint" processes to look at how regions can grow more efficiently and meet more environmental and social goals.

Now, SB 375 requires the MPOs to meet targets reducing GHG emissions of cars and light trucks. The following strategies, used with the Sustainable Communities Strategy (SCS) to reduce GHG emissions, can still be incorporated into the RTP to meet the following environmental and social goals:

1. Encourage twenty-year or longer regional housing forecasts by region that are consistent with the RTP, the housing need allocations, the regional blueprint, the general plans, and the SCS to project twenty years forward.

2. Encourage the county or city general plan to consider the regional blueprint plan for the region, and link the general plan, and the SCS to reflect the best-case scenarios.

3. Encourage that there is a reasonable basis for the projected land uses included in the RTP and the SCS.

4. Encourage that land use changes contained within city and county general plans are built into land use pattern projections in the base case for modeling purposes.

5. Where there is a regional blueprint and an SCS, encourage that, the planned land use base for the Regional Transportation Plan is consistent with that regional agency's blueprint and the SCS

6. Encourage that the land use base for the regional blueprint and the SCS is consistent with federal regulations and current or projected local general plans.

7. Encourage a minimum standard for transit service or sustainable community strategy approach.

Performance Indicators:

The following suggested Indicators provide a measure of consistency between the RTP, SCS, and city and county general plans:

1. Compare projected Sustainable Communities Strategy (SCS) development to actual development in applicable locations and provide an explanation for variances as updated.

2. Report the progress relative to whether the project(s) identified in the local RTP are consistent with city and county general plans or the SCS for region.

Land Use Assumptions:

Land use assumptions, or land use planning assumptions, are assumptions made about the number of people that will live in each part of a region, and the number and the location of employment, and other activities. Establishment of land use assumptions are the result of population, economic and land use forecasts as follows:

Population forecasts: Forecasting future population growth includes examining current information about birth and death rates, and the rates of migration to and from the region.

Economic forecasts: Forecasting economic activity includes consideration of population trends, the region's ability to attract and retain employers, and expectations on how these trends will change in the future.

Land use forecasts: Forecasting land use includes looking at a local area's land use plan's predictions on where new population and employment will locate within the region. These plans can reflect the impact of policies and specific projects designed to direct expected growth into desired locations. These plans can also incorporate current trends, or they can include policies and programs designed to change those trends. Examples include policies and projects

encouraging redevelopment of urban cores, increase density, or protect open spaces from development.

These forecasts may be made by MPOs, RTPAs, local governments or other planning agencies. The information on population and employment may be generated using land use models, and/or determined by expert judgement. Some land use models include factors as location of industrial and service employment, location of employee households, and comparative costs for land. Land use forecasts are usually performed at the appropriate district level, and are then sub-allocated to transportation analysis zones. The land use forecast are then used as inputs into the transportation modeling, or "travel demand forecasting" process.

Requirements (Shalls)
Federal: None
State: Government Code Section 65080 requires MPOs to prepare a Sustainable Communities Strategy as part of the RTP.

Recommendations (Shoulds)
Federal: None
State: Government Code Section 65080.3 gives an MPO/RTPA with a population exceeding 200,000 persons the option to prepare at least one "alternative planning scenario" during the development of the RTP.

Best Practices: A regional Blueprint plan can be an important, key component that should preclude the development of the RTP. Describing the MPO/RTPAs Blueprint planning efforts and its relationship to the RTP process is considered to be a best practice. In addition to Blueprint planning, MPO/RTPAs might want to consider implementing context sensitive solutions and developing data that is easily accessed by multi-agency staff. See San Joaquin Valley Blueprint efforts at: http://www.sjvalleyblueprint.com and the California Regional Blueprint Planning Program website at http://www.calblueprint.dot.ca.gov./

2.3 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 49 CFR Part 613. These Federal regulations incorporating both SAFETEA-LU and TEA-21 changes were updated by FHWA and FTA and published in the February 14, 2007 Federal Register. The final guidance is commonly referred to as the Final Rule.

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

1. Economic vitality and global competitiveness, productivity and efficiency;
2. Safety of the transportation system;
3. Security of the transportation system;
4. Accessibility and mobility of people and freight;
5. Protection of the environment, energy conservation, quality of life, and consistency between (regional) transportation improvements and local as well as State planned growth;

6. Integration and connectivity of the transportation system across modes for both people and freight;
7. Efficient transportation management and operations; and,
8. Preservation of the transportation system.

Federal Clean Air Act conformity requirements pursuant to the Amendments of 1990, apply in all MPO/RTPA nonattainment areas. The Clean Air Act (42 USC 7506(c))"conformity" requirement ensures that Federal funding and approval are given to transportation plans, programs and projects that are consistent with the air quality goals established by a State Implementation Plan (SIP). For MPO nonattainment regions, the MPO and FHWA are responsible for making the RTP conformity determination. Both the MPO and FHWA must be able to determine that any new transportation projects will not cause new air quality violations, worsen existing violations or delay timely attainment of the National Ambient Air Quality Standards. The transportation conformity rule (40 CFR Part 93) sets forth policy, criteria, and procedures for demonstrating and assuring conformity of transportation activities.

Title VI ensures that all people have equal access to the transportation planning process. It is important that MPOs/RTPAs comply with this Federal civil rights requirement during the RTP development process. Title VI States that all people regardless of their race, sexual orientation or income level will be included in the decision-making process.

Requirements (Shalls)
Federal: Title 23 CFR part 450
State: None

Recommendations (Shoulds)
Federal: None
State: None

Best Practices: See general discussion above.

2.4 Relationship Between the RTP, OWP and FTIP

The three key planning documents produced by the MPOs and RTPAs are:

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

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

(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.

Key Planning Documents Produced by MPOs/RTPAs

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

2.5 Consistency with Other Planning Documents

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

1. General Plans (especially the Circulation and Housing Elements);
2. Airport Land Use Compatibility Plans;
3. Air quality State Implementation Plans (SIPs); and,
4. Multi-species Habitat Conservation Plans.

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

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

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

2.6 Coordination with Other Planning Processes

RTPs are prepared within the context of many other planning processes conducted by federal, state, regional and local jurisdictions and agencies. This section provides background information and recommendations for how MPOs and RTPAs can integrate the planning processes associated with Complete Streets, Context Sensitive Solutions and the Smart Mobility Framework into development of the RTP.

Complete Streets

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

AB 1358 – The Compete Streets Act of 2008 was signed into law on September 30, 2008. The major provisions of the bill include the following:

- Beginning January 1, 2009 and no later than January 1, 2014 the Governor's Office of Planning and Research must amend the State General Plan Guidelines for the Circulation Element to specify how local officials can accommodate safe and convenient travel, and;
- Beginning January 1, 2011 any city or county carrying out any substantive revision of its circulation element must include a plan for a balanced, multi-modal transportation network that meets the needs of all users of streets, roads, and highways in a manner that is suitable to the rural, suburban or urban context of the general plan. All users of streets, roads, and highways are defined to include: motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation.

The value of implementing a Complete Streets program is increasingly being recognized in California. In October 2008, Caltrans adopted Deputy Directive DD-64-R1 entitled Complete Streets. This directive included the following policy and provisions:

- Bicycle, pedestrian, and transit travel is facilitated by creating "complete streets" beginning early in system planning and continuing through project delivery and maintenance and operations. Developing a network of "complete streets" requires collaboration among all Department functional units and stakeholders to establish effective partnerships.
- State and federal laws require the Department and local agencies to promote and facilitate increased bicycling and walking. California Vehicle Code (CVC) Sections 21200 – 21212, and Streets and Highways Code Sections 890 – 894.2 identify the rights of bicyclists and pedestrians, and establish legislative intent that people of all ages using all types of mobility devices are able to travel on roads. Bicyclists, pedestrians and non-motorized traffic are permitted on all State facilities, unless prohibited.

Based upon DD-64-R1, the Department and local agencies have the duty to provide for the safety and mobility needs of all who have legal access to the transportation system.

The implementation of Complete Streets policies represents a strategy which cities, counties, and regional planning agencies can use to help meet the regional greenhouse gas emissions reduction targets established in AB 32 and SB 375.

While AB 1358 provides no statutory requirement for MPOs and RTPAs, the consideration and integration of Complete Streets policies is recommended:

MPOs and RTPAs should integrate Complete Streets policies into their Regional Transportation Plans.

MPOs and RTPAs should encourage all jurisdictions and agencies within the region to ensure that their circulation elements and street and road standards address all users of the transportation system.

Regional planning agencies should also consider "Complete Streets" improvements in MPO/RTPA funded transportation system projects.

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

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

Context Sensitive Solutions

Context Sensitive Solutions is a policy ensuring transportation projects meet the needs of both the traveling public and neighboring communities. This also means transportation improvements are safe, reliable, performance-oriented, flexible, and productive while being responsive to natural, cultural and built environments.

While a region's projects are being planned within the RTP process, it is important to consider the needs of the non-motorized traveler. The maintenance, operations, and project development processes should also consider incorporating into the region's transportation infrastructure, the best available standards. This includes attention to:

- Safe and efficient transportation for all users of the highway system
- Support for the Americans with Disabilities Act
- Attainment of community goals and objectives
- Transportation needs of low-mobility disadvantaged groups
- Support of economic development
- Eliminating, or minimizing adverse effects on the environment, natural resources, public services, aesthetic features and the community
- Realistic financial estimates
- Cost effectiveness

Caltrans incorporates Context Senstive Solutions as an approach to plan, design, construct, maintain, and operate its transportation system, and works with local partners to provide guidance under which certain features can be considered.

Insert more information and links related to the Context Sensitive Solutions Deputy Directive as needed.

Smart Mobility Framework

Insert information and links related to the Smart Mobility Framework.

Corridor System Management Planning (CSMP)

Insert information related to CSMPs.

2.7 RTP Development Sequencing Process

The CTC and Caltrans have convened an RTP Sequencing Workgroup to address the RTP Development Sequencing Process which will provide information and guidance on the development of the SCS/RTP and the integration of the CEQA, Interagency Review/Consultation, Federal Conformity Determination and ARB review processes. A flowchart illustrating this sequencing process will be developed and included in this section.

Page Left Intentionally Blank

Chapter 3

Modeling

Page Left Intentionally Blank

3.0 Transportation Modeling/Projecting Future Demand

Modeling is one method of forecasting future demands on the transportation system, and is an important source of information used to assess the benefits of various transportation alternatives. Typically the larger MPOs have the staff expertise and funding to conduct their own modeling. Smaller MPOs and RTPAs typically use subcontractors or rely on a review of existing documents. Current FHWA and FTA planning regulations require only that the MPO have an analytical process in place for evaluating projects.

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

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

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

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

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

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

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

Model results are only as good as the data that go into the model. MPOs must use the most current household travel surveys, demographics, socio-economic and census data available, especially if the region is growing rapidly. The most current household travel survey will provide key inputs on travel behavior such as the trip characteristics and trip rates to the four-step models and activity-based models.

Described below is the traditional four-step process for modeling transportation demand. For the past 40 years, transportation professionals have used a four-step approach in modeling

transportation demand. Most modeling approaches use some form of these steps today. Once some understanding has been established as to what the land use, population, and employment levels are in a study area, the four modeling steps are:

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

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

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

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

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

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

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

- Provide improved representation of demographic, spatial, and time variations in the population.

- Get rid of "Non-Home Based Trips." Non-Home Based trips are almost always part of a chain of trips that usually starts or ends at the trip maker's place of residence or work.
- Improve accountability of causes and impacts of travel and transportation investments.

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

- More personal time & activity is simulated
- Telecommuting and internet shopping can be considered
- More data on intra-household interactions and time schedules are required

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

1. For preparation of the RTP required under Sections 65080 et seq. of the Government Code, by July 1, 2008, each MPO or RTPA over 200,000 in population is urged to establish transportation modeling and analytical techniques that facilitate its evaluation of one or more alternative planning scenarios under the provisions of Section 65080.3.

2. As part of the four-year RTP process each MPO or RTPA should strive to enhance its modeling and analytical techniques in order to improve its assessment of the likely implications of key policy options. Such improvements should educate decision-makers and the public regarding how such options would potentially affect trip making, choice of travel modes, VMT, major land use development decisions, and quality of life issues.

3. To evaluate the effectiveness of policies to reduce GHG, the California Air Resources Board (ARB) and others need to compare modeling outputs across all regions in the State. To be able to compare travel projections across regions in California, some basic recommended modeling protocols should be adopted. These should be specific to groups of regions, according to policy problems encountered. Modeling practices should be consistent between California Department of Transportation (Caltrans) District Offices, MPOs, RTPAs, cities, counties, and Congestion Management Agencies (CMA).

Committee may decide to move this section. Also, this section may need to be modified in response to the RTAC final report to the ARB.

Modeling Performance Measures

Recommendations:

- For meeting the goals of SB 375, modeling performance measures should cover one or more of the following: VMT, VHT, greenhouse gas emissions, and fuel usage.

Requirements (Shalls)
Federal: Title 23 CFR 450.322(f)(1) requires the RTP to contain "the projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan."
State: None

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

Best Practices:

http://calblueprint.dot.ca.gov
http://www.sjvalleyblueprint.com

3.1 RTP Modeling Requirements and Recommendations

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

<<Insert table here that identifies which category each MPO and RTPA falls in to.>>

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

A. Counties with very slow growth in population and jobs, little or no congestion, and no significant new road or transit construction plans (i.e., Modoc, Inyo, Siskiyou, which have 1990-2000 population growth rates below 3%)

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

Requirements (Shall)
Federal: None
State: None

Recommendations (Should)
Federal: None
State: None

B. Regions with attainment Air Quality (AQ), slow growth, or virtually no transit, plus the rural, isolated non-attainment areas.

Recommendations:

1. The use of 3-step models can continue for the next few years. The models should be run to equilibrium.

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

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

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

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

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

The following two items need further discussion on whether to be left in place, removed, moved into the policy section of this chapter or moved to a policy section elsewhere in the RTP Guidelines.

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

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

Requirements (Shall)
Federal: None
State: None

Recommendations (Should)
Federal: TBD
State: TBD

C. Regions with rapid growth, nonattainment AQ, or the potential for significant transit use.

Recommendations:

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

2. The travel model set should be run to full equilibration across all model steps.

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

4. Economic, market-based land use models should be developed within a few years.

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

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

7. A simple freight model should be used.

8. A simple vehicle choice model should be used.

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

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

11. All road capacities and speeds should be validated with surveys.

12. The urban development footprint in GIS should be used to calculate environmental impacts on terrestrial and aquatic ecosystems.

The following two items need further discussion on whether to be left in place, removed, moved into the policy section of this chapter or moved to a policy section elsewhere in the RTP Guidelines.

