

Kimura, Lezlie@ARB

From: Weir, Jeff@ARB
Sent: Monday, April 06, 2009 11:31 AM
To: Kimura, Lezlie@ARB
Subject: FW: MPO Model/Data Assessments--Response to Comments/Requests from SB375 RTAC

Attachments: MPO Data Collection_Monitoring Program Assessment Followup Survey.xls; MPO DATA MODEL ASSESSMENT_RTAC_03042009.pdf; Proposed Functional Definition of Reasonable Sensitivity.doc



MPO Data



MPO DATA MODEL



Proposed

llection_MonitoringASSESSMENT_RTAC.unctional Definition.

-----Original Message-----

From: Bruce Griesenbeck [mailto:BGriesenbeck@sacog.org]
Sent: Wednesday, March 18, 2009 10:31 AM
To: Paul Fassinger; Bhupendra Patel; Randy Deshazo; Brian Lasagne; Chris Devine; Rachel Audino; Terri King; Dan Little; Elizabeth Wright; Mark Hays; Ted Smalley; Barbara Steck; Kathy Chung; Mike Bitner; Tony Boren; Vincent Liu; Ed Flickinger; M Heimer; Robert Ball; Troy Hightower; Derek Manning; Richard Poythress; Ty Phimmason; Jesse Brown; Marjie Kern; Chuck Purvis; Bruce Griesenbeck; Gordon Garry; Clint Daniels; William Yim; Michael Powers; Simon Choi; Sungbin Cho; Hsi-Hwa Hu; Guoxing Huang; Jonathon Nadler; Frank Wen; Yin Ming; Cowell; Dana Cowell; Kim Kloeb; Tanisha Taylor; Carlos Yamzon; Jim Schoeffling; Lark Downs
Cc: Ito, Doug@ARB; Paddock, Justin@ARB; Weir, Jeff@ARB; Briseno, Coco@DOT
Subject: MPO Model/Data Assessments--Response to Comments/Requests from SB375 RTAC

MPO Colleagues:

Thanks to all who worked so hard to get the MPO model assessment done in time for the March RTAC. I can tell you that the RTAC really appreciated it, and I think its going to pay dividends down the road in terms of the RTACs target-setting, and in terms of building a case for investing in data and modeling capabilities statewide. I attached the preliminary version of the assessment presented to the RTAC in March.

The RTAC had two major comments on the assessment:

- 1) They wanted to get some assurance that each MPO assessed themselves consistently, to the degree possible.
- 2) They wanted the state (Caltrans) modeling capabilities to be included in the assessment.

Here are the steps to getting this done, as I see it:

- Review the proposed responses to the RTAC below, fill out the 2 requests for additional information attached, and return that to me by March 27.
- I will consolidate all the responses and comments, and develop more specific guidance for revising the self assessment forms, and send that back to you by March 30.
- Revise MPO assessments according to the more specific guidance and return to me by April 10.
- I'll consolidate all the revisions to the assessments, and send to you a review draft of the assessment report by April 17.
- Final changes to assessment report by April 24.
- Final assessment report to RTAC May 5.

PROPOSED RESPONSES:

In response to #1 (consistent assessments), Im proposing the following:

For normalizing travel demand model / land use model assessments:

a) develop a consistent functional definition of what reasonable sensitivity is; and b) each revisit our own MPO model assessment in light of that common definition. Attached to this email as a starting point for developing a consistent functional definition of reasonable sensitivity which we at SACOG used for filling out our assessment. Please take a look at it and send me comments. I request comments or suggested changes/edits be made in track changes version of the attached Word document, making sure to include in the filename the MPO initials so I can keep them straight. I'm hoping we can accomplish this by email.

For normalizing data collection / monitoring programs:

"Reasonable sensitivity" doesn't apply to the "data collection/monitoring" components of the assessment. Inconsistency on assessments of data collection / monitoring programs were more complicated in some ways than were the model assessments. For example, for some data collection programs which are implemented by others (e.g. on-board transit surveys or ACS), but for which the MPO tracks, monitors, or otherwise processes and uses the data reported by the collecting agency, some MPO's assessed themselves "Data item relevant, but not monitored" simply because the direct data collection was done by others. Other MPO's (I suspect) may have looked at the same data element and assessed themselves "Current monitoring program adequate for expected needs". I created a follow-up survey for seven (7) of the data elements where the assessments seemed the most scattered. Hopefully, this will be easy to fill out and helps resolve some of these inconsistencies.

In response to #2 (add in state modeling capabilities), I'm proposing the following:

The Caltrans statewide model is a fundamentally different creature than the MPO models, in that it focuses on inter-regional and through travel, while each of the MPO models focus on the intra-regional travel demands. For this reason, I DO NOT want to add the Caltrans statewide model as a new "row" in this assessment. I would rather flag the following COLUMNS as especially germane to the Caltrans statewide model, and have some additional notes explaining the relevance of the Caltrans statewide model to them:

-on "Fig 1a. MPO Travel Demand Model Assessment Summary--Policy Sensitivity" (p.1 of 6): flag the "Intercity Transit" column as relevant to the statewide model. (FYI--This column should be re-titled to "Inter-Regional Transit"--it was intended to capture transit between regions, rather than between cities within one region).

-on "Fig 1b. MPO Travel Demand Model Assessment Summary--Exogenous Factors" (p.2 of 6): flag the "External Travel--Trucks/Freight" and "External Travel--Household-based" as relevant to the statewide model.

-on "Fig 3a. MPO Data Collection / Monitoring Program Assessment Summary" (p.5 of 6): flag the "External Travel Surveys" as being relevant to the statewide model.

For each of these columns, please let me know: a) to what extent to you rely on the statewide model for establishing IX/XI or X/X travel demands in your model; b) if you do not use the statewide model, what do you use; and c) if you do not use the statewide model, what factors figured into your decision to not use it. Also, let me know what you think of this approach for responding to the RTAC.

AND FINALLY:

-The revision of the CTC modeling guidelines with respect to AB32 and SB375 is now just beginning, in an effort lead by Caltrans. It has been suggested that this assessment work, once the above issues are coralled and reported back to the RTAC, would be transitioned over to Caltrans and be used in the CTC modeling guidelines effort. Please weigh in on this transition, and use of the MPO assessment in the CTC guidelines update process. I personally like this idea, especially the part about Caltrans taking this off my plate...

- SACOG is moving toward developing a model/data improvement program with a cost attached to it, for use in seeking grant funding, Prop.84 funding, etc. To MPO's interested in participating in a coordinated, multi-MPO request of this sort, I will send the draft of the improvement program and funding request. We are keying the improvement program and funding request to the identified areas of insensitivity or lack of capacity in SACOG's "row" of the MPO model/data assessment.

If you have any questions or comments on this, don't hesitate to send them my way.

Bruce Griesenbeck
SACOG
916-340-6268

Proposed Functional Definition of “Reasonable Sensitivity” for Use in the MPO Data/Modeling Assessment

The following definition is proposed by SACOG staff for consideration by other MPO staff, for use in normalizing the travel demand model and land use model assessments across MPO’s. If an MPO model fulfills this definition for a given factor, it would be rated as “Reasonably Sensitive to Factor” in the assessment. If MPO staff can reach consensus on this definition, each MPO would re-consider their assessments as presented to the RTAC in March and revise it accordingly. Note that this definition does not specify what “observed variation reported in research literature” is—any of you who have dived into this literature understands that for many of the factors we include in models, observed variations which could be applied to travel models are in short supply, or are non-existent.

“Reasonable sensitivity of a model to a key factor means that variations in the key factor which are used as inputs to or parameters within the model result in variations in model output measures which:

- a) fall within the range of observed variation reported in research literature;**
- b) match variations in observed travel or land use data (e.g. screenline traffic volumes, daily transit boardings by line, spatial distribution of dwellings) within tolerances established for modeling by the MPO, or those in published model validation guidelines; or**
- c) would be expected based on travel behavior theory, if a range of observed variation is not known, or no consensus exists as to the acceptable range of observed variation.”**

Instructions:

1. Please make editorial changes in “track changes” mode, and save the file with your MPO initials added to the filename, and send back to SACOG (bgriesenbeck@sacog.org). If you have questions, contact Bruce at 916-340-6268, or Doug Ito at CARB at 916-324-0356.
2. Please make any more general comments below:

Data Collection/Monitoring Program Assessments Follow-Up Survey

The data collection / monitoring program assessment identified several elements for which an unusually high proportion of assessments were either "Data item relevant, but not monitored" or "Current monitoring program inconsistent--no plans for improvement". This follow-up survey is intended to clarify these assessments, to ensure that all respondents were assessing in a consistent way for the following five elements:

- 1) External Travel Surveys (14 of 18 assessed "Data item relevant, but not monitored")
- 2) Ped/Bike Facilities (11 of 18 assessed "Data item relevant, but not monitored")
- 3) On Board Transit Surveys (10 of 18 assessed "Data item relevant, but not monitored")
- 4) Other VMT (12 of 18 assessed "Data item relevant, but not monitored")
- 5) American Community Survey (8 of 18 assessed "Data item relevant, but not monitored")

- I added two other items, based on the number of times I've heard either modelers, or non-modelers, or both, refer to them as potential problems, even though the assessments didn't indicate any real problems:

6) HPMS VMT Data

7) Household Travel Surveys

- Please respond to the questions regarding these six data collection/monitoring program elements on the following tabs. Note that the questions are keyed to the assessment you made of your MPO's current activities. Each MPO should respond to the questions based on their assessment in the assessment as presented to the RTAC in March. Note: I think one of the consistency issues was that some MPO's considered some data programs as the "property" of other agencies (i.e. not an MPO function), but assessed themselves
- Your responses will be tallied with all other MPO's, and all responses will be shared with other MPO's for review and comment.
- Save your response with your MPO initials added to the filename and return to bgriesenbeck@sacog.org. For any questions contact Bruce at 916-340-6268, or Doug Ito at CARB at 916-324-0356.
- Added to each element is a generic definition of the element, which is intended to be helpful in responding to the questions. Feel free to edit the definition--make your changes in color or in a separate cell to ease

Data Collection/Monitoring Program Assessments Follow-Up Survey

1) External Travel Surveys

External travel surveys include any survey intended to collect data on travel by persons or vehicles which are traveling through a region (so-called X/X travel), or persons or vehicles which either reside or are traveling from some location outside the region, but have some activity which requires travel to a location within the region (IX/XI travel). The two most common types of external travel surveys are "gateway intercept surveys", in which some portion of drivers are stopped and surveyed at gateway locations on a region's edge, or "video license plate surveys" in which license plate numbers at gateway locations are recorded at one or more locations, and used to identify specific vehicles for plate-matching to other locations, or for mail-back surveys.

If your assessment of your MPO's external travel survey data collection was either "Data item relevant, but not monitored" or "Current program inconsistent--no plans for improvement" please respond to the following:

a) External travel survey programs assessed poorly because (check all that apply):

- External travel surveys are expensive and difficult.
- No funding is available for external travel surveys.
- MPO relies on Caltrans statewide travel model for setting IX/XI and X/X travel demand--MPO survey or monitoring not needed.
- MPO relies on surveys taken by others (e.g. statewide travel survey, Census) to establish base year IX/XI and X/X demands--MPO survey or monitoring not needed.
- MPO relies on historic external travel survey data, and scales up historic data to current base year--MPO survey or monitoring not needed.
- MPO relies on other data sources not named above. Please list sources below.

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

If your assessment of your MPO's external travel survey data collection was either "Current program inconsistent--improvement planned" or "Current monitoring program adequate for expected needs" please respond to the following:

a) External travel survey programs assessed as adequate, or likely to be adequate, because (check all that apply):

- MPO has a recently completed external travel survey.
- MPO has funding to undertake an external travel survey in the near future.
- MPO relies on Caltrans statewide travel model for setting IX/XI and X/X travel demand--this is deemed adequate for MPO purposes.
- MPO expects that surveys taken by others (e.g. statewide travel survey, Census) will be available to establish base year IX/XI and X/X demands--this is deemed adequate for MPO purposes.
- purposes.
- MPO relies on other data sources not named above. Please list sources below.

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

Data Collection/Monitoring Program Assessments Follow-Up Survey

2) Pedestrian / Bicycle Facilities

Pedestrian and bicycle facilities include various sorts of bike lanes (e.g. Class I, II, III), or facilities for use by pedestrians or bicyclists. Some facilities are exclusive to pedestrians or bicycles (e.g. Class I bike lanes, or pedestrian bridges, etc.). Other facilities are shared with other travelers or users (e.g. sidewalks, crosswalks, ramps at intersections).

If your assessment of your MPO's ped/bike facility data collection was either "Data item relevant, but not monitored" or "Current program inconsistent-no plans for improvement" please respond to the following:

a) Ped/bike facility monitoring programs assessed poorly because (check all that apply):

- Monitoring facilities of this type is difficult and expensive.
- No funding is available for monitoring programs for ped/bike facilities.
- MPO does not have staff trained to track facilities of this type.
- MPO does not have computer capabilities (e.g. GIS) to effectively track facilities of this type.
- MPO tracks some types of ped/bike facilities consistently, but not others. List types of facilities consistently tracked:

Type 1: _____
Type 2: _____
Type 3: _____
Type 4: _____
Type 5: _____

- MPO tracking of ped/bike facilities is spotty and inconsistent.
- MPO relies on other agencies to track facilities of this type, and doesn't need to do tracking itself. List sources below:

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

If your assessment of your MPO's ped/bike facility data collection was either "Current program inconsistent--improvement planned" or "Current monitoring adequate for expected needs" please respond to the following:

a) Ped/bike facility monitoring programs assessed adequate, or likely to be adequate, because (check all that apply):

- MPO actively monitors ped/bike facilities on a regular basis.
- MPO plans, but no identified funding, to actively monitor ped/bike facilities on a regular basis.
- MPO has funding and committed plans to actively monitor ped/bike facilities on a regular basis.

MPO tracks some types of ped/bike facilities consistently--this is adequate to meet needs. List types of facilities consistently tracked:

Type 1: _____
Type 2: _____
Type 3: _____
Type 4: _____
Type 5: _____

MPO relies on other agencies to track facilities of this type, and this is adequate for expected needs. List sources below.

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

Data Collection/Monitoring Program Assessments Follow-Up Survey

3) On-Board Transit Surveys

On-board transit surveys are intended to collect travel and demographic information from passengers on transit vehicles. The surveys are important for establishing the demographic profile of riders, trip purposes or activities served by transit, timing of trips, and travel patterns of transit passengers.

If your assessment of your MPO's on-board transit surveys was either "Data item relevant, but not monitored" or "Current program inconsistent--no plans for improvement" please respond to the following:

a) On-board transit survey data collection was assessed poorly because (check all that apply):

- Surveys of this type are difficult and expensive.
- No funding is available for on-board transit surveys.
- MPO expects that surveys taken by others (e.g. individual operators) will be available--not considered and MPO monitoring program.
- MPO relies on recent on-board transit survey data--not considered and MPO monitoring program.
- MPO relies on recent on-board transit survey data, but the quality or currency of the surveys varies widely.
- MPO relies on other data sources not named above--not considered an MPO monitoring function. Please list sources below.

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

If your assessment of your MPO's on-board transit surveys was either "Current program inconsistent--improvement planned" or "Current monitoring adequate for expected needs" please respond to the following:

a) On-board transit survey data collection assessed as adequate, or likely to be adequate, because (check all that apply):

- MPO has a recent on-board survey--this is adequate for MPO.
- MPO has funding and committed plans to perform and on-board survey--this is adequate for MPO.
- MPO relies on other agencies to do surveys of this type, and this is adequate for expected needs. List sources below.

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

Data Collection/Monitoring Program Assessments Follow-Up Survey

4) Other (non-HPMS) VMT Data

The Highway Performance Monitoring System provides the only sanctioned estimate of VMT attributable to a specific regional geography for most MPO's. Because HPMS is a sample-based estimate, with all of the limitations and caveats which apply to such estimates, many transportation professionals have proposed augmentation of HPMS with other-sourced estimates: odometer readings (e.g. annual DMV registration data); fuel sales (converted to VMT by fleet mpg estimates); enumeration of household travel surveys; etc.

If your assessment of your MPO's other (non-HPMS) VMT data collection or monitoring was either "Data item relevant, but not monitored" or "Current program inconsistent--no plans for improvement" please respond to the following:

a) Other (non-HPMS) VMT data collection was assessed poorly because (check all that apply):

- HPMS VMT data is adequate for expected needs--other sources of VMT not needed.
- Level of effort required to collect and process non-HPMS sources of VMT data is unknown--MPO cannot commit to doing this
- No funding is available for collecting and processing the non-HPMS sources.
- MPO expects that other non-HPMS VMT data will be available through other agencies--MPO collection/processing not needed.
- Confidence in the utility of non-HPMS data sources is very low--no interest in using them for MPO activities.

b) Other Comments:

Comment 1:

Comment 2:

Comment 3:

Comment 4:

Data Collection/Monitoring Program Assessments Follow-Up Survey

5) American Community Survey Monitoring

The American Community Survey is the planned replacement for the decennial Census long-form survey. The ACS is taken annually, with an average sample of about 3 million households. Reporting of results for larger population geographies (65,000+ persons) is annual; for geographies with 20,000+ persons, reporting is for 3-year averages; for geographies with less than 20,000 persons, reporting of results will be 5-year averages. ACS will provide ongoing data for use by transportation professionals, and requires adaptation of MPO demographic monitoring programs which were based on the decennial Census only.

If your assessment of your MPO's other ACS monitoring was either "Data item relevant, but not monitored" or "Current program inconsistent--no plans for improvement" please respond to the following:

a) ACS monitoring was assessed poorly because (check all that apply):

- MPO has had little funding and staff time to adapt to ACS.
- MPO jurisdiction area includes significant geographies with less than 20,000 population--ACS not available for that until 2010.
- MPO is aware of ACS data, but has no current use for them.
- Due to sample size, ACS data have such wide confidence intervals the data are of limited use.
- MPO uses and relies on ACS data, but since the direct data collection is done by Census Bureau, it is not considered an MPO monitoring program.

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

If your assessment of your MPO's ACS monitoring was either "Current program inconsistent--improvement planned" or "Current monitoring adequate for expected needs" please respond to the following:

a) ACS monitoring assessed as adequate, or likely to be adequate, because (check all that apply):

- MPO uses and relies on ACS data--current releases are sufficient.
- MPO uses and relies on current ACS data, but needs future releases of 5-year averages for smaller areas will be adequate to meet needs.
- MPO does not currently use ACS data, but has plans to do so when 5-year averages for smaller areas are released.

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

Data Collection/Monitoring Program Assessments Follow-Up Survey

6) HPMS VMT Estimates

The Highway Performance Monitoring System provides a sample-based estimate of total systemwide VMT attributable to specific regions. The process includes several steps: 1) the sample roadway segments are designated by Caltrans; 2) roadway owners/operators count sample segments on a minimum 3-year cycle, with counts (along with other information on the sample segments) duly reported to Caltrans annually; and 3) Caltrans enumerates to the sample roadway segment data and annually reports VMT estimates by jurisdiction