

Memorandum

To: Chair and Commissioners

Date: December 24, 2007

From: JOHN F. BARNA, JR.
Executive Director

File: Book Item 4.4
Action

Ref.: PRESENTATION OF FINAL REGIONAL TRANSPORTATION PLANNING
GUIDELINES CLIMATE CHANGE RECOMMENDATIONS

RECOMMENDATION

Staff recommends that the California Transportation Commission (Commission) approve the attached letter, transmitting the Regional Transportation Plan (RTP) Guidelines Work Group recommendations, to Senate Pro Tempore Don Perata addressing his request that the Commission review its RTP guidelines to incorporate climate change emission reduction measures.

ISSUE

In January 2007, Senate Pro Tempore Don Perata forwarded a letter to the Commission requesting that the Commission use its current statutory authority to review its RTP Guidelines in order to incorporate climate change emission reduction measures. The letter also stated that the RTPs should utilize models that accurately measure the benefits of land use strategies aimed at reducing vehicles trips.

BACKGROUND

Commission staff established an RTP Guidelines Work Group to assist it in developing recommendations to the guidelines as requested by Senate Pro Tempore Perata. Commission staff invited representatives from the Assembly and Senate, Regional Transportation Planning Agencies, state and federal agencies/organizations, environmental interest groups, building and industry organizations, and county and city associations. From this larger work group, three sub-work groups were formed: Climate Change, Smart Growth/Land Use, and Transportation Modeling and Analysis.

The Transportation Modeling and Analysis and Smart Growth/Land Use sub-work groups' final recommendations were presented to the full work group at a meeting held on November 2, 2007. A few changes to the modeling recommendations were suggested and were incorporated at the meeting. After discussion of the smart growth/land use recommendations, and additional comments received following the meeting, it was decided that work group members be given a final opportunity to provide comment.

Attachment

DRAFT LETTER

*Response to President Pro Tempore Don Perata
Climate Change Emissions Reduction Measures in Regional Transportation Plan Guidelines*

The Honorable Don Perata
President Pro Tempore
California State Senate
State Capitol, Room 205
Sacramento, CA 95814

Dear President Pro Tempore Perata:

As requested in your letter of January 25, 2007, the California Transportation Commission (Commission) undertook a review of its Regional Transportation Planning (RTP) Guidelines in order to incorporate climate change emission reduction measures. Your letter also stated that the RTPs should utilize models that accurately measure the benefits of land use strategies aimed at reducing vehicle trips.

The RTP Guidelines are intended to provide direction to Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) in the development of RTPs consistent with federal and State transportation planning requirements. While the RTP Guidelines adopted by the Commission 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. The RTP Guidelines reflect both the mandates of state and federal statute and regulations, as well as the Commission’s expectations for the use of best practices. Where the RTP Guidelines reflect a State or Federal statutory or regulatory requirement, the word “Shall” is used with a statutory or regulatory citation. The word “Should” is used where the RTP Guidelines reflect a permissive or optional statutory reference, such as “may” or “should.”

To assist the Commission in developing revisions to the RTP Guidelines to address climate change, the Commission staff established an RTP Guidelines Work Group. Commission staff invited representatives from the Assembly and Senate, MPOs, RTPAs, state and federal agencies/organizations, environmental interest groups, building and industry organizations and county and city associations. Membership on the RTP Guidelines Work Group included more than 200 members. The Commission appreciates the involvement of all work group members who have contributed many hours and their expertise to this effort.

From this larger group, three sub-work groups were formed: Climate Change, Smart Growth/Land Use, and Transportation Modeling and Analysis. The sub-work groups were charged with developing revisions to the RTP Guidelines to address greenhouse emission reduction and to identify further statutory changes needed. Members of the sub-work groups represented the organizations from the larger RTP Guidelines Work Group.

Climate Action – This sub-work group will be utilized to assist the Air Resources Board (ARB) in the development of its AB 32 Scoping Plan for land use. The ARB is in the process of setting greenhouse gas emissions reduction targets for regions via the Scoping Plan. The Scoping Plan is due for ARB action in January 2009. Once ARB adopts these targets, additional revisions to the RTP Guidelines will be needed.

Smart Growth/Land Use - The revised RTP Guidelines section relating to smart growth/land use addresses transportation planning and investment strategies, pricing strategies, land use strategies, and performance measures, and can be found in Attachment A.

One dilemma that the sub-work group identified was that transportation system management and land use planning are disjointed and a disconnect exists between the timing and nature of these developments. While the State and MPOs have the responsibility for transportation planning, land use planning and zoning remain the prerogative of local governments. Land use and transportation planning agencies must build a stronger information and policy bridge. The sub-work group suggested that a more coherent and integrated land use-transportation approach is needed as well as a concerted effort among stakeholders to agree on regional growth scenarios that fully incorporate smart land use provisions and energy efficiency measures.

The sub-work group identified the following statutory recommendations for the Legislature to consider:

Statutory Requirement for Regional Transportation Plans to Address Greenhouse Gases – Regional transportation plans adopted after January 1, 2011 shall be required to include a greenhouse gas (GHG) reduction strategy. The GHG reduction strategy shall include appropriate measures to reduce vehicle miles traveled (VMT) per capita. Appropriate measures could include, but are not limited to, transportation investments, technology, pricing, and land use strategies that contribute to achieving climate action goals by using measurable performance objectives. All strategies should be developed considering their impact on the economy, environment, public health, and social equity within the region.

Greenhouse Gas Analysis – Each MPO or RTPA shall perform a GHG analysis as part of the regional transportation planning process for any plan adopted after January 1, 2011 based upon a trends or likely land use scenario that is consistent with Federal requirements and current or projected local general plans.

Additional Legislative Recommendation

- ♦ Provide funding for developing and updating regional blueprints and for local general plans.

Transportation Modeling and Analysis – This sub-work group identified revisions to the RTP Guidelines relative to GHG reductions, statutory recommendations for the Legislature’s consideration, and suggestions for on-going technical assistance to MPOs and RTPAs by the Commission and the California Department of Transportation (Caltrans).

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 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.

The RTP Guidelines revisions address modeling and analytical techniques to evaluate alternative planning scenarios; educate decision-makers and the public; provide basic modeling protocols; encourage peer review and modeling testing; and RTP analysis. The RTP Guidelines revisions can be found in Attachment B.

The sub-work group identified the following statutory recommendations for the Legislature to consider:

- ◆ The Legislature and Administration should provide on-going financial support for the enhancement of MPO, RTPA and congestion management agency (CMA) modeling and analytical practices in order to promote continued evolution and enhancement of them.
- ◆ The Legislature should require periodic peer review of transportation modeling and analytical practices to promote best practices and enhance the quality and veracity of information provided to educate decision-makers and the public regarding the implications of various policy choices.

The work group identified two additional statutory recommendations, outside of the RTP process, in regard to the State Transportation Improvement Program for consideration.

- ◆ When requesting interregional transportation improvement program or other state program funds where the projects are selected by the Commission and a regional blueprint exists, state transportation or other state infrastructure discretionary funding shall be allocated in a manner that provides incentives to cities and counties that support implementation of an adopted regional blueprint except where there is a finding by the state agency providing the funding that identifies an overriding state need that makes consistency with the blueprint infeasible.
- ◆ Where there is a regional blueprint, an RTPA or MPO may include a ranking of projects based upon regional transportation planning factors including the contribution they make to achieving blueprint goals in relationship to the cost of the project when requesting interregional transportation improvement program or other state program funds where the projects are selected by the Commission. Where such a ranking has been provided, the Commission shall not fund a lower priority project in that region unless the Commission makes a finding that an overriding state need exists that makes it infeasible to approve the higher ranked project.

The sub-work group identified on-going technical assistance, by the Commission and Caltrans, that should be provided to the MPOs and RTPAs to enhance modeling and analytical techniques, appropriately scaled for various applications, that promote the advancement of best practices. Attachment C outlines the on-going technical assistance that was identified.

During discussions with the full RTP Guidelines Work Group and sub-work groups, some climate change strategies outside of the this effort were presented by members/organizations. The Commission indicated that it would share these with you for consideration and are provided in Attachment D.

The next steps in the process of incorporating the RTP Guidelines Work Group's recommendations is for Caltrans to incorporate the work group recommendations into the currently approved RTP Guidelines, circulate the revision for comment, and return to the Commission for final approval.

The Commission will continue to review the RTP Guidelines as new statutory requirements are enacted and policies regarding climate change emission reductions are adopted. The Commission will draw upon the expertise of the RTP Guidelines Work Group to revise the guidelines as needed.

The Commission is committed to cooperating fully within its statutory ability to assist in reducing greenhouse gases and stands ready to assist the transportation community, the environmental community, the Legislature, and the Administration in developing strategies and approaches that achieve that objective.

Sincerely,

JOHN F. BARNA, JR.
Executive Director

Enclosures

c: Commissioners, California Transportation Commission
RTP Guidelines Work Group

Smart Growth/Land Use
Regional Transportation Plan Guidelines Amendments

As part of the development of Regional Transportation Plans (RTP), the Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (RTPA) should consider the following options when developing a greenhouse gas (GHG) reduction strategy:

Policy Element

1. Develop investments and programs that support local jurisdictions that make land use decisions that implement regional blueprints and other smart growth strategies, including rural sustainability strategies.
2. Emphasize transportation investments in areas where desired land uses as indicated in a city or county general plan may result in vehicle miles traveled (VMT) reduction or other lower impact use.

Transportation Planning and Investment Strategies

1. Consider shifting transportation investments towards improving and expanding urban and suburban core transit, programs for walk-ability, bicycling and other alternative modes, transit access, housing near transit, and local blueprint plans that coincide with the regional blueprint.
2. Provide funds and technical assistance to local agencies to develop and implement blueprint strategies.
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 the 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 agricultural 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.

Pricing Strategies

1. Consider the use of alternative mode programs, congestion pricing, toll roads, and parking strategies. Examples include, but are not limited to the following:
 - 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 Cashout Programs
 - v. Strategies to reduce the impacts of pricing strategies on low-income individuals.
2. Consider pricing signal implementation to improve transportation operations.
3. Consider utilizing revenues from these pricing strategies for projects, such as mass transit, that improve mobility without increasing VMT or GHG emissions.

Road pricing strategies examples 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/Final%20Report%20Volume%20III.pdf>

Land Use Strategies

Regional land use projections that underlie Regional Transportation Plans have typically assumed existing growth trends will continue into the future, based on general plans. Over the last five years several MPOs have undertaken regional visioning or “blueprint” processes to look at how regions can grow more efficiently and meet more environmental and social goals.

1. Encourage twenty-year or longer regional housing forecasts by region, consistent with the RTP; housing need allocations that are consistent with the blueprint, and general plans to project twenty years forward in conjunction with the blueprint.
2. Encourage that the county or city general plan considers the blueprint plan for the region and links the general plan to reflect the best-case scenario.
3. Encourage that there is a reasonable basis for the projected land uses included in the RTP.
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. Encourage that where there is a blueprint, the planned land use base for the regional transportation plan is consistent with that regional agency’s blueprint.
6. Encourage that the land use base for the blueprint is consistent with federal regulations and current or projected local general plans.
7. MPOs should perform land use sensitivity analyses to determine whether more compact and efficient growth patterns (than the base case) would further reduce VMT.

Performance Measures

1. Include a VMT measurement as part of the environmental reporting requirements, taking into account growth projections for the area.
2. Compare projected blueprint development to actual development in applicable locations and provide an explanation for variances as updated.
3. Report the progress relative to whether the project(s) identified in the local RTP are consistent with city and county general plans or the blueprint strategy for the region.

Transportation Modeling and Analysis
Regional Transportation Plan Guidelines Amendments

The goal of applying transportation models and analytical techniques as part of the Regional Transportation Plan (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.

RTP Guidelines Relative to Greenhouse Gas Emissions

1. For preparation of the RTP required under Sections 65080 et seq. of the Government Code, by July 1, 2008 each Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (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, to the extent that data and resources permit, 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, vehicle miles traveled, major land use development decisions, and quality of life issues.
3. Transport produces almost half of greenhouse gases (GHG) in California. To evaluate the effectiveness of policies to reduce GHG, the 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. Department of Transportation (Caltrans) districts should follow the same practices as used by the MPOs, RTPAs, Congestion Management Agencies (CMA) and Councils of Government (COG) in each district.

MPOs, RTPAs, CMAs, and COGs 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. 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%)

Features and data: These counties do not need to run a network travel model.

Possible applications of the model: No model.

Policy analysis capabilities: Road congestion is not increasing rapidly. Emission changes from higher-MPG vehicles can be factored or derived from the ARB inventory.

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

Features and data: These RTPAs and CMAs can run 3-step models, at least for the next few years. These models should be run to equilibrium. They should implement 4-Ds add-on models, to account for the effects of land use characteristics on travel, in the short term. See the recent DKS report to Caltrans, which can be found at

http://www.dot.ca.gov/hq/research/researchreports/reports/2007/local_models_tools.pdf

The travel model should be documented, including all statistical goodness-of-fit measures derived from submodel specification. The model should also be put through sensitivity tests and other validation tests, with these tests documented, and then formally peer-reviewed, also resulting in a written report. The models should address changes in regional demographic patterns. Geographic Information Systems (GIS) capabilities should be developed in these counties, leading to simple land use models in a few years. All natural resources data should be entered into the GIS. Parcel data should be developed within a few years and an existing land use data layer created.

Possible applications of the model: Agencies can define and evaluate Trend forecast, Combined General Plans, Preferred RTP, and Low-Vehicle Miles Traveled (VMT) scenarios. The Low-VMT scenario should achieve the regional VMT and GHG targets, if they are adopted by the ARB. Otherwise, the Low-VMT scenario can simply reduce VMT substantially and increasingly over time, compared to the Proposed RTP.

Policy analysis capabilities: These models can be used to evaluate increased density and mix, urban growth limits, and improved neighborhood walkability and bikeability. Performance measures can include on-road emissions of pollutants and GHG.

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

Features and data: These regions should develop 4-step travel models as soon as is possible. In the near-term, 4-Ds add-on models should be used. Simple land use models should be used, such as GIS rule-based ones, in the short term. Economic, market-based land use models should be developed within a few years. A simple freight model should be used. Several employment types should be used, along with several trip purposes. Time periods should include peak and off-peak. The travel model set should be run to full equilibration across all model steps. All road capacities and speeds should be validated with surveys. The urban development footprint in GIS should be used to calculate environmental impacts on terrestrial and aquatic ecosystems. The travel model and land use model should be documented and tested, as above. Parcel data and an existing urban layer should be developed as soon as is possible. A digital general plan layer also needs to be developed in the short-term.

Possible applications of the model: 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.

Policy analysis capabilities: 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 logsums 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 Government Code Section 65080.3 alternative.

D. Regions with serious or worse ozone or CO non-attainment.

Features and data: These agencies should achieve the requirements of the Federal AQ Conformity Rule, meaning 4-step models with full feedback across travel model steps and some sort of land use modeling. In addition to the Conformity requirements, they should also add an auto ownership step and make this step and the mode choice equations for walk and bike and the trip generation step sensitive to land use variables. Walk and bike modes should be explicitly represented. They should implement simple land use models for the next RTP and develop formal, economic land use models in the next few years. Freight models should be implemented in the short term and commodity flows models within a few years. Simple Environmental Justice analyses should be done using travel costs or mode choice logsums, as in C. Four or five time periods should be modeled. Agencies should develop and test joint mode-destination choice models. Small Traffic Analysis Zones (TAZ) should be used, to increase sensitivity to densification near to rail stations and in Bus Rapid Transit (BRT) corridors. These regions should monitor the large RTPAs and MPOs, in E. below, as they develop tour-based travel models and activity-based travel models. The next household travel survey should include activities and tours. Floorspace rent data should be collected. Parking quantity and cost should be represented in the travel model. The carpool mode should be included, along with access-to-transit submodes. Speed post-processing should be used and take into account the effects of corridor capacity continuity and bottlenecks on congested speeds and emissions.

Possible applications of the model: Five-step models permit the agencies to design and evaluate more land use policies, such as in D., plus complex combinations of transit, land use, and pricing policies.

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

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

Features and data: These regions should develop tour-based travel models in the short term and activity-based travel models within a few years. 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). Commodity flows models should be developed, with truck and van tours, in a few years. The next household travel survey should include activities and tours. Geocoded employment data with occupational code should be purchased for two or more past years. Floorspace quantity and rent data should be gathered. Freight data also should be collected. Full sample enumeration of households in the travel model and land use model should be studied and implemented in a few years, if feasible. Households should be geocoded to location. Stated preference surveys of households and firms should be performed, as necessary, for use in location choice models. Microsimulation of households and firms should be investigated and developed, if feasible.

Possible applications of the model: The effects of transportation policies and land use policies interact with feedbacks in an integrated model set and so projections will be more accurate. With a market-based land use model, the agency can evaluate land pricing policies, such as infill subsidies.

Policy analysis capabilities: 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.

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

Consistency of RTP Modeling

For modeling groups *C*, *D*, and *E*, the No Action alternative and the Proposed Plan alternative in an RTP should be modeled consistently. 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. This practice also should apply to Environmental Impact Reports (EIR)/Environmental Impact Statements (EIS) studies. 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. County and corridor studies performed by Caltrans districts and by county agencies may use more-detailed networks and zones than the MPO uses, but the models should be otherwise consistent, structurally and in operation, with the MPO model.

Peer Review and Model Testing

All travel and land use models should be fully documented, with the documents on the web. They should also be validated and tested for sensitivity to changes in inputs, parameter values, and policies. Agencies should have an on-going model improvement program to increase model accuracy and policy sensitivity. All substantial model changes should be subjected to peer review and written up. The four largest MPOs should use the Travel Model Improvement Program (TMIP) national peer review process, but include two California modelers, for their understanding of California laws. Other agencies should set up reviews using California modelers. Validation guidelines may be developed by the Community Impact Assessment (CIA) Forum or other body of California modelers. Also, these bodies could develop guidelines for which types of VMT should be reduced in GHG-reduction scenarios and alternatives.

4. The RTP analyses should provide to decision-makers and the public:
 - a. 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;
 - b. Reasonable transparency to that modeling and analytical process;
 - c. 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;
 - d. The degree to which analytical results can be expected to:
 - i. Be more indicative of a general expected trend or order of magnitude change rather than a quantifiably valid forecast;
 - ii. Provide the degree of certainty needed for the quantifiable forecasts; and
 - e. 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.

The following are recommended as suggested references:

“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/newtech/researchreports/reports/2007/local_models_tools.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.

Transportation Modeling and Analysis
Technical Assistance

The California Transportation Commission (Commission) and the Department of Transportation (Caltrans) should provide technical assistance to Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to enhance modeling and analytical techniques, appropriately scaled for various applications that promote the advancement of best practices and evolution of them.

1. Statewide panel discussions on modeling practices, including staff from the MPOs, RTPAs, county transportation commissions, congestion management agencies and other parties as appropriate. The panel should convene no less than once per year, and more frequently as deemed necessary. The panel should consider how agencies at various levels – large urban areas, smaller urbanized counties, and rural counties – can build on “best practices” of other agencies and cost-effectively address assessment of alternative planning scenarios, for example through:
 - A. Cooperation with county transportation and city and county agencies, to account for likely and alternative development prospects at a parcel level (potentially focused on specific Traffic Analysis Zones (TAZs) deemed most suitable for transit-oriented and/or mixed use development), and related assumptions about non-motorized trips including access times to transit;
 - B. Mechanisms for improving collaboration, sharing of information and cross-fertilization regarding the application of modeling and analysis to promote on-going improvements at all levels;
 - C. Desirable performance standards for evaluating output, and useful approaches to enhance travel model sensitivities to factors commonly associated with reductions in VMT and greenhouse gas emissions, including the locations of prospective new developments, and to the factors of development diversity (mixed-uses), density and design.
 - D. Standardization of core survey questions that would be used in all regional travel surveys done in California, in order to better understand the similarities and the differences in each region in consumer preferences;
 - E. Application of market-based survey approaches that could provide more insight into questions regarding choice of modes, consumer preferences for developments of various types including for projects with greater densities for housing and mixed use developments, market segmentation, and other attributes;
 - F. Application of market-based survey approaches that could provide greater insight into questions regarding traveler responses to congestion;
 - G. Techniques for presenting the assumptions, sensitivities, and results of modeling and analysis to the public in an effective way.

2. Provision of data on existing and historic traffic conditions and land use. Caltrans should continue to offer data obtained through routine data collection processes, such as traffic counts and congestion measures. In addition, Caltrans should establish new programs that sustain what are presently special-purpose efforts, such as statewide land-use data gathered for the California Production Exchange Consumption Allocation System (PECAS) model. To facilitate data sharing, Caltrans should also create a Geographic Information Systems (GIS) data collaborative to make parcel land use data available to smaller MPO's and rural planning agencies as needed.

**Statutory Recommendations by
Individual Members/Organizations**

- Adopt a policy declaration that, to reach the Governor's greenhouse gas (GHG) emissions reduction targets, the State's transportation agencies (Department of Transportation (Caltrans), Metropolitan Planning Organizations (MPO), Regional Transportation Planning Agencies (RTPA), Congestion Management Agencies (CMA) and Counties) need to reverse the growth trend in per capita vehicle miles traveled (VMT).
- Adopt an official support position for High Speed Rail that acknowledges the need to shift future long-distance travel away from highway and short-hop airline modes, due to climate change considerations and the higher cost of expanding highways and runways.
- Adopt a policy that urges the Legislature to make substantially more transit operations funding available, in the recognition that the future transportation network for urbanized areas is going to require much more transit, including local shuttles.
- Adopt a policy that urges the Legislature to provide incentives for jurisdictions that adopt land use plans that substantially reduce future residents' per capita VMT.
- Expand programs that provide funding for infrastructure to shift freight hauling to the rail mode.
- Weigh air quality and climate change criteria heavily when deciding between funding freight facilities using highway or rail.
- Adopt a policy to approve funding for High Occupancy Vehicle (HOV) lane projects only where full funding for express bus service has been provided.
- If GHG emission reductions targets or goals are adopted by either the Air Resources Board (ARB) or a region or county, for the subject MPO, RTPA, county transportation commission, or CMA, a failure to demonstrate in the agency's Regional Transportation Plan (RTP) or countywide plan that said targets or goals will be met by the plan shall not be a cause of action to invalidate the RTP or countywide plan under CEQA. This exemption is necessary because none of these agencies control land use development decisions, nor do they have the range of necessary tools that could strongly influence individual travel behaviors.
- Preclude "induced growth" estimates, if generated as part of the RTP process, from being a cause of action under CEQA, since precise estimates of "induced growth" cannot be made with any certainty, and to allow such a cause of action could preclude development of enhanced mobility necessary to serve population and economic growth.
- For any project included in an approved RTP that has a greenhouse reduction strategy and is in effect as of the date that a Notice of Determination is filed for said project, such project should be exempted from any requirement to further analyze its greenhouse gas emissions reduction impact, and such impact shall be precluded as a cause of action under CEQA for said project.

- Make it easier to build more dense housing and mixed-use projects satisfying specific criteria by exempting them fully from all CEQA requirements that are not related to natural resources impacts; or providing, as a minimum, that traffic congestion and traffic impacts could not be a cause of action under CEQA against projects meeting the criteria. Such criteria should include, for example, density, design, diversity, and proximity to significant transit services. To qualify, the RTP or initial project studies should demonstrate, analytically, that the project is likely to reduce VMT/capita compared to current trends.
- Specify that any land use planning done as part of the RTP shall be:
 - a. Focused at the county level, allowing trade-offs between jurisdictions where collaboratively agreed-upon;
 - b. Include 20 or 25 year housing goals for each county; and
 - c. Done on a fully collaborative basis with broad local support for both the land use scenarios evaluated in the RTP process, and full concurrence by local jurisdictions with the land use pattern approved as the basis for the final RTP.