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

14. In addition to the policies and performance measures in *B*, these agencies can evaluate policies for their effects on lower-income households, as required by Federal and State law. This can be done by evaluating traveler welfare measures based on the mode choice log sums for each household income class, or based on travel costs for them. In addition, these agencies can evaluate simple road pricing, parking charges, and higher fuel taxes or carbon taxes in the plan or in the alternative planning scenario as outlined in Government Code Section 65080.3 alternative.

Requirements (Shall)
Federal: None
State: None

Recommendations (Should)
Federal: TBD
State: TBD

D. Regions with serious and above ozone or CO non-attainment.

Requirements:

1. These regions shall achieve the requirements of the Transportation Conformity Regulations of 40 CFR §93, meaning four-step models with full feedback across travel model steps and some sort of land use modeling.

2. 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))

3. 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))

4. 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))

5. 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))

6. 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 (*40 CFR §93.122* (b)(1)(v))

7. 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))

8. 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))

9. 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))

<u>Recommendations:</u>

1. In addition to the conformity requirements, they should also add an auto ownership step and make this step and the mode choice equations for transit and walk and bike and the trip generation step sensitive to land use variables and transit accessibility.

2. Walk and bike modes should be explicitly represented.

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

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

5. Feedback loops should be used and take into account the effects of corridor capacity, congestion and bottlenecks on travel speed and emissions.

6. The regions should implement simple land use models for the next RTP and develop formal economic land use models in the next few years.

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

8. Simple Environmental Justice analyses should be done using travel costs or mode choice log sums, as in *C.*

9. Agencies should develop and test joint mode-destination choice models.

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

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

12. Floor space rent data should be collected in the case where an agency is anticipating development of an integrated tour/activity based model.

The following item needs further discussion on whether to be left in place, removed, moved into the policy section of this chapter or moved to a policy section elsewhere in the RTP Guidelines.

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

Requirements (Shall)
Federal: Transportation Conformity Regulations of 40 CFR §93
State: None

Recommendations (Should)
Federal: TBD
State: TBD

E. The largest four MPOs and RTPAs with rapid growth and established transit systems.

Recommendations:

1. If not already developed and validated for use for the current RTP cycle, MPOs are encouraged to transition to activity-based travel demand models for the following RTP cycle. This can be a phased approach by first developing tour-based travel demand models and then moving to more advanced activity-based travel demand models or moving directly to an activity-based model without a phased approach.

2. They should also build formal microeconomic land use models, as soon as is practical, so that they can be used to evaluate economic welfare (utility) and economic development (wages, jobs, exports).

3. Travel demand processes should incorporate freight movement.

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

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

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

7. Household travel surveys should be activity-based and include a tour table. GPS sampling is encouraged or extra emphasis should be placed on accurate geocoding of households, workplace locations, and stops.

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

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

The following item needs further discussion on whether to be left in place, removed, moved into the policy section of this chapter or moved to a policy section elsewhere in the RTP Guidelines.

10. Economic measures from the land use model could be implemented. These measures are more complete than those from the travel model and include locator welfare, wages, and exports. Equity analysis could include change in welfare by household income class. Water quality, housing affordability, and fire hazard analysis are examples of the measures that such model sets can also produce. These microsimulation land use models can evaluate the energy use and GHGs produced by households and workers in building space. Economic development impacts may be comprehensively evaluated with this model set. Time-of-day road tolls can be evaluated.

Requirements (Shall)

Federal: None

State: None

Recommendations (Should)

Federal: TBD

State: TBD

The following additional requirements and recommendations apply to all MPOs except those that fall under Category A as defined above.

Requirements:

1. Each MPO shall model a range of alternative scenarios in the regional transportation plan based on the policy goals of the MPO and input from the public.

2. MPO models shall be capable of estimating future transportation demand at least 20 years into the future.

3. For federal conformity purposes, each MPO shall model criteria pollutants from on road vehicles as applicable. Emission projections should be performed using ARB's EMFAC modeling software.

4. Each MPO shall determine the greenhouse gas emissions impacts associated with their SB 375 Sustainable Communities Strategy, or Alternative Planning Strategy if applicable, with a methodology deemed acceptable by ARB.

5. The MPO, the State(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

6. The metropolitan transportation plan shall include the projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan.

Recommendations:

1. For the current RTP cycle (post last adoption), MPOs should use their current travel demand model for federal conformity purposes, and a suite of analytical tools, including but not limited to, travel demand models (as described in Categories B through E above), small area modeling tools, and other generally accepted analytical methods for determining the emissions, VMT, and other performance factor impacts of sustainable communities strategies being considered pursuant to SB375.

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

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

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

Requirements (Shall)

Federal: 23 CFR 450.212 Transportation planning studies and project development. 23 CFR 450.322 Development and content of the metropolitan transportation plan. 40 CFR 1502.14 Environmental Impact Statement.
State: California Code Section 14522.2

Recommendations (Should)

Federal: TBD
State: TBD

Sketch Modeling of Scenarios

Modeling groups B, C, D and E may wish to develop fast turnaround sketch modeling tools for testing scenarios in public workshops. These sketch models allow the rapid input of land uses and produce rough estimates of changes for the area being analyzed. After a range of scenarios capable of reducing GHG to various degrees is identified from these exercises, the final set of scenarios is evaluated with the official travel model and land use model, to get accurate and detailed performance measures. The best scenarios may then be included in the RTP, SCS, and APS processes.

Interregional Travel and Modeling

Interregional travel is defined as the sum of the following:

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

The Statewide Travel Demand Model, when updated and fully implemented, will provide interregional trip data to be considered in MPO regional models. In those instances where adjacent MPO models produce dissimilar interregional volumes, the Statewide Travel Demand Model will act as a point of reference which the MPO regional models should reasonably consider. The Department of Transportation will act as facilitator in these situations to help reach consensus.

3.2 Regional Economic and Land Use Model Recommendations

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

Requirements:

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

Recommendations:

1. Regional land use and demographic projections should be consistent with existing local general plans and/or local policies. If a forecast horizon is beyond the horizon of local general plans, the MPO should work with local officials to define a best guess scenario for development beyond the general plan horizon.

2. Microeconomic land use models should be developed for use with activity-based travel demand models. Microeconomic land use models could be used to evaluate economic welfare (utility) and economic development (wages, jobs, exports). Geocoded employment data with occupational code should be purchased for two or more past years. Floor space quantity and rent data should be gathered.

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

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

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

Requirements (Shall)
Federal: 23 U.S.C. §109(h). Executive Order No. 12898 (1994). U.S. DOT Order 5610.2. U.S. DOT Order 6640.23.
State: TBD

Recommendations (Should)
Federal: TBD
State: TBD

3.3 RTP Modeling Quality Control and Consistency

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

E. Consistency of RTP Modeling

Recommendations:

1. For modeling groups *C*, *D*, and *E*, the No Action alternative and the Proposed Plan alternative in an RTP should be modeled consistently, if not employing an integrated/land use model. This means both should be done using the same land

use model and the same travel model. The inputs for the models, including alternative land use policies; will be different, of course. This practice will reduce the arbitrariness of zonal projections for households and employment in travel models.

2. The same land use model used in the RTP modeling should be used in the impact assessment for the No Action alternative, the Proposed Plan alternative, and the Environmentally Preferable Alternative. Only in this way, will all of the outputs in the RTP and EIR be comparable. An alternative-planning scenario under Government Code Section 65080.3 should also be evaluated with the same models.

3. All MPOs should be consistent on how and when post processing should be applied or approached. <<This statement may be modified/expanded pending recommendation of RTAC Coordination Workgroup.>>

Model Peer Review, Testing and Documentation

Recommendations:

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

2. The travel demand model, and regional economic and land use model if applicable, should be documented, including all statistical goodness-of-fit measures derived from sub-model specification. The documentation should be placed on the MPOs website and included in the RTP / SCS / APS review submittal sent to ARB under SB 375.

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

Model Validation and Sensitivity

Recommendations:

1. Models should be validated and tested for sensitivity to changes in inputs, parameter values, and policies. Elasticities for several variables should be calculated and compared to theory and other models. Validation over time with forecasts or backcasts should be performed whenever possible. Validation and sensitivity tests should be documented, and made publicly available with the model documentation.

2. As part of the validation/calibration process, all models should be sensitive to the following items:
    a. Price sensitivity, such as in tolling or congestion-pricing applications

b. Evaluation of outcomes in designated transit-oriented development
c. Evaluation of effects of different local development densities (e.g., single family housing versus multi-family, etc.)
d. Evaluation of development in known industrial areas
e. Evaluation of development of specific "Greenfield" areas, to see how well the model can predict the expansion of the urban area
f. Evaluation of outcomes in redevelopment and infill areas
g. Equity and environmental justice sensitivities, such as effects of transportation and development scenarios on low-income or transit-dependent households
h. Sensitivity to different types of transportation options, including transit, walking and bicycles

Requirements (Shall)
Federal: None
State: None

Recommendations (Should)
Federal: TBD
State: TBD

3.4 RTP Modeling as a Policy Tool

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

1. A clear explanation of the modeling and analytical techniques applied in assessing the implications of the "likely" land use scenario, and any land use and other alternatives studied;
2. Reasonable transparency to that modeling and analytical process;
3. An understanding of the sensitivity of the forecast results to various policy assumptions; for example, where feasible offering estimates of the elasticities and cross elasticities of demand for various modes of travel with respect to critical variables such as access time, travel time, reliability, safety, privacy, and cost;
4. The degree to which analytical results can be expected to be more indicative of a general expected trend or order of magnitude change rather than a quantifiably valid forecast; For quantifiably valid forecasts, provide a qualitative sense of each forecast's expected reliability; and
5. Any insights gained through market-based research into the variables that most influence consumer choices with respect to housing in transit oriented and mixed-use developments, the use of transit services, and decision to use single occupant vehicles.

Requirements (Shall)
Federal: 23 U.S.C. §109(h). Executive Order No. 12898 (1994). U.S. DOT Order 5610.2. U.S. DOT Order 6640.23.
State: None

Recommendations (Should)
Federal: TBD

State: TBD

3.5 Modeling References

"Predicting Air Quality Effects of Traffic-Flow Improvements," NCHRP Report 535

"Assessment of Integrated Transportation/ Land Use Models", Robert Johnston and Mike McCoy, UC Davis for Caltrans, May 2006.
http://www.ice.ucdavis.edu/um/

"Assessment of Local Models and Tools for Analyzing Smart-Growth Strategies," DKS Associates, with UC Irvine and UC Santa Barbara, for Caltrans, July 2007.
http://www.dot.ca.gov/hq/research/researchreports/reports/2007/accessment_local_models_tools_growth_strategies.pdf

"Traveler Response to Transportation System Changes, Interim Handbook," TCRP Web Document 12 (Project B-12), March 2000.

"Metropolitan Travel Forecasting: Current Practice and Future Direction" Transportation Research Board, Special Report 288.

Robert A. Johnston, "Review of U.S. and European Regional Modeling Studies of Policies Intended to Reduce Transportation Greenhouse Gas Emissions" July 30, 2007. On the VTPI web site and available from the author at UC Davis.

Chapter 4

Regional Transportation Plan Contents

General

4.1 Policy, Action, Financial Elements and Sustainable Communities Strategy

The development of the RTP is based on state and federal statutory and regulatory requirements in addition to CTC policy directions. As per Government Code 65080, each MPO/RTPA shall prepare and adopt an RTP directed at achieving a coordinated and balanced regional transportation system including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement and aviation. In addition, the RTP shall be action oriented and pragmatic, considering both short-term (0-10 years) and long-term (10-20 years) periods. Government Code 65080 States the RTP shall include the following components:

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. 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.

Legislation 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.

MPOs/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.

And, as MPOs and RTPAs work towards achieving and increasing Smart Growth Land Use principles within their regions, both MPOs and RTPAs are highly encouraged to include in 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 smart growth strategies, including rural sustainability strategies.

2. Emphasize transportation investments in areas where desired land uses as indicated in the SCS, and the city or county general plan may result in vehicle miles traveled (VMT) reduction or other lower impact use.

3. Taking into account such factors as size and available resources of the MPO, consider the following: a.) Mode splitting that allocates trips between automobile, transit, carpool, and bicycle and pedestrian trips. If a travel demand model is unable to forecast bicycle and pedestrian trips, another means may be used to estimate those trips; b.) Speed and frequency, days, and hours of operation of transit service.

The Action Element

The second major component as required in Section 65080 States that RTPs shall have an "Action Element". The Action Element of the RTP consists of short and long-term activities that address regional transportation issues and needs. All transportation modes (highways, mass transportation, rail, maritime, bicycle, pedestrian and aviation facilities and services) are addressed. In addition, the Action Element should also identify investment strategies, alternatives and project priorities beyond what is already programmed.

The Action Element is divided into two sections. The first section includes a discussion of the preparatory activities such as identification of existing needs, assumptions, and forecasting and potential alternative actions. The second section addresses the data and conclusions.

The Financial Element

The financial element is 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 in funding planning projects.

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.

The Sustainable Communities Strategy (SCS)

SB 375 requires MPOs to prepare a SCS that is part of the RTP utilizing the most recent planning assumptions considering local general plans and other factors. The SCS is statutorily required to:

1. Identify the general location of uses, residential densities, and building intensities within the region.
2. Identify areas within the region sufficient to house all the population of the region, including all economic segments of the population over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth.
3. Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Section 65584.
4. Identify a transportation network to service the transportation needs of the region.
5. Gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Section 65080.01.
6. Consider the state housing goals specified in Sections 65580 and 65581.
7. Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the state board.
8. Allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Section 7506)

For more detailed information regarding the contents of an SCS please refer to Section 4.41 of the RTP Guidelines.

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: None
State: California Government Code Section 65080

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.scrtpa.org/RTplan.htm

http://www.mendocinocog.org/regional_trans_plan2005.shtml

4.2 Adoption - Update Cycles and Amendments

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

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

California State law, (Government Code Section 65080(d)) mirrors the Federal update requirement and States that nonattainment MPOs must update their RTPs at least every four years and attainment MPOs at least every five years. Failure of an MPO to adhere to the State required update period could result in the CTC not adopting the region's FTIP. Non-MPO RTPAs are required by State statute to update their RTPs at least every five years, regardless if they are located in an air quality nonattainment or maintenance area or not.

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 "administration modification."

The definitions in SAFETEA-LU, Title 23 USC 101(a) and 49 USC 5302 clarify major and minor amendments to RTPs.

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

RTP Administrative Modification (minor)
As stated in SAFETEA-LU, Administrative Modification means a minor revision to an RTP that includes minor changes to project/project phase costs, minor changes to funding sources of previously included projects, and other minors changes to projects/project phase initiations 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

Readopting 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 need to look closely at the current status of the RTPs fiscal constraint, conformity determination and any changes to the project scope, cost and schedule of their FTIPs. Re-adopting an RTP could mean that no new projects are presented in the document, nor will there be new projects in the RTPs current update cycle.

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

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

Requirements (Shalls)
Federal: Title 23 USC 450.322 (c), mandatory RTP update cycles for MPOs.
State: CA Government Code Section 65080 (d), mandatory RTP update cycles for RTPAs

Recommendations (Shoulds)
Federal: None
State: None

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

4.3 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 ~~the new requirements identified in SAFETEA-LU~~ federal and state RTP requirements.

~~The 2003 Supplement to the 1999 RTP Guidelines revised the checklist. The format was the same, however,~~ MPOs/RTPAs should ~~now~~ include the page numbers indicating where the Checklist items are addressed in the region's RTP. This requirement of identifying page numbers will assist the general public, federal, state and local agencies to locate the information contained in the RTP.

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

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

Recommendations (Shoulds)
Federal: None
State: None

Best Practices: None

Financial

4.4 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 being to define realistic financing constraints and opportunities. All projects, except illustrative projects i.e. unconstrained projects, must be fully funded in order to be included in the RTP. With this financing information, alternatives are developed and used by the MPO/RTPA, local agencies and State decision-makers in funding transportation projects. During programming and project implementation the total cost of the project is refined and broken out by cost per phase.

Section 6001 of Public Law 109-59, (SAFETEA-LU) requires each transportation plan and each transportation improvement program prepared by the MPO to include a financial plan that demonstrates how the adopted Plan and TIP can be implemented. The Financial Plan should also indicate resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan and FTIP, identify innovative financing techniques to finance projects, programs and strategies, and recommend any additional financing strategies for needed projects and programs. The Federal statutory requirements are codified in Title 23 USC 134(i)(2)(C) and 134(j)(2)(B). Federal regulations pertaining to financial planning and constraint for Statewide and metropolitan transportation plans and programs are codified in Title 23 CFR part 450.

There are six major components that should be addressed in the financial portion of the RTP:

1. Projected Available Funds – The MPO/RTPA, public transit operators and the State shall cooperatively develop estimates of funds that will reasonably be available to support RTP implementation. All anticipated public and private financial resources available over the next 20 years, including estimated highway, local streets and roads, bicycle and pedestrian and transit funds, shall be identified. The financial plan shall include recommendations for additional financing strategies. New funding sources and strategies shall also be identified. Beginning December 11, 2007, all revenue estimates for the financial plan must use an inflation rate that reflects the "year of expenditure dollars" developed cooperatively by the MPO, State and transit operators.

2. Projected Costs – The MPO shall take into account all projects and strategies proposed for funding with Federal, State, local and private fund sources in developing the financial plan. Estimate of costs to implement the projects identified in the four year FTIP and the RTP must be included. Beginning December 11, 2007, both the revenue and construction cost estimates must use inflation rates to reflect "year of expenditure dollars" based on reasonable financial principles and information developed cooperatively by the MPO/RTPA, State and public transportation operators.

3. Projected Operation and Maintenance Costs – The financial plan shall contain system level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways and public transportation. Best practices in developing the RTP financial plan would also include revenue sources for the operation and maintenance of local streets and roads as well as bicycle and pedestrian facilities. Summary of costs to operate and maintain the current transportation system. This should be identified by mode and include the cumulative cost of deferred maintenance on the existing infrastructure. Financial plans that support the RTP process must assess capital investment and other measures necessary to ensure the preservation of:

    A) The existing transportation system, including requirements for operational improvements;
    B) Resurfacing, restoration, and rehabilitation of existing and future major roadways, as well as operations, maintenance, modernization, and rehabilitation of existing and future transit facilities.

4. Constrained RTP - Financially constrained list of candidate projects with the available funding (short and long-term).

5. Un-Constrained (Illustrative) List of Projects - Un-constrained (Illustrative) list of candidate projects if additional funding becomes available (short and long-term). The financial plan may include additional projects that would be included in the adopted transportation plan if additional resources were to become available.

6. Potential Funding Shortfall. The short and long-term needs for system operation, preservation, and maintenance can be enormous. Simply maintaining the existing system can demand a huge investment, while system expansion demands investments of a similar scale. At times, the combination of these competing demands can cause temporary shortfalls to an MPOs or RTPAs budget. To the extent there appear to be shortfalls, the MPO/RTPA must identify a strategy to address these gaps in funding prior

to the adoption of a new RTP - or the amendment of an existing RTP. The strategy should include an action plan that describes the steps to be taken that will make funding available within the time frame shown in the financial plan and needed to implement the projects in the long-range transportation plan. There should be, among other things, a range of options to address projected shortfalls. The strategy may rely upon the MPO/RTPAs or transit operators past record of obtaining funding. If it relies on new funding sources, the MPO/RTPA must demonstrate that these funds are reasonably expected to be available.

Requirements (Shalls)
Federal: Title 23 CFR part 450.322(f)(10)
State: California Government Code Section 65080(b)

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.mtc.ca.gov/planning/2030_plan/index.htm

http://www.bcag.org/__planning/2004_RTP.html

4.5 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 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 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 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 (40 CFR 93 Part 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.

State statute specifies the RTP must be an "internally consistent document". This means the transportation projects identified in an MPO's SCS and the other sections of the RTP must meet the financial forecasts prepared by the MPO's.

Requirements (Shalls)
Federal: :Title 23 CFR part 450.322(f)(10)
State: California Government Code Section 65080(b)

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.sandag.org/index.asp?projectid=292&fuseaction=projects.detail

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

4.6 Listing of Constrained and Un-constrained Projects

In addition to the current list of financially constrained projects identified in the RTP, each Plan should contain a list of needed unconstrained projects (Illustrative projects). Illustrative project means an additional transportation project that may (but is not required to) be included in the RTP if reasonable additional resources were to become available. This unconstrained list will identify projects that are recommended by the MPO/RTPA without a funding source identified. The list should be included separately from the financially constrained project list. It is also preferred that projects on the unconstrained list be identified by transportation corridor within the region.

The following is accomplished by including a list of regionally desired un-funded (Illustrative) transportation projects in the RTP:

1. Assures funding flexibility should additional funding become available.
2. Allows for a more accurate determination of overall transportation needs.

Requirements (Shalls)
Federal: Title 23 CFR part 450.322 (f)(10) Requires a fiscally constrained list of projects.
State: None

Recommendations (Shoulds)
Federal: Title 23 CFR part 450.322 (f)(10)(vii) For illustrative purposes, the list of projects may include additional projects if an additional source of funds if located.
State:

Best Practices:

http://www.mtc.ca.gov/planning/2030_plan/index.htm

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

4.7 Revenue Identification and Forecasting

Revenue forecasts for RTPs can take into account new funding sources that are "reasonably expected to be available." New funding sources are revenues that do not currently exist or that may require additional steps before the MPO/RTPA or transit agency can commit such funding to transportation projects. As required in SAFETEA-LU, strategies for ensuring the availability of these planned new revenue sources must be clearly identified. Future revenues may be projected based on historical trends, including consideration of past legislative or executive actions. The level of uncertainty in projections based on historical trends is generally greatest for revenues in the "outer years" (10 years or more) of an RTP.

According to Title 23 CFR part 450.322 (f)(10)(iv), the MPO shall take into account all projects and strategies proposed for funding under Title 23 U.S.C.; Title 49 U.S.C. Chapter 53; other Federal funds; State transportation funds; local funding sources and private sources of funds for transportation projects. Beginning December 11, 2007, funding estimates contained in the RTP must use an inflation rate to reflect “year of expenditure dollars”.

Title 23 CFR 450.322(f)(10)(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 450.322(f)(10)
State: California Government Code Section 65080(b)

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.bcag.org/__planning/2004_RTP.html

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

4.8 Estimating Future Transportation Costs

As a result of SAFETEA-LU (Title 23 CFR Part 450.322(f)(10)(iv)), costs of future transportation projects must use "year of expenditure dollars" rather than "constant dollars" in cost and revenue estimates to better reflect the time-based value of money. After December 2007, MPOs/RTPAs must ensure project costs identified in both the RTP and FTIP are in year of expenditure dollars. This is particularly crucial for large-scale projects with construction/implementation dates stretching into the future. For those MPOs located in air quality nonattainment and maintenance areas the financial plan developed by the MPO shall address the specific financial strategies and funding sources required to ensure the implementation of TCM's whether or not the TCM's are identified in the SIP pursuant to Title 23 CFR 450.322 (f)(10)(vi).

Reporting the costs in year of expenditure dollars will provide the proper context to express a more realistic estimate of future construction costs. After cost estimates are prepared for the RTP and FTIP, the costs should be expressed in year of expenditure dollars. This can be done by assigning an inflation rate per year to the proposed midpoint of construction. Make certain that the selected year of expenditure reflects a realistic scenario, taking into account project planning and development durations, as well as construction. Inflation rates may be different for specific cost elements (e.g. construction vs. right-of-way). The RTP should clearly specify how inflation is considered in the estimate and clearly State that the estimate is expressed in year of expenditure dollars. Consider multiple sources for determining the inflation rate, including nationwide and local references. Include consideration of any locality-specific cost factors that may reflect a growth rate significantly in excess of the inflation rate, such as land acquisition costs in highly active markets. The inflation rate(s) should be based on sound, reasonable

financial principles and information, developed cooperatively by the MPO/RTPA and transit agencies. To ensure consistency, similar financial forecasting approaches ideally should be used for the RTP and FTIP. In addition, the financial forecast approaches, assumptions, and results should be clear and well documented.

In relation to the MPOs financial plan, SAFETEA-LU now permits the use of aggregate cost ranges or cost bands. " For the outer years of the metropolitan transportation plan (i.e. beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding sources(s) is reasonably expected to be available to support the projected cost ranges/cost bands.

Revenues and related cost estimates for operations and maintenance should be based on a reasonable, documented process. Some accepted practices include:

Trend analysis - A functional analysis based on expenditures over a given duration, in which costs or revenues are increased by inflation, as well as a growth percentage based on historic levels. This analysis could be linear or exponential. When using this approach, however, it is important to be aware of new facilities or improvements to existing facilities. Transit operations and maintenance costs will vary with the average age of the bus or rail car fleet.

Cost per unit of service – Examples include: lane-mile costs; centerline mile costs; traffic signal cost; transit peak vehicles by vehicle type; revenue hours; and vehicle-miles by vehicle type.

Regardless of the methodology employed, the assumptions should be adequately documented by the MPO/RTPA and transit agency. Estimating current and reasonably available new revenues and required operations and maintenance costs over a 20-year planning horizon is not an exact science. To provide discipline and rigor, MPOs/RTPAs and transit operators should attempt to be as realistic as possible, as well as ensure that all costs assumptions are publicly documented.

Requirements (Shalls)
Federal: Title 23 CFR part 450.322(f)(10)
State: California Government Code Section 65080(b)

Recommendations (Shoulds)
Federal: Title 23 CFR 450.322 (f)(10)(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.

4.9 Asset Management

From increased vehicle miles traveled, growing population, and greater congestion to aging infrastructure and escalating operating costs, today's challenging circumstances put demands greater than ever on the transportation system. The goal of asset management is to minimize

the life-cycle costs for managing and maintaining transportation assets, including roads, transit, bridges, tunnels, runways, rails, and roadside features.

The American Association of State Highway and Transportation Officials (AAHSTO) defines 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 decisionmaking based upon quality information and well defined objectives."*

Through the use of management systems, engineering and economic analysis, and other tools, MPOs/RTPAs and transit operators can more comprehensively view the big picture and evaluate collected data before making decisions as to how specific resources should be deployed. Asset management principles and techniques should be applied throughout the planning process, from initial goal setting and long-range planning to development of the TIP and then through operations, preservation, and maintenance.

MPOs/RTPAs should ensure the transportation system is managed to meet both current and future demands and that expenditures are optimal. Asset management principles and techniques are valuable tools that can be applied by an MPO/RTPA and result in more effective decisionmaking. The MPO/RTPA role in a successful asset management program includes defining performance measures for assets through public involvement, serving as a repository for asset data, and promoting standard data collection and technology applications. MPOs/RTPAs can also educate the public and decisionmakers and work cooperatively with stakeholders across transportation modes.

Title 23 CFR Part 450.306(e) States the following concerning asset management:

> *"In carrying out the metropolitan transportation planning process, MPOs, States, and public transportation operators may apply asset management principles and techniques in establishing planning goals, defining TIP priorities, and assessing transportation investment decisions, including transportation system safety, operations, preservation, and maintenance, as well as strategies and policies to support homeland security and to safeguard the personal security of all motorized and non-motorized users."*

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. Match service provided to public expectations.
5. Make more informed, cost-effective program decisions and better use of existing transportation assets.

MPOs/RTPAs should consider including asset management principles in the development of their RTPs.

Additional information is available from the FHWA at:

http://www.fhwa.dot.gov/infrastructure/asstmgmt/tpamb.cfm

Requirements (Shalls)
Federal: None
State: None

Recommendations (Shoulds)
Federal: Title 23 CFR Part 450.306(e) - MPOs, States, and public transportation operators may apply asset management principles and techniques in establishing planning goals, defining TIP priorities, and assessing transportation investment decisions.
State: None

Best Practices:

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

http://www.hcaog.net/docs/RTP.2006

Consultation/Coordination

4.10 Consultation & Coordination

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

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

In addition to having an extensive public participation process, each MPO/RTPA should coordinate its regional transportation planning activities with all transportation providers, facility operators such as airports, appropriate federal, State, local agencies, Native American Tribal Governments, environmental resource agencies, air districts, pedestrian and bicycle representatives and adjoining MPOs/RTPAs. The RTP shall (Title 23, CFR Section 450.316(a)(13)) reflect consultation with resource and permit agencies to ensure early coordination with environmental resource protection and management plans.

RTPs are required to be developed in coordination with local and regional air quality planning authorities (Title 23, Section 134 (g)(3)) and shall (Title 40 CFR Section 93.105 (b)) reflect specific consultation activities with air quality agencies on the development of the RTP. MPOs/RTPAs participate in air quality planning by providing vehicle counts for emissions inventories. They also develop methods to reduce transportation related emissions. This participation helps lay the groundwork for future SIP conformity determinations. All MPOs/RTPAs in nonattainment and maintenance areas must coordinate the development of their RTPs with the Air Quality Management District(s) located within the MPOs region in order to ensure conformity with the SIP. The federal Clean Air Act Amendments of 1990 requires SIP development to be coordinated with the transportation planning process (Title 42, Section 7504(b)). Detailed requirements may also be found in 40 CFR 51 and 93 (Transportation Conformity rules).

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

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

In summary, the consultation process shall:

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

Requirements (Shalls)
Federal: None
State: None

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

Best Practices:

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

http://www.mcagov.org/publications.htm

4.11 Participation Plan

Involving the public in planning and project development poses a major challenge. 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 MPO/RTPA undertakes. It is a primary avenue for public participation in the long-range transportation planning process. Title 23 CFR Part 450.316(a) states the following concerning participation and consultation:

"The MPO shall develop and use a documented participation plan that defines a process for providing citizens, affected public agencies, representatives of public transportation employees, 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."

The purpose of the MPOs/RTPAs participation plan is to establish the process by which the public can participate in the development of regional transportation plans and programs. The public participation plan should be designed to assist MPO/RTPA staff in implementing an effective public participation process through a variety of strategies. It provides MPO/RTPA staff with a menu of techniques or activities from which they can tailor their specific program's input process. Which public participation methods the MPO/RTPA uses will require a careful analysis of what is wished to be accomplished as well as the scope of the particular transportation project. Plenty of flexibility is available to MPOs/RTPAs in developing specific public involvement programs. Every given situation or region in California is different, and each approach to a specific public involvement challenge will be unique.

When significant written and oral comments are received on the draft RTP and as a result of the participation process or the interagency consultation process required under the EPA transportation conformity regulations (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 the public participation plan should be prepared prior to the development of the RTP. The public participation plan should have public input during its preparation and have a 45-day comment period before the MPOs/RTPAs board adopts it. This enhanced public participation plan is a new requirement as a result of SAFETEA-LU.

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

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

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

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

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

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

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

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

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

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

For MPOs only, SB 375 increased the expected level of public participation in the regional transportation planning process to include more collaboration between all partners in the region. MPO's currently have a Public Participation Plan per federal requirements. The public participation requirements for development of the SCS can be incorporated into the existing plan. More than one plan is not required. Prior to the Public Participation Process for development and review of the SCS (as identified in Government Code 65080), the MPO will

need to provide the ARB with the technical methodology it intends to use to estimate the GHG emissions from its SCS, and if appropriate, the APS. The ARB and the MPO will also need to work collaboratively to ensure the ARB is able to conclude the technical methodology identified by the MPO operates accurately.

Public Participation and Consultation for the development of an RTP remains an essential element of the overall RTP process. Public participation processes using visioning tools, including sophisticated or simple maps, lead to open and efficient consideration of proposed scenarios and can lead to a well-informed public selection of an SCS. The development of the SCS further emphasizes the need for community and stakeholder outreach and involvement. A Public Participation Plan includes public outreach, public awareness, and public input beginning with the planning stage.

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

- Outreach efforts encouraging the active participation of a broad range of stakeholders in the planning process, consistent with MPO's adopted Federal Public Participation Plan. This includes, but is not limited to, affordable housing advocates, transportation advocates, neighborhood and community groups, environmental advocates, home builder representatives, broad-based business organizations, landowners, commercial property interests, and homeowner associations.
- Consultation with congestion management agencies, transportation agencies, and transportation commissions.
- Regional, public workshops with information and tools providing a clear understanding of policy choices and the issues. At least one workshop in each county. At least three workshops for counties with a population greater than 500,000. As practicable, each workshop shall include urban simulation computer modeling to create visual representations of the SCS and APS.
- Preparation and circulation of a draft SCS and APS, if any, not less than 55 days before adoption of a final RTP.
- At least three public hearings on the draft SCS in the RTP and APS, if any. For a single county MPO, at least two public hearings shall be held. To the maximum extent feasible, hearings are in different parts of the region maximizing the public's participation opportunity.
- A process enabling the public to provide a single request to receive notices, information and updates.

This public participation plan is not required to be reviewed or approved by any state agency and is not necessary to be included as part of the RTP. It is recommended these additional requirements should be included in the federally required public participation plan.

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

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

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

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

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

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

http://www.tehamacountypublicworks.ca.gov/Transportation/index.htm

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

Federal guidance for Environmental Justice analysis can be found at

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

4.12 Private Sector Involvement

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

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

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

MPOs/RTPAs should take necessary actions to ensure major trucking firms, large employers and business organizations are formally invited to participate in the preparation of the RTP. The MPO/RTPA should strive to include any major long-range plans of these organizations that may have an impact on the regional transportation system. The purpose is to provide private sector transportation providers a process of communication and involvement into the region's

transportation planning process. The specific outreach techniques developed and ultimately used is dependent on the size and composition of the region. These efforts to solicit input into the long-range regional transportation planning process should be documented in the RTP.

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

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

Best Practices:

http://www.sacog.org/goodsmovement

4.13 Consultation with Interested Parties

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

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

1. Citizens;
2. Affected public agencies;
3. Representatives of public transportation employees;
4. Freight shippers;
5. Private providers of transportation;
6. Representatives of users of public transportation;
7. Representatives of users of pedestrian walkways and bicycle transportation facilities;
8. Representatives of people with disabilities;
9. Providers of freight transportation services; and,
10. Other interested parties.

Requirements (Shalls)
Federal: Consulting with interested parties on plans, programs and projects shall include individuals or organizations that are not 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 450.322(g) states that MPOs shall consult as appropriate with State and local agencies

responsible for land use management, natural resources, environmental protection, conservation and historic preservation during the development of their RTP. RTPAs shall comply with this as well.
State: None

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

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

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

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

4.14 Requirements for Input/Consultation with Local Elected Officials During SCS and/or APS Development

This section applies only to federally-designated Metropolitan Planning Organizations which are statutorily required per SB 375 to prepare a Sustainable Communities Strategy (and if applicable, an Alternative Planning Strategy).

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

During the development of the SCS (and APS if applicable), each MPO shall conduct at least two informational meetings in each county within the region for members of the board of supervisors and city councils. The purpose of these meetings will be to present a draft SCS and gather input and comments. One informational meeting will suffice if it's attended by representatives of the county board and city council. The city council officials must represent a majority of the population in the incorporated areas in the county. Notices of these meetings are to be sent to the clerk of the board of supervisors and city councils.

Continuing with a collaborative transportation planning process, MPOs work and consult with local elected officials as key stakeholders in the regional transportation system. Consultation can also include:

- Adequate public notice on RTP, and public participation plan comment opportunities
- Providing additional RTP comment opportunities if final version differs due to additional comments
- Visualization techniques describing the RTP
- Electronically accessible RTP
- Convenient and accessible public RTP hearings
- Demonstration of consideration and response to public input on RTP
- Seek and consider needs of traditionally underserved populations by existing transportation systems
- Coordinate with state transportation planning and public involvement processes

- Periodically review intended RTP outcomes, products and/or services

The MPO conducts at least two informational meetings in each county for members of the board of supervisors and city councils on the SCS and APS, if any. Only one informational meeting is needed if it is attended by representatives of the county board of supervisors, and the city council members, representing a majority of the cities for a majority of the population in a county's incorporated areas.

4.15 Interagency Consultation (IAC) on SCS Development

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

1. Federal agencies (including FWHA, EPA and FTA)
2. California Department of Housing and Community Development (HCD)
3. Air Resources Board (ARB)

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

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

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

4.16 Native American Tribal Government Consultation and Coordination

During the development of the RTP, Tribal Government ***consultation*** can be described as the MPO/RTPA conducting meetings with representatives of the federally recognized Tribal Government during the preparation of the RTP prior to taking action(s) on the plan and making sure to consider input from the tribe. Tribal Government ***coordination*** is the comparison of the MPOs/RTPAs transportation plans, programs, projects and schedules with similar documents prepared by the tribe. The MPO/RTPA needs to ensure consistency with tribal plans and the RTP.

Currently there are 108 federally recognized Tribes in California. The federally recognized Tribal Governments hold inherent power of limited sovereignty and are charged with the same responsibility as other governmental authorities. In addition, California is home to the largest Native American population in the country, including non-federally recognized Tribes, and urban Indian communities.

The MPO or RTPA should include a discussion of consultation, coordination and communication with federally recognized Tribal Governments when the tribes are located within the boundary of an MPO/RTPA. The MPO/RTPA should establish a government-to-government relationship

with each Tribe in the region. This refers to the protocol for communicating between the MPOs/RTPAs and the Tribal Governments as a sovereign nation. This consultation process should be documented in the RTP. The initial point of contact for Tribal Governments should be the Chairperson for the tribe.

The MPO/RTPA should develop protocol and communication methods for outreach and consultation with the Tribal Governments. However these protocol/communication methods should be re-evaluated if the agencies are un-successful in soliciting 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.

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

Requirements (Shalls)
Federal: Title 23 CFR part 450.316(c) requires MPOs to involve the federally recognized Native American Tribal Government in the development of the RTP and FTIP. RTPAs shall comply as well.
Title 23 CFR part 450.316 (a)(1), the participation plan shall be developed by the MPO in consultation with all interested parties and shall, at a minimum, describe explicit procedures, strategies and desired outcomes. The requirement of including interested parties in the development of the participation plan and the RTP would include federally recognized or non-federally recognized tribes.
State: None

Recommendations (Shoulds)
Federal: None
State: None

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

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

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

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

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

4.17 Consultation with Resource Agencies

Current federal regulations require MPOs to consult with resource agencies, State and local agencies responsible for land use management, environmental protection, conservation, and historic preservation concerning the development of the RTP.

The consultation efforts shall involve:

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

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

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

Some examples of resource agencies that could included in a more seamless multi-agency process, but are not limited to California Environmental Protection Agency (EPA), California Coastal Commission, and US Fish and Wildlife, U.S. Army Corp of Engineers, California Department of Fish and Game and California Department of Parks and Recreation. An MPO/RTPA shall coordinate and consult with resource agencies on data or information sharing, if available.

The following is a preliminary list of resource agencies that should be consulted in the development of the RTP:

1. Federal agencies (including FWHA, EPA and FTA);
2. U.S. Army Corps of Engineers;
3. NOAA Fisheries Services;
4. U.S. National Park Service;
5. U.S. National Marine and Fishery Service;
6. California Environmental, energy, resource and permit agencies;
7. California Coastal Commission;
8. California Energy Commission;
9. California Office of Planning and Research;
10. California Environmental Protection Agency;
11. California Resources Agency;
12. California Water Resources Control Board;
13. California Regional Water Quality Control Board;
14. California Department of Fish and Game;
15. California Integrated Waste Management Board;
16. California Air Resources Board;
17. Bay Conservation and Development Commission (Bay Area);
18. Regional Air Quality Management Districts, and,
19. Private sector carpools / rideshare coordinators.
20. California Department of Parks and Recreation.

21. California Department of Housing and Community Development (HCD)
22. California Department of Conservation State Mining and Geology Board

The challenge will be getting a speedy response or comments on the RTP, its programs and projects. It is understandable that these efforts will depend on the specific region. MPOs in the Sacramento Valley and Southern California have chosen to send letters requesting comment/s on plans, programs and projects and when they do not hear back from the resource agencies, they now ask, "why are you not able to comment?"

Caltrans maintains a list of federal and State resource agencies that should be consulted during the preparation of the RTP. This list is available through the Caltrans website or by notifying Caltrans transportation planning staff.

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.

Requirements (Shalls)
Federal: Title 23 CFR part 450.322(g)(1) & (g)(2) requires MPOs to consult and compare plans, maps, and natural or historic resources with resource agencies, State and local agencies responsible for land use management, environmental protection, conservation, and historic preservation agencies.

State: California Environmental Quality Act (CEQA), consultation with agencies, governments or individuals that could potentially be impacted by transportation projects in the RTP.

Recommendations (Shoulds)
Federal: None
State: None

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

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

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

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

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

4.18 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 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 (49 U.S.C Section 5310), Job Access and Reverse Commute Program (49 U.S.C Section 5316), and New Freedom Program (49 U.S.C Section 5317). Information on these programs can be found at:

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

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

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

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

Requirements (Shalls)
Federal: None
State: None

Recommendations (Shoulds)
Federal: Title 23 CFR 450.306(g) 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 49 U.S.C. 5310, 5316 and 5317.
State: None

Best Practices: None

Modal Discussion

The RTP is the key document prepared by the MPO/RTPA that reflects future plans of the transportation system for the region. This future vision includes all modes of transportation and is one of the key functions of the RTP.

Both federal regulations and State statute require RTPs to address each transportation modes individually. Title 23 CFR 540.322(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*."

Title 23 CFR 450.322(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.

4.19 Highways, Local Streets & Roads

The section of the RTP discussing highways, local streets and roads should consider the following:

1. An overview of the primary highway and arterial road system within the region;
2. Dual access of the local road system with bicycles;
3. National and State highway system, and regionally significant streets and roads;
4. Any corridor preservation processes for possible future transportation projects (i.e. Right of Way, historic highways, abandoned rails);
5. Local maintenance and rehabilitation needs (including deferred maintenance);
6. Maintenance of State highways;
7. Data collection and other infrastructure requirement for ITS; and,
8. Unmet highway needs.

Requirements (Shalls)
Federal: Title 23 CFR 450.322(b) requires short and long-range strategies for an integrated multimodal transportation system.
State: Government Code Section 65080(a) requires that the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.scrtpa.org/RTplan.htm

http://www.pctpa.org/library/rtp2027/rtp2027_final.htm

http://www.trpa.org/default.aspx?tabindex=13&tabid=317

4.20 Transit

Transit plays a key role in the regional effort to reduce traffic congestion, VMT and vehicle emissions particularly in urbanized areas. The increased use of transit by the general public will also be a key element to reducing greenhouse gas emissions that contribute to global warming. Transit systems also play an important role in the mobility of people who are elderly, people who are low-income and people with disabilities. Given these reasons, it is crucial for MPOs/RTPAs to engage in a continual 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; and,
10. ITS elements to increase efficiency, safety and level of service.

Requirements (Shalls)
Federal: Title 23 CFR part 540.322(b) requires short and long-range strategies for an integrated multimodal transportation system.
State: Government Code Section 65080(a) the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

Recommendations (Shoulds)
Federal: None
State: None

Best Practices: None

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

Goods movement is at the heart of California's economy. With the vast array of products that need to get from here to there, the importance of the multi-model transportation system is paramount. Infrastructure degradation would have a crippling effect on the business, safety and quality of life.

The RTP section discussing goods movement should identify the following:

1. The role of goods movement within the region (this general discussion will include intermodal connectivity between all applicable maritime facilities, freight rail lines, inventory of major routes used for trucking, major warehouses and freight transfer facilities, and aviation cargo facilities);
2. Plans for future expansion of seaport and airport cargo handling facilities and issues regarding access to these ports;
3. Projections for future expansion of freight rail lines within the region;
4. Freight rail and Maritime port access issues (if applicable);
5. USA/Mexico border crossing issues (if applicable);
6. State maritime policy and plans; and,

7. ITS issues relating to goods movement.

Requirements (Shalls)
Federal: Title 23 CFR 450.322(b) requires short and long-range strategies for an integrated multimodal transportation system.
State: Government Code Section 65080(a) requires that the RTP shall be directed at achieving a coordinated and balanced regional transportation system.

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.mtc.ca.gov/planning/2030_plan

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

4.22 Regional Airport System

Airports are a major contributor to the local, state and national economy. The value of the State's air cargo is approximately over $173 billion and the California share of the U.S. travel market is approximately twelve percent.

The RTP section addressing aviation should identify the following:

1. An overview of the role the airport system within the region;
2. An airport inventory of the commercial and general aviation airports within the region. This should include a general description of each airport (number of commercial flight, based aircraft, number of annual operations, etc.);
3. Airport ground access and required ground access plans - If region contains primary air-carrier airport(s), the RTP shall include an Airport Ground Access Improvement Program as specified in California Government Code 65081. A primary air-carrier airport is defined by the Federal Aviation Administration as having 10,000 annual passenger enplanements;
4. Short and long-range capital improvement plans and projects for the airports within the region;
5. Outcomes of the California Aviation System Plan and regional aviation system planning efforts; and,
6. The identification of the State required Airport Land Use Commission within the region and discussion of the Airport Land Use Compatibility Plan.

Requirements (Shalls)
Federal: Title 23 CFR 450.322(b) requires short and long-range strategies for an integrated multimodal transportation system.

State: California Government Code 65081.1 requires each RTPA with a primary air-carrier airport to have an Airport Ground Access Improvement Program for mass transportation.

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.actc-amador.org/projects/reports.php

4.23 Bicycle & Pedestrian

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. The RTP section discussing bicycle and pedestrian issues should identify the following:

1. Bicycle routes within the region (including bicycle routes on local streets);
2. Policies, plans and programs used to promote the usage of bikes and walking;
3. Transit interface with bicyclists and pedestrians; and,
4. Unmet bicycle and pedestrian needs.

AB 1396 – California Coastal Trail

Enacted in 2007, AB 1396 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.

AB 1396 added Section 65080.1 to the Government Code pertaining to regional transportation plans:

65080.1. *Each transportation planning agency designated under Section 29532 or 29532.1 whose jurisdiction includes a portion of the California Coastal Trail, or property designated for the trail, that is located within the coastal zone, as defined in Section 30130 of the Public Resources Code shall coordinate with the State Coastal Conservancy, the California Coastal Commission, and the Department of Transportation regarding development of the California Coastal Trail, and each transportation planning agency shall include provisions for the California Coastal Trail in its regional plan under Section 65080.*

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

http://www.coastalconservancy.ca.gov/Programs/cct/Coastal_Trail.htm

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

Requirements (Shalls)
Federal: Title 23 CFR 450.322(f)(8) requires MPOs to include a discussion of pedestrian walkways and bicycle transportation facilities in accordance with Title 23 USC 217(g)

State: Government Code Section 65080(a) requires that the RTP shall be directed at achieving a coordinated and balanced regional transportation system. Government Code Section 65080.1 requires that each transportation planning agency consult with appropriate agencies and include provisions for the California Coastal Trail in its Regional Transportation Plan.

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.ambag.org/planning/MTP.html

Programming/Operations

4.24 Transportation System Operations & Management

The RTP shall address operational and management 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) and bicycle and transit trip planning.

Although operational and management strategies may be implemented on a regional, area-wide, or project-specific basis, those 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 49 USC 5309.

Requirements (Shalls)
Federal: Title 23 USC Section 134, 450.322 (f)(3) requires strategies for improving the regional transportation system and reducing congestion.
State: None

Recommendations (Shoulds)
Federal: None
State: None

Best Practices: A U.S. Department of Transportation document titled; "Management & Operations in the Metropolitan Transportation Plan: A Guidebook for Creating an Objectives-Driven, Performance-Based Approach" provides a very good overview on how to integrate transportation system management and operations into the planning process.

4.25 Coordination With Programming Documents

The Federal Transportation Improvement Program (FTIP) is a four-year prioritized listing of federally funded and non-federally funded regionally significant transportation projects that is developed and formally adopted by an MPO as part of the metropolitan transportation planning process. MPOs work cooperatively with public transportation agencies as well as other local, state, and federal agencies to propose projects for inclusion in the FTIP. Each project or project phase in the FTIP must be consistent with the approved RTP. The FTIP must be updated at least every four years. MPOs may also refer to the FTIP as the Metropolitan Transportation Improvement Program (MTIP). Specific requirements for the development and content of the FTIP are contained in Title 23 CFR Part 450.324.

As with the RTP, some MPOs refer to their four-year FTIP by other terms. Below is table outlining the various terms used by federal, state and the MPOs to refer to the same documents, the four-year FTIP prepared by the MPOs and the STIP, which is prepared by Caltrans and includes all of the FTIPs and projects from the non-MPO counties.

Federal Term Used	State Term Used	Terms Used by MPOs
TIP	FTIP	TIP, MTIP, FTIP, RTIP
FSTIP	STIP	FSTIP

Projects included in the FTIP may include projects from two other State programming documents: (1) the State Highways Operation and Protection Program (SHOPP), and (2), the State Transportation Improvement Program (STIP). The purpose of the SHOPP program is to maintain safety, operational integrity and rehabilitation of the State Highway System. The STIP is a five-year capital improvement program of transportation projects funded with revenues from the State Highway Account and other sources on and off the State Highway System. Caltrans manages the SHOPP program, while the CTC manages the STIP. The STIP is five-year document and is updated every other year. SHOPP is a ten-year document and is adopted by the CTC in August of each odd numbered year. These two programs are major components of the FTIP.

The Federal Statewide Transportation Improvement Program (FSTIP) is a compilation of the FTIPs prepared by the 18 MPOs. It also includes projects in rural areas of the state not represented by an MPO. The FSTIP is prepared by Caltrans and submitted to the Federal Highway Administration and Federal Transit Administration for approval. The FSTIP covers a four-year period and must be updated at least every four years. States have the option to update more frequently, if desired. Federally funded projects or non-federally funded regionally significant projects cannot be added to the FTIP or FSTIP unless they are included in the RTP. Specific requirements for the development and content of the FSTIP are contained in Title 23 CFR part 450.216.

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

Requirements (Shalls)
Federal: Title 23 CFR part 450.324(a) requires MPOs to prepare a transportation improvement program (TIP).
State: None

Recommendations (Shoulds)
Federal: None
State: None

Best Practices: None

4.26 Transportation Projects Exempted from Senate Bill 375

This section addresses exemption of projects from the requirements associated with the Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS)

Section 4 paragraph (b) subparagraph (2) (K) of SB 375 exempts of any of the following classes of projects from the SCS and APS requirements:

1. Projects programmed for funding on or before December 31, 2011
2. Projects included in the 2007 or 2009 Federal Statewide Transportation Improvement Program,
3. Projects funded pursuant to the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 (projects funded from Proposition 1B)
4. Projects specifically listed in a ballot measure prior to December 31, 2008

This exemption does not prevent MPOs from including projects from the exempted classes of projects in their SCS or APS. A project from one of the exempted classes of projects continues to be exempted regardless of its inclusion or exclusion from the SCS or APS.

4.27 Regionally Significant Projects

40 CFR Part 93.101 defines regionally significant projects as follows:

> *"Regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guide way transit facilities that offer an alternative to regional highway travel."*

All regionally significant projects must be included in an RTP air quality conformity determination by the MPO and FHWA regardless of its funding source. These regionally significant projects should be specifically identified and noted in the project-listing portion of RTP.

Requirements (Shalls)
Federal: Title 23 CFR part 450.324(d) requires all regionally significant projects be included in the TIP regardless if the projects are to be funded with federal funds or not.

State: None

Recommendations (Shoulds)
Federal: None
State: None

Best Practices: None

4.28 Regional ITS Architecture

Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion and improve safety. ITS is one way to increase the efficiency, safety and security of a transportation system. ITS involves the use of advanced computer, electronic and communications technologies and emphasizes *enhancing travel on existing infrastructure* (highways, streets, bridges, trains). Some examples of ITS technologies include advanced traffic signals, roadway and weather monitoring stations, bus and maintenance vehicle location systems, electronic roadside information signs and automated vehicle control systems.

The National ITS Program was established by ISTEA in 1991. Further federal regulations focused on extending ITS to regional planning efforts and training transportation professionals to deal with the range of issues associated with the adoption of advanced transportation technology. The development of the regional ITS architecture is not meant to compete with the formal transportation planning process. In fact, key ITS projects and initiatives are targeted early in the planning process. When updating RTPs, MPOs/RTPAs should be sure to comply with current federal regulations. Title 23 CFR part 450.306 (f) states that "*The metropolitan transportation planning process shall, to the maximum extent practicable, be consistent with the development of applicable regional intelligent transportation systems (ITS) architectures, as defined in Title 23 CFR part 940.*"

Title 23 CFR part 940 establishes the protocol for developing a regional architecture plan that, in turn, conforms to national ITS architecture standards. The ITS regulations defines the responsibilities for creating and maintaining Regional ITS Architecture (RA) frameworks. Architecture maintenance is the process of updating a regional architecture with references to new projects and activities, new stakeholders; additions, retirement or replacement of equipment; and, changes to standards and protocols. Maintenance is an ITS program responsibility under Title 23 CFR part 940.

The intent of the federal ITS requirement is to encourage reciprocal consistency. Title 23 CFR part 940.5, Intelligent transportation system architecture and standards, calls for the "development of the regional ITS architecture (to) be consistent with the (Metropolitan) transportation planning process…". It is important to coordinate the general RTP planning efforts with plans for specific projects that entail the use of ITS technology. These 'nested' plans should be developed in an open forum and they should be consistent. The resultant plans would reflect consideration of both documents during the planning process.

The National ITS Architecture and other related resources can be found at the United States Department of Transportation's (US DOT's) Architecture website:

http://www.its.dot.gov/arch/arch.htm

Requirements (Shalls)
Federal: Title 23 CFR part 450.306(f) states that the RTP shall (to the extent practicable) be consistent with the development of applicable regional ITS architectures as defined in Title 23 CFR part 940.
State: None

Recommendations (Shoulds)
Federal: None
State: None

Best Practices:

http://www.bcag.org/__planning/2004_RTP.html

4.29 Performance Measures

Transportation performance measures consist of a set of objectives, measurable criteria used to evaluate the performance and effectiveness of the transportation system, government policies, plans and programs. Performance measures use statistical evidence to determine progress toward specific and defined objectives. This includes both evidence of fact, such as measurement of pavement surface smoothness (quantitative) and measurement of customer perception determined through customer surveys (qualitative). Performance measures help set goals and outcomes, detect and correct problems, and document accomplishments.

These performance measures in the RTP set the context for judging the effectiveness of the FTIP as a program, by further RTP goals and objectives, whereas, the STIP Guidelines address performance measures of specific projects. Government Code Section 14530.1 (b) (5) requires more detailed project specific "objective criteria for meeting system performance and cost effectiveness of candidate projects" in the STIP Guidelines (Section 19). The program level performance measures in the RTP set the context for judging the effectiveness of the FTIP, as a program, in furthering the goals and objectives of the RTP, while the STIP Guidelines address performance measurements of specific 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's measured and the results and analysis of the eventual outcomes.

On highway projects Caltrans considers system 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, etc. Examples of performance measures include:

1. Improve Mobility/Accessibility;
2. Preserve the Transportation System;
3. Safety & Security;
4. Reliability;

5. Economic Well Being;
6. Equity;
7. Cost-effectiveness;
8. Environmental Quality; and,
9. Customer Satisfaction.

An example of how regions could use the following criteria in their RTP discussion for measuring performance of specific projects:

1. Change in vehicle occupant, freight and goods travel time or delay;
2. Change in collisions and fatalities;
3. Change in vehicle and system operating costs;
4. Change in access to jobs, markets and commerce;
5. Change in frequency and reliability of rail/transit service;
6. Change in air pollution emissions; and,
7. Change in passenger, freight and goods miles carried.

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 access to jobs, markets and commerce per thousand dollars invested;
5. Increased frequency reliability of rail/transit service per thousand dollars invested;
6. Decrease in air pollution emissions per thousand dollars invested; and,
7. Increase in annual passenger, freight and goods miles carried per thousand dollar invested.

The goals and objectives in the RTP should be linked and consistent with the goals and objectives of the FTIPs and ITIP. Each MPO/RTPA and Caltrans is being asked to provide a quantitative and/or qualitative evaluation of their FTIPs 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:

http://www.dot.ca.gov/hq/transprog/stip.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. Caltrans has also included 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

Requirements (Shall)
Federal: None
State: California Government Code Section 14530.1(b)(5) requires more detailed project specific information.

Recommendations (Should)
Federal: None
State: None

Best Practices: See above
Caltrans recommends using performance measures to measure the progress of regional projects. MPOs/RTPAs should take into account the benefits of using performance measures to establish a base of measurement and cross-reference the measurement with the performance measure outcome/results. These measurements can be used to justify the need for funding on specific projects. The scientific data may support regional needs and highlight the justification for funding a project that demonstrates the potential for improved performance on the Caltrans system or regional road network.

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/stip.htm

4.30 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.

Under the prior federal surface transportation reauthorization known as TEA-21, safety and security were lumped together in one federal planning factor. SAFETEA-LU has changed this in order to signal the importance of these two items. Safety and security are now separate federal planning factors. According to Title 23 CFR part 450.306(a), these two planning factors are:

1. Increase the safety of the transportation system for all motorized and non-motorized users; and,
2. Increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and non-motorized users

The public expects, and demands, that the transportation system be safe and efficient for all users. Addressing the improvement of transportation safety can help alleviate a myriad of health, financial, and quality-of-life issues for travelers. Fatalities and injuries from motor vehicles crashes are a major public health problem. Historically, transportation safety has not been included as part of the transportation planning process. A clear need has developed for safety to be considered as part of planning process instead of as a reactionary consideration as

it as been. To be adequately addressed, safety must be a key goal within the process. Improving the safety of the transportation network requires an active, conscious approach to monitoring the transportation system for safety problems and anticipating problems before they occur.

SAFETEA-LU requires MPOs to draw a strong link between the Strategic Highway Safety Planning process described in Title 23 U.S.C. 148 and the regional planning process. Federal regulations also require MPOs to summarize the priorities, goals, countermeasures or projects of the Strategic Highway Safety Plan in their RTPs. As a result of new requirements contained in SAFETEA-LU, each State must have a Strategic Highway Safety Plan (SHSP) in place by October 1, 2007 to receive its full share of federal transportation funds. RTPAs will also be held to this same level of addressing safety in during the development of their RTPs.

Each MPO and RTPA should review the California SHSP during the preparation of the portion of the RTP addressing safety. The SHSP:

1. Highlights challenges to roadway user safety on California's roads;
2. Provides a descriptive account of fatalities experienced on California's roads;
3. Proposes high-level strategies to reduce fatalities for each challenge; and,
4. Serves as a guide for the implementation of specific projects and activities through 2010.

The California SHSP is available on the Caltrans website at:

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

Requirements (Shall)
Federal: Title 23 CFR part 450.306(a)(2) states the planning process will address the safety of the transportation system for the public.
State: None

Recommendations (Should)
Federal: Title 23 CFR Part 450.306(h) states that RTPs should be consistent with the California Strategic Highway Safety Plan (SHSP) and other transit safety and security planning and review processes.
Title 23 CFR 450.322(h) states the RTP should include a safety element that incorporates or summarizes the priorities, goals, countermeasures or projects for the MPOs region contained in the SHSP.
State: None

Best Practices: None

4.31 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.

The RTP should identify the primary agencies responsible for preparing the necessary plans should a wide scale evacuation be necessary. The MPO/RTPA should consult the appropriate emergency plan for the region to determine what evacuation plans are in place. Examples of strategies that could be addressed in regional mass evacuation plans could include:

1. Signaling – Allows traffic signals to extend for up to four minutes in either red or green to allow large amounts of vehicles or pedestrians to proceed in one direction;
2. Traffic Control Guides – Deploy traffic control personnel to problem intersections to manually direct traffic;
3. Roadblocks and Barricades – Deploy various methods such as portable signs, cones or barrels;
4. Electronic Signage – Changeable message signs have been installed along a number of major routes that could be used to provide information to evacuees;
5. Lane Expansion – Involves the use of using road shoulders to increase vehicle capacity of evacuation routes;
6. Contra flow Lanes – Contra flow or lane reversal involves directing traffic to use lanes in both directions to move a large amount of vehicles in one direction;
7. Use of Mass Transit – Transit could be used to assist in the evacuation of the public should it become necessary; and,
8. Airport Use – Airports can be used as staging areas for medical and food supplies as well as evacuation.

Requirements (Shalls)
Federal: Title 23 CFR part 450.306(a)(3) states the planning process will address the security of the transportation system for the public.
State: None

Recommendations (Shoulds)
Federal: Title 23 CFR 450.322(h) states that RTPs should be consistent with emergency relief and disaster preparedness plans, strategies and policies that support homeland security and safeguard the personal security of all motorized and non-motorized users.
State: None

Best Practices: None

4.32 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 productivity. These shall include at a minimum traffic detection, traffic control, incident response and traveler information. Transportation demand strategies shall also be identified and can also include, but not be limited to, Pricing and Transportation Planning and Investment Strategies. The approach to TSM and operations shall be integrated into the Corridor System Management Plans (CSMPs). TSM and operations strategies shall be identified on non-urban freeway and rural corridors to the extent applicable.

Coordination of Programming Projects

Programming of projects shall be scheduled so that project sequencing in a corridor achieves the most effective mobility gains. In congested urban freeway corridors the CSMP shall identify the most effective project sequencing including for major local arterials.

Congestion Management Process in the RTP

The RTP shall identify urban freeway corridors with current and projected recurrent daily vehicle hours of delay that are a priority for preparing corridor system management plans (CSMPs). The RTP shall include by corridor all strategies, actions and improvements identified in the adopted CSMP that are needed to restore capacity and describe how the corridor will be managed across jurisdictions and modes to preserve corridor productivity based upon performance measurement. The RTP shall include a reasonable time-line for each urban freeway corridor to be restored to full capacity and identify actions to preserve capacity restoration. The financial element of the RTP shall identify funding by corridor to implement the CSMP.

The RTP shall describe roles and relationships among units of local government, modal agencies, the California Department of Transportation and related agencies for managing the corridor for highest mobility benefits and for measuring and evaluating performance.

23 CFR 450.320 applies only to the MPOs below and are federally designated Transportation Management Areas (TMAs). These TMAs shall develop a congestion management process that results in a multimodal system performance measures and strategies that can be reflected in the RTP. TMAs are defined as an urbanized area with a population over 200,000 as defined by the U.S. Census Bureau. As of 2007, there are a total of nine designed TMAs in California. These MPOs designated as TMAs are:

1. Southern California Association of Governments (SCAG);
2. Metropolitan Transportation Commission (MTC);
3. San Diego Association of Governments (SANDAG);

4. Sacramento Area Council of Governments (SACOG);
5. Council of Fresno County Governments (COFCG);
6. Kern Council of Governments (KCOG);
7. San Joaquin Council of Governments (SJCOG);
8. Stanislaus Council of Governments (StanCOG); and,
9. Santa Barbara County Association of Governments (SBCAG) – Does not meet the 200,000 population threshold however the MPO requested to be designated a TMA

Various methods are available to the regions for balancing their transportation needs against the objective to reduce GHG emissions. These include, but are not limited to Transportation Demand Management Strategies, such as: Transportation Planning and Investment Strategies, Pricing Strategies, and Land Use Strategies.

The SCS requirements for an RTP do not change the process used to establish transportation needs for a region. It is up to each region to decide how to balance transportation needs against the objective to reduce GHG emissions and other regional goals. The following strategies can be used as appropriate:

Pricing Strategies

Other Strategies include pricing and alternative mode programs, and can also be considered part of Smarth Growth/Land Use. These Strategies are suggested to encourage reduced driving to reduce GreenHouseGas (GHG) emissions, and include, but are not limited to:

1. Using alternative mode programs, congestion pricing, toll roads, and parking 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. A market-based approach to transit infrastructure and service planning is required to comply with AB 32's requirement of reducing GHG emissions, to achieve smart growth, and improve the region's economic competitiveness.

2. Provide funds and technical assistance to local agencies to develop and 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. 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.

5. In setting priorities, consider transportation projects that increase connectivity or provide other means to reduce VMT.

Requirements (Shalls)
Federal: Title 23 CFR part 450.320 (c) states the congestion management process shall be developed, established and implemented as part of the planning process.
State: None

Recommendations (Shoulds)
Federal: Title 23 CFR part 450.320(b) states the congestion management process should result in performance measures that can be reflected in the RTP.
State: None

Best Practices: None

~~3.30~~ ~~Transportation Modeling/Projecting Future Demand~~

~~Modeling is one method of forecasting future demands on the transportation system. It is an important source of information that supports the conclusions contained in the RTP. Typically the larger MPOs have the staff expertise and funding to conduct their own modeling. Smaller MPOs and RTPAs typically use subcontractors or rely on a review of existing documents. Current FHWA and FTA planning regulations require only that the MPO have an analytical process in place for evaluating projects~~

~~Travel demand models are statistical and algorithmic attempts to model human travel behavior. They endeavor to forecast potential outcomes of various transportation scenarios. The models provide essential information about the regions transportation system operations, conditions and performance and they are used to predict future transportation needs. Typical factors that are~~

~~included in the models are a region's demographic profile, general plan designations, distribution of trips and existing travel patterns including morning and evening peak hour travel demand, trip generation, and modal split among automobile, transit, carpool, bicycle, and pedestrian trips.~~

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

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

~~Assumptions play a key role in the assessment of all statistical modeling efforts. Three key assumptions are typical of transportation demand models: (1) Key characteristics of the system can be described in terms of quantifiable variables (e.g., number of automobiles per household, household size, etc.); (2) A relationship between the variables described and behavior exists (e.g., the more automobiles per household, the greater the number of automobile trips per household); and, (3) this relationship can be expressed in mathematical terms. This relationship is the same for all individuals and is constant over time. Challenges to the validity of transportation models often focus on one of these three assumptions.~~

~~Model results are only as good as the data that go into the model. MPOs must use the most current household travel survey, demographics, socio-economic and census data available, especially if the region is growing rapidly. The most current household travel survey will provide key inputs on travel behavior such as the trip characteristics and trip rates to the four-step model. MPOs should make every effort to explain the information and assumptions that went into creating the model in plain, understandable terms.~~

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

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

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

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

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

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

~~**Requirements (Shalls)**~~
~~**Federal:** Title 23 CFR 450.322(f)(1) requires the RTP to contain "the projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan."~~
~~**State:** None~~

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

~~**Best Practices:**~~

~~http://calblueprint.dot.ca.gov~~

~~http://www.sjvalleyblueprint.com~~

RTP ENVIRONMENTAL CONSIDERATIONS

4.33 Introduction

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

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

California Environmental Quality Act (CEQA) in 1970, which was designed to ensure that public agencies consider the environmental impacts of their decisions.

In California, the Environmental review associated with the RTP and the subsequent project delivery process is two-fold. MPOs and RTPAs are responsible for the planning contained in the RTP that precedes project delivery. Typically, either 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 NEPA applies to the individual projects that implement the RTP during the project delivery process.

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

4.34 Environmental Documentation

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

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

Program EIR

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

Changes to the RTP/FTIP

When the MPO/RTPA modifies its RTP/FTIP, it must determine whether the proposed changes have the potential to impact the environment and trigger CEQA compliance. Often changes to the RTP do not require the detailed analysis of an EIR. An abbreviated or focused type of CEQA

document will usually suffice. The most common alternatives to an EIR, MND or ND are an Addendum, a Supplement, or a Subsequent environmental document.

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

Supplement
A Supplement to the previous environmental document contains only the information necessary to make the previous EIR, MND or ND adequate in addressing minor additions or changes that result in a significant environmental impact. The supplement only needs to meet the circulation and public review requirements of a *draft* EIR.

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

NEPAs applicability to the RTP
NEPA does not apply to the RTP. In the *Atlanta Coalition on the Transportation Crisis, Inc. v. Atlanta Regional Commission*, 559 F.2d 1333 (5th Cir. 1979) court case, federal judges found that "Congress did not intend NEPA to apply to State, local or private actions…". The courts recognized the development of the RTP and TIP as a matter of State and local sovereignty.

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

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

Recommendations(Should)
Federal: None
State: None

Best Practices: None

4.35 SAFETEA-LU Environmental Requirements

There are two new SAFETEA-LU requirements in section 6001, Metropolitan Transportation Planning, that are intended to enhance the consideration of environmental issues in the transportation planning process. Pursuant to Title 23 CFR 450.322, the RTP must now 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, SAFETEA-LU contains a planning process mandate that requires the MPO to compare the RTP with available State conservation plans or maps and inventories of natural or historic resources. This comparison is facilitated by the requirement to "consult as appropriate with State and local agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation".

Requirements (Shall)
Federal: SAFETEA-LU section 450.322(f)(7) now requires the RTP to contain a discussion of potential environmental mitigation areas and mitigation activities. Sections 450.322(g)(1) and (2) require a comparison of the RTP with other environmental planning documents.
State: None

Recommendations(Should)
Federal: None
State: None

Best Practices: None

4.36 SAFETEA-LU Environmental Recommendations

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

Requirements (Shalls)
Federal: None
State: None

Recommendations (Shoulds)
Federal: Title 23 CFR 450.300 Appendix A to Part 450 "Linking Planning and NEPA" describes the steps for streamlining the project delivery process by providing environmental information in the RTP.
State: None

Best Practices: Implementation of the strategies contained in Appendix A is considered to be a state of the art best practice.

4.37 Key Environmental Considerations for Best Practices

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

www.dot.ca.gov/SER.

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

Wetlands

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

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

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

Parks, Refuges, Historic Sites

Section 4(f) of the Department of Transportation Act (49 U.S.C. 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.

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) (16 USC 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.

Cumulative Impacts

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

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

Growth-Related Indirect Impacts

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

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

Requirements (Shalls)

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

State: None

Recommendations (Shoulds)
Federal: Title 23 CFR 450.300 Appendix A to Part 450 "Linking Planning and NEPA" describes the steps for streamlining the project delivery process by providing environmental information in the RTP.
State: None

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

4.38 Project Intent Statements/Plan Level Purpose and Need Statements

The 2003 RTP Guidelines Supplement referred to "**Project Intent Statements**" which were defined as **Plan Level Statements of Purpose and Need**. A Plan level Statement of Purpose and Need is a short Statement, which serves as a justification for a project or a group of projects. These brief plan level justifications would be contained in the RTP. An example of a Plan Level Statement of Purpose and Need would be the problem of reducing congestion on a specific route. The Plan Level Statements of Purpose and Need briefly identify the transportation needs or problems and describe the intended outcome of the project(s) that would meet these needs or solve the identified problems.

A more detailed, project specific **Project level Purpose and Need Statement** is written during the project delivery process and is contained in the project initiation document (Project Study Report) and the subsequent environmental document.

MPOs/RTPAs may wish to prepare Plan Level Statements of Purpose and Need during the development of the RTP for the following reasons:

1. To provide justification for the lead agency's projects in the RTIP
2. To justify expenditure of transportation funds to the public and the CTC
3. During project selection, to provide the rationale for selecting specific projects over other projects
4. To provide the foundation for Project Level Purpose and Need information in the environmental documents.
5. To provide consistent project justification from planning through project Implementation.

Requirements (Shalls)
Federal: None
State: None

Recommendations (Shoulds)
Federal: None
State: The 2003 RTP Guidelines Supplement states that the RTP should include a project justification that identifies the specific need for the project and describes how these needs or problems will be addressed.

Best Practices

http://www.stancog.org/rtp.htm

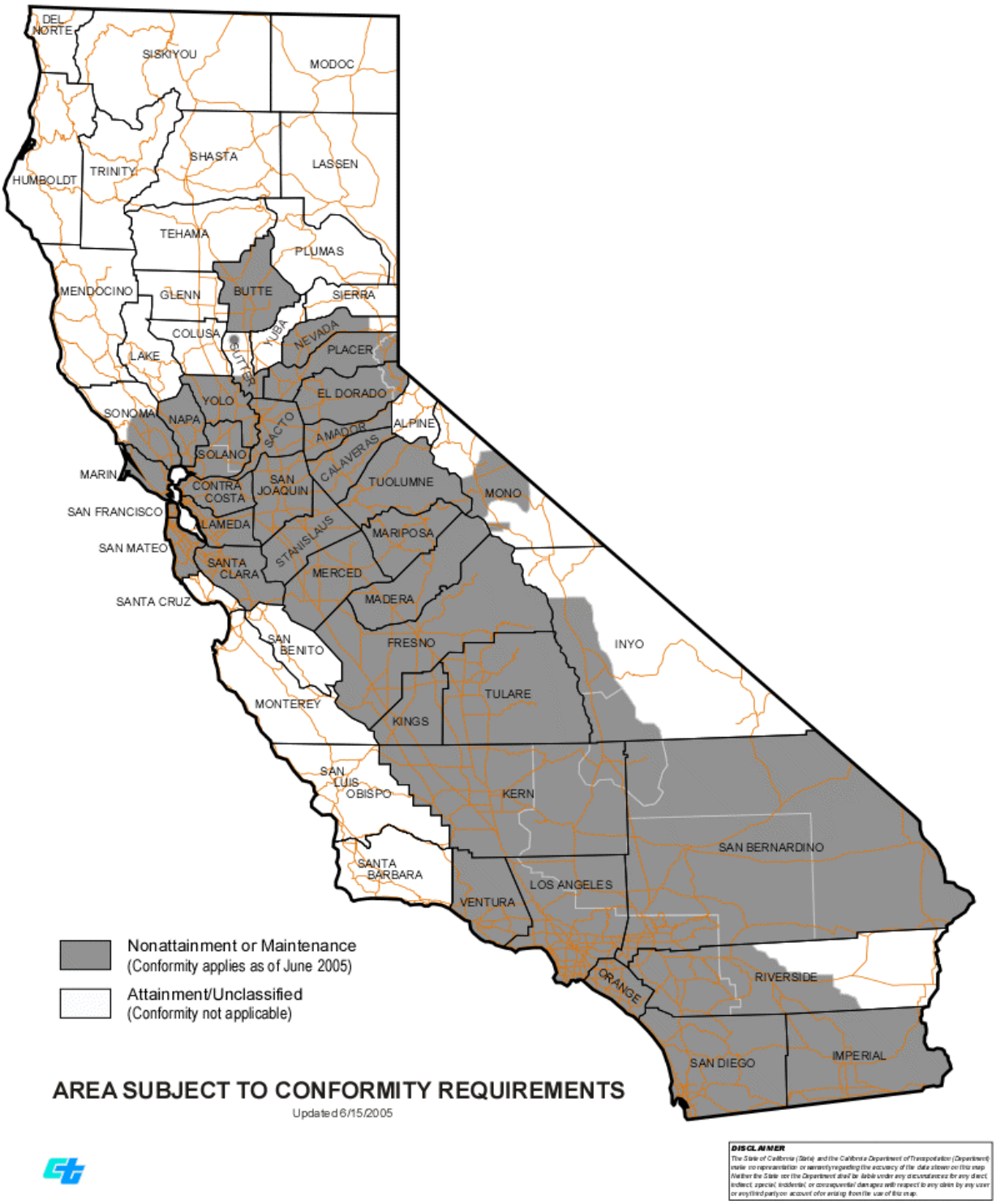
4.39 Air Quality and Transportation Conformity

Federal and State Clean Air Act

The Clean Air Act as amended in 1990 is the federal law that governs air quality. This law sets the standards for the quantity of pollutants that can be in the air. These standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2). The State Implementation Plan (SIP) is the statewide plan for achieving the goals of the Clean Air Act and describes how the NAAQS will be met. The SIP has both statewide and regional components (i.e. nonattainment and attainment-maintenance areas). The California Air Resources Board is responsible for submitting the SIP to the U.S. Environmental Protection Agency (EPA).

Under California's Clean Air Act, the state's 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 processes found in the Federal program.

Air pollution control and air quality management districts (APCD or AQMD) perform regional air quality planning in coordination with the MPO/RTPA, including the development of mobile source emission budgets that are part of the SIP. APCDs and AQMDs are the main implementation agencies for stationary source emission control programs. The shaded areas on the map located on the next page illustrates the areas of the State that have not attained the National Ambient Air Quality Attainment Standards.


DEL NORTE
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
COLUSA
SUTTER
YUBA
NEVADA
PLACER
LAKE
YOLO
EL DORADO
SONOMA
NAPA
SACTO
AMADOR
ALPINE
SOLANO
CALAVERAS
MARIN
CONTRA COSTA
SAN JOAQUIN
TUOLUMNE
MONO
SAN FRANCISCO
ALAMEDA
MARIPOSA
SAN MATEO
STANISLAUS
SANTA CLARA
MERCED
SANTA CRUZ
MADERA
SAN BENITO
FRESNO
INYO
TULARE
MONTEREY
KINGS
SAN LUIS OBISPO
KERN
SAN BERNARDINO
SANTA BARBARA
LOS ANGELES
VENTURA
ORANGE
RIVERSIDE
SAN DIEGO
IMPERIAL
Nonattainment or Maintenance
(Conformity applies as of June 2005)
Attainment/Unclassified
(Conformity not applicable)
AREA SUBJECT TO CONFORMITY REQUIREMENTS
Updated 6/15/2005
DISCLAIMER
The State of California (State) and the California Department of Transportation (Department) make no representation or warranty regarding the accuracy of the data shown on this map. Neither the State nor the Department shall be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

SIP requirement

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 designates an area as "attainment" if the area is considered to have air quality that meets or exceeds 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 meets the NAAQs, the U.S. EPA changes or redesignates the area as a "maintenance" area. In nonattainment and maintenance areas, federal regulations require that RTPs, FTIPs and Federally funded or approved highway and transit projects demonstrate transportation conformity.

RTP transportation 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 generally support attainment of NAAQs. The MPO along with 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, a conformity determination must be made within one year of the effective date of the determination. RTP and FTIP amendments, Federal project approvals and Federal funding are all contingent upon the conformity determination that shows how the total emissions projected in the RTP and FTIP are within the emission limits or 'budgets' established in the SIP.

Requirements (Shalls)

No new transportation conformity requirements have been created under SAFETEA-LU. However, existing requirements have been modified to shorten or lengthen the time period for conformity determinations and re-determinations, to add or substitute transportation control measures (TCM) in an approved SIP and to adjust the frequency of conformity determinations. The Clean Air Act section 176(c) (42 USC 7506(c))has been amended as noted below.

Federal: 40 CFR 93.104(b)(3) and (c)(3) changes the required frequency of transportation conformity determinations for RTPs and FTIPs from three years to four years; 176(c)(2)(E) and 40 CFR 93.104(e) provide two years to determine conformity after new SIP motor vehicle emissions budgets are either found adequate, approved or promulgated; 176(c)(9) adds a one-year grace period before the consequences of a conformity lapse apply; 176(c)(4)(e) and 40CFR 93.105 provides streamlining requirements for conformity SIPs; and, 176(c)(8) and 40CFR 93.101 identifies procedures for areas to use in substituting or adding transportation control measures (TCMs) to approved SIPs.

State: None

Although there is no conformity requirement related to State air quality standards, air quality is normally covered under CEQAs environmental documentation for the RTP.

Recommendations (Shoulds)

Federal: 176(c)(7)(A) and 40CFR 93.106 Provides an option for reducing the time period addressed by conformity determinations.

State: None

Best Practices – Transportation Control Measures

The RTP should discuss ways in which activities in the plan will conform to the SIP, including TCM implementation. To achieve consistency between the RTP and the SIP, all TCMs identified in the SIP should be identified in the RTPs.

The conformity analysis document prepared for the RTP should describe both completed TCMs and TCMs that are underway. TCMs that are included in the SIP should be implemented in a timely fashion. Implementation of the TCMs should be coordinated with the SIP implementation schedule. When there is a delay in TCM implementation, the conformity analysis document should describe the measure and the steps that the MPO/RTPA is taking to address the delay. The conformity analysis should be prominently referenced in the RTP document. For more detailed information about transportation conformity please see the following websites:

http://www.dot.ca.gov/hq/env/air/index.htm

http://www.fhwa.dot.gov/environment/aqupdate/index.htm

http://www.epa.gov/otaq/stateresources/transconf/index.htm

Greenhouse Gas Emissions Requirements and Considerations in the RTP

4.40 Greenhouse Gas Emissions and Targets

Currently, the federal government has several domestic and international voluntary programs designed to reduce greenhouse gas emissions. The United States Environmental Protection Agency has draft language to include greenhouse gasses in the environmental protection act.

The political leadership in California has been quite active in addressing climate change issues Greenhouse gases (GHG) have been identified as specific air pollutants that are responsible for global warming and climate change. California has focused on six GHGs (Carbon Dioxide, Methane, Nitrous Oxide, Hydro fluorocarbons, perflurorocarbons, and Sulfur Hexafluoride). Carbon Dioxide (CO2) is the most prevalent GHG. All other GHGs are referenced in terms of a CO2 equivalent. The California Environmental Protection Agency (CalEPA) prepared a briefing package for Assembly Bill (AB) 1493 entitled "Global Warming and Greenhouse Emissions from Motor Vehicles"; page 14 of this document stated that, "Transportation is California's largest source of Carbon Dioxide."

Governor Schwarzenegger has issued two Executive Orders regarding this issue: S-3-05 (June 1, 2005) that calls for a coordinated approach to address the detrimental air quality effects of GHGs and S-20-06 (October 18, 2006) that requires State agencies to continue their cooperation to reduce GHG and to have the Climate Action Team develop a plan by June 1, 2008, to outline a number of actions to reduce GHG. Information on California climate change activities can be found at: http://www.climatechange.ca.gov/index.html
Schwarzenegger also signed into law AB-32, the global warming solutions act of 2006 which sets greenhouse gas limits at 1990 levels by 2020.

Recent legislation through Senate Bill (SB) 375 requires that no later than September 30, 2010, the State Air Resources Board (ARB) shall provide each MPO with the region's greenhouse gas emission (GHG) targets for automobile and light trucks for 2020 and 2035. These targets are based on recommendations from an appointed Regional Targets Advisory Committee (RTAC).

The RTAC released their Recommendation Report entitled: *Recommendations of the Regional Targets Advisory Committee (RTAC) Pursuant to SB 375* on September 30, 2009.

Caltrans and CTC staff members have convened a RTAC Coordination Workgroup to evaluate the Recommendation Report and to incorporate RTAC recommendations as appropriate into the RTP Guidelines.

4.41 Contents of the Sustainable Communities Strategy (SCS):

SCS Overview/Background

Integrating transportation and land use planning is vital to reducing greenhouse gas emissions (GHG) and integral to creating sustainable, liveable communities. Modifying future land use practices so as to reduce the growth in vehicular travel is a key element in California's strategy to reduce its greenhouse gas emissions. The Sustainable Communities Strategy (SCS) required to be incorporated into Regional Transportation Plans pursuant to SB 375 and Government Code 65080 provides impetus and direction for the integration of land use and transportation planning. The SCS or Alternative Planning Strategy (APS) is the key long-range planning tool to be used by the MPOs and local government to help provide an outline of how and where future development should occur in the region.

The sustainable communities strategy or SCS, was added as a new component of the RTP following the passage of SB 375 in September 2008. In California statute, this requirement for MPOs was added to Government Code section 65080 (et al). State statute requires the SCS to be part of the RTP and policies within the SCS shall be consistent with the policies within the RTP. Following a successful blueprint effort started by the Sacramento Area Council of Governments and the San Diego Association of Governments, Caltrans along with the Governors Office of Planning and Research and the Department of Housing and Community Development made grants available to MPOs statewide to develop their own regional blueprints. The SCS is a continuation of this regional blueprint process which started in 2003. By fiscal year 2008/09, a total seventeen of the eighteen MPOs, and eight rural transportation agencies were conducting regional blueprint plans. The intent of the regional blueprint program is to identify land use, transportation and environmental connections. The MPOs conducting these regional blueprint efforts have a significant lead in addressed the new planning requirements contained in SB 375.

For over 30 years, the primary purpose of the RTP has been to identify the transportation projects, programs and services needed to address both current and future regional population demand and to specify the major transportation projects to be programmed given the financial resources available. The SCS or APS will require MPOs to work with local land use authorities to develop reasonable land use assumptions, along with the type of transportation facilities that should be constructed, given financial constraints, to achieve the regional GHG reduction target to be specified by the California Air Resources Board. There is great variation among the 18 MPOs in the state and flexibility is an important component in preparing the SCS or APS. Region-specific characteristics should be taken into consideration and a one-size fits all

approach is not recommended. Statutory requirements for an Alternative Planning Strategy are available in Appendix H.

The information in this section below is intended to identify the specific requirements of what constitutes an SCS and also what items would be beneficial to be included in an SCS.

SCS Contents

California Government Code Section 65080 requires that all MPOs prepare an SCS as part of their RTP. Statute further outlines the SCS shall identify the following:

1. Regional land uses: Identification of existing and future land uses within the MPO boundary – this includes residential, commercial, farmland, resources areas and open space. Density and intensity of both residential and commercial development shall be specified. Based upon reasonable land use assumptions, the SCS shall set forth the forecasted development pattern within the region.

2. Regional housing needs: The SCS shall identify areas within the region sufficient to house all the population of the region, including all economic segments, over the course of the planning period of the Regional Transportation Plan. The SCS shall take into account net migration into the region, population growth, household formation, and employment growth. Pursuant to Government Code section 65584, the SCS will also identify areas within the MPO boundary sufficient to house an eight-year projection of the regional housing needs assessment (RHNA) as identified by the California Department of Housing and Community Development (HCD). State housing goals as specified in Government Code sections 65580 and 65581 will have to be considered in the SCS.

3. Regional transportation system: Although a current component of the RTP process prior to SB 375, the SCS shall identify the multi-modal transportation needs over the 20 plus years of the RTP to meet the future growth forecast. The system should also meet regional and statewide mobility standards, address multi-modal regional blueprint performance measures as well as meet regional air quality conformity and regional GHG emissions targets.

The SCS must be "internally consistent" with the other sections of the RTP. This means that the contents of the Policy, Action and Financial elements must be consistent with Sustainable Communities Strategy. Regional transportation investments must be consistent with the estimated funding available or policy decisions identified elsewhere in the RTP.

MPOs in Multi-County Regions

San Francisco Bay Area - Within the nine county San Francisco Bay Area region, the Association of Bay Area Governments (ABAG) is responsible for the land use and housing related issues in the SCS. The Metropolitan Transportation Commission is responsible for identifying the regional transportation needs. ABAG and MTC are jointly responsible for setting forth a forecasted development pattern for the region that, when integrated with the transportation network, measures and policies, will reduce GHG emissions from passenger vehicles and if, feasible, achieve GHG reduction targets set by the ARB. Agency specific requirements are further identified in Government Code 65080(b)(2)(B).

Southern California Association of Governments (SCAG) – Within the six county SCAG region, there are six county level councils of governments (COGs) and fourteen sub-regional COGs. Government Code section 65080 (C) allows each of these COGs to prepare the SCS and APS (if needed). SCAG has developed a document titled: "*Framework and Guidelines by the Southern California Association of Governments for the Development Sub-Regional SCS/APS*". This document is intended to provide guidance for each of the fourteen SCAG sub-regions and should be consulted prior to and SCS/APS related work. SCAG shall include this sub-regional work within their overall SCS contained in SCAG's RTP.

San Joaquin Valley - The following eight counties constitute the MPOs located in the San Joaquin Valley: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare. These eight counties are located in one air quality basin and the MPOs have a long history of collaborating on the preparation of their respective RTPs particularly as it relates to the federal air quality conformity determination. Government Code section 65080 (M) stipulates that two or more of these MPOs may work together on the development of a joint SCS or APS.

Role of Cities and Counties in the Development of the SCS

Changing how regions grow in the future is a fundamental strategy of reducing regional GHG emissions. Over time, cities and counties will need to address land use and transportation policies as well as regional transportation system decisions that will reduce both the number and length of vehicle trips. Government Code section 65080 (J) of SB 375 is very specific regarding land use – land use authority rests with each of the appropriate cities and counties. MPOs do not have the legal ability to stipulate where development should, or should not occur. However, during the development of the RTP and the SCS, MPOs will need to initiate a significant amount of outreach to the cities and counties within their respective jurisdictions. The SCS will need to reflect reasonably projected land uses. While local land use authority is exclusively retained by cities and counties, MPOs have the ability to influence land use through funding of the regional transportation system. The SCS should reflect collaboration between local jurisdictions and the MPO and should identify existing land use plans and future strategies necessary to reach GHG targets. The MPO shall prepare a SCS considering spheres of influence already adopted by the Local Agency Formation Commissions (LAFCos). Spheres of influence are the planning boundaries outside of an agency's legal boundary (the city limit line) defining the agency's potential future boundary and service area. Current and future land use, current and future need, capacity for service, and any relevant communities of interest, are usually the factors considered in a sphere of influence review focus.

LAFCos determine spheres of influence for all local governmental agencies, and are responsible for coordinating logical and timely changes in local governmental boundaries. Special studies are conducted reviewing ways to reorganize, simplify and streamline governmental structure, and preparing a sphere of influence for cities and special districts. For cities and special districts, the spheres of influence are reviewed every five years.

Identifying Land Uses in the SCS

MPOs are challenged, through development of the SCS, to encourage local jurisdictions to balance housing, jobs, services, education and recreation. Residential densities and commercial building intensities should be sufficient to support future investment in transit and other modes of transportation. Government Code Section 65080 states the SCS shall include the various

land uses to cover a variety of areas from general location of uses to residential, building, housing, migration, population, employment, transportation, resource areas and farmlands. The identification of existing and future land uses for each of these areas assists in determining the region's development pattern for the region, and each region is challenged to balance the overall and specific land uses for the benefit of all residents with long term goals in mind, usually at least 20 years. With even more emphasis on planning at the regional level, it is important to continue to recognize the critical role of local governments' (cities, counties) land use authority, and how MPOs will continue to work with local governments when identifying and planning for the region's future land uses in the SCS, with an emphasis on balancing land uses for all residents within a region.

Each region continues to grow in its own unique way, but more and various transportation choices, and livable communities, can help reduce miles traveled in vehicles while working within the SCS provisions for a sustainable community or communities.

In addition, balancing a region's future land use development while preserving resource areas and/or farmland will be more challenging in some regions than others depending on what decisions are made for future development with existing resources available.

The SCS should contain a map or series of maps that will provide a visual reference of the various land uses within the region. Maps should show a balance between land use, housing and transportation. Maps may display types of land use, including vacant developable land, potential development densities, and location of transit facilities as well as amenities and safe access to the transportation network for pedestrians and bicyclists.

Regional GHG Reduction Targets

State statute requires the Air Resources Board's (ARB's) Regional Targets Advisory Committee (RTAC) to recommend factors to be considered and methodologies to be used for setting GHG emission reduction targets. State statute then requires the ARB to set regional GHG emission reduction targets for each MPO. Before setting the target for a region, ARB will exchange technical information with each MPO and the affected air quality management district. The MPO may recommend a target for their respective region during this process. Advanced and continuous communication and consultation between the ARB and each MPO is highly recommended.

Questions regarding these regional GHG emission reduction targets should be directed to ARB.

Housing Issues in the SCS

In addition to the earlier mentioned requirements for integration of land use and transportation planning through the development of an SCS that specifically must address housing within the region, Government Code Section 65080 (2) (B) also requires that the SCS utilize the most recent planning assumptions considering local general plans and other factors consistent with the requirements of Part 450 of Title 23 and Part 93 of Title 40 of the Code of Federal Regulations.

Government Code Section 65584.04 (i) (1) addresses consistency between housing allocation and regional transportation planning by stating that it is the intent of the legislature that housing planning be coordinated and integrated with the RTP. To achieve this goal requires the housing

allocation plan to allocate housing units within the region consistent with the development pattern included in the SCS.

HCD provides guidance on the Regional Housing Needs Assessment (RHNA) allocation process. Information is provided through the following link:

HCD RHNA link

MPO coordination with local jurisdictions and HCD is necessary to integrate the most recent planning assumptions and other factors such as sites requiring zoning changes to meet housing need into the SCS. Collaboration is integral to achieving the SCS requirements of identifying areas within the region to house all economic segments of the population as well as an eight-year projection of the regional housing need.

Required housing components of the SCS as identified in Government Code 65080 (2) (B) provide an opportunity for MPOs to collaborate with local jurisdictions to ensure the SCS addresses issues of affordability, supply, and location near job centers. The placement of future housing near transportation, services, and jobs is fundamental in meeting regional GHG emission reduction goals.

In February 2009, HCD released the following Housing Element policies and programs to address climate change:

www.hcd.ca.gov/hpd/HE_PoliciesProgramsAddressingClimateChange.pdf

Various strategies and methods to facilitate meeting housing needs can be used. These can include, but are not limited to, cities, counties and regional planning and zoning programs facilitating affordable housing, regional and local programs advocating infill developments, and redevelopment funds dedicated to affordable housing development.

The housing element shall identify adequate sites for housing, including rental housing, factory-built housing, mobile homes, and emergency shelters, and shall make adequate provision for the existing and projected needs of all economic segments of the community. (Government Code 65583)

Addressing Regional Transportation Needs in the SCS

The SCS requirements for an RTP do not change the process used to establish transportation needs for the region. Government Code Section 65080 (2) (B) (iv) states that an SCS identify a transportation system to service the transportation needs of the region. It is up to each region to decide how to balance transportation needs against the objective to reduce GHG emissions and other regional goals including but not limited to: accessibility, economic benefit, equity, environmental protection and air quality conformity. Decisions to expand or modify the transportation system should be made in recognition of the following relationships between land use and transportation:

- Expansion of the transportation system will influence the amount of future vehicle travel and the efficiency of vehicle traffic flow, both of which directly effect GHG emissions.
- Expansion of the transportation system influences land use accessibility, which will directly influence long-term land use development patterns.

- Transit investments need supporting levels of land use density and intensity plus traffic congestion that creates high demand for reliable travel times.
- The speed of the network and the cost of travel will directly influence the distance between land uses.
- Placing land uses closer together increases travel choices such that transit, walking, and bicycling become viable while also reducing transportation sector energy use and GHG emissions.

Additional methods are available to the regions on balancing their transportation needs against the objective to reduce GHG emissions. These include Transportation Demand Management methods, such as, but not limited to, Transportation Planning and Investment Strategies, Pricing Strategies, and Land Use Strategies.

Social Equity/Environmental Justice Issues

The inclusion of the entire community in the development of the SCS or APS, and in achieving the GHG reduction goals is important. More transportation and mobility choices such as increased transit, bicycle and pedestrian facilities increase opportunities for all of the population within the region (regardless of income). Each region is encouraged and challenged to plan for and implement transportation system improvements that will benefit all residents. Each MPO should be sensitive to how all residents may be impacted by possible transportation and land use changes identified in the SCS. Existing federal regulations require MPOs to ensure that any planned regional transportation improvements do not adversely impact low income or other under represented groups. As part of the SCS, Government Code section 65080 (b)(2)(B)(ii) specifies that MPOs "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."

SCS Public Participation and Input/Consultation with Local Elected Officials

SB 375 increased the expected level of public participation process in the regional transportation planning process. MPO's currently have a public participation plan in place per federal requirements. The public participation requirements for the development of the SCS can be incorporated into the existing Public Participation Plan. For more detailed information regarding the public participation plan requirements for the development of an SCS (or an APS) please refer to Section 4.11 of the RTP Guidelines.

SB 375 also increased the consultation required with local elected officials during the development of a SCS or APS. Metropolitan Planning Organizations are required to conduct at least two informational meetings in each county within the region for members of the Board of Supervisors and City Councils on the SCS and APS. MPO's may conduct only one informational meeting if it is attended by representatives of the County Board of Supervisors and City Council members representing a majority of the cities (representing the majority of the population in the incorporated areas of that county). There are specific meeting noticing requirements. For more detailed information regarding input and consultation with local elected officials during development of the SCS please refer to Section 4.15 of the RTP Guidelines.

California Air Resources Board Review of the SCS

ARB will work with each MPO to review its SCS (and APS, if applicable). As the ARB reviews the documentation submitted by the MPO, an on-going exchange of information occurs between the MPO and the ARB regarding the assumptions and methodology used to demonstrate that the GHG target levels are being met. After adoption of an SCS or APS, the MPO provides ARB with the SCS, the APS (if applicable), documentation of the analysis of the greenhouse gas emission reductions to be achieved, and the technical methodology description. The ARB limits its review to accepting or rejecting the MPO's determination that the strategy would achieve the greenhouse gas emission reduction targets established. The ARB completes its review within 60 days. The ARB will provide their response to the MPO in writing regarding their conclusions. It is the intent of SB 375 to provide an information exchange so the formal response from the ARB is consistent with the information previously exchanged with the MPO. If ARB does not agree with the MPO's determination that the SCS or APS will achieve the GHG reduction target established, the MPO may revise its initial SCS or APS to meet the target levels, or develop an Alternative Planning Strategy (APS) (if it has not done so already) as presented in Appendix H.

When reviewing the SCS, FHWA will consider only those projects that are incorporated within an SCS that is financially constrained and eligible to be federally funded. Projects within an APS are not considered financially constrained, and FHWA will not fund projects within an APS document.

MPOs Technical Methodology for Estimating the Regional GHG Emissions

Prior to starting the public participation process, the MPO provides ARB with the technical methodology description estimating the greenhouse gas emissions from its SCS, and if appropriate, its' APS. The ARB and the MPO work together until ARB concludes the technical methodology operates accurately.

Requirements (Shall)
Federal: None
State: Government Code 65080

Recommendations (Should)
Federal: None
State: None

4.42 Non-MPO Rural RTPA Addressing Greenhouse Gas Emissions:

Insert non-MPO Rural RTPA GHG best practices and information.

4.43 Addressing Climate Change Adaptation to the Regional Transportation System in the RTP

Recognition that climate change is underway across the globe is growing among scientists and the public alike. The impacts of climate change are being felt in California and across the nation. Recent science suggests that further impacts are inevitable despite planned and

implemented mitigation efforts. A new focus on adaptation planning is rapidly becoming the primary goal for cities and counties across the California.

California is one of the most diverse regions of the world ecologically, geographically, and culturally. Because of this diversity, California is extremely susceptible to a wide range of climate change effects – many of which we have already begun experiencing. Examples include; increase in temperatures, earlier melting of snowpack, changing precipitation patterns, increased severity of wildfires, sea level rise, extreme weather events, and numerous changes and effects on biodiversity and habitats.

The impacts listed above have had negative impacts on the transportation system specifically including flooded airports, interstate highways and roads, landslides resulting in disrupted rail lines, heat waves causing roadways to buckle, and fire damaged watersheds that have resulted in mudslides. The degree of risk for the State's transportation infrastructure depends on regional and local characteristics including the natural and human built environment, as well as the location, types and functions of transportation facilities and assets. In an effort to prepare for continued changes due to climate change, and to protect the State's infrastructure and vibrant economy, Governor Schwarzenegger has taken a lead role in climate change regulation.

California has long been a leader in the fight on climate change, and those efforts continue today. In 2006, Governor Arnold Schwarzenegger signed into law Assembly Bill 32 (AB-32). This was a first in the world program of market and regulatory mechanisms to achieve greenhouse gas emissions reductions. The law requires a reduction of greenhouse gas emissions to 1990 levels by 2020, and an emissions reduction of 80% below 1990 levels by 2050. In order to help meet the goals established in AB 32, Senate Bill 375 (SB 375) was signed on September 20, 2008. SB 375 connects land use and AB 32 goals by reducing sprawl by designing better communities. The goal is that California residents will become less reliant on vehicle travel, and more dependent on alternative modes of transportation. SB 375 will hold cities and regions accountable for creating more sustainable, walkable communities with alternative transportation options. The law will also result in greenhouse gas emission reduction targets for regions of the state to work with California's 18 MPO's to align their housing, land use, and transportation plans with greenhouse gas reductions in mind.

As climate change impacts continue to worsen, adaptation planning efforts have become necessary to protect California's infrastructure and natural environment. In addition to AB 32 and SB 375, further regulation has been passed to ensure adaptation is taken into account for existing infrastructure, and planned projects. Billions of dollars are spent annually on building, maintaining and protecting infrastructure from wildfires, floods, sea level rise, and extreme weather events due to the changing climate. California is home to numerous sensitive habitats, and it is extremely important adaptation measures are identified to protect these areas. 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 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.

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 adaption 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. They address the need to protect California's thousands of miles of roads, highways, and railroads, miles of canals, hundreds of airports, thousands of bridges and sea ports that deal with multi-billions of dollars in trade annually. There are a number of studies (Pacific Institute[1], UC Merced and RAND Corporation[2], Next10 and U.C. Berkeley[3]) that estimate the high costs associated with rising sea levels, changing precipitation, and wildfire damage resulting from changes in the climate. 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, it is imperative that local planning agencies (MPO's, RTPA's) understand and begin preparing for the implementation of the transportation strategies in conjunction with Caltrans. The CAS guide can be found at the link below.

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

Additional information regarding sea level rise and other Climate Change issues can be found at the links below:

http://www.pacinst.org/reports/sea_level_rise/

http://www.energy.ca.gov/2009publications/CEC-500-2009-048/CEC-500-2009-048-D.PDF

http://www.energy.ca.gov/2009publications/CEC-500-2009-014/CEC-500-2009-014-D.PDF

Requirements (Shall)
Federal: None
State: None

Recommendations (Should)
Federal: None
State: None

Best Practices

Insert links here to Climate Change best practices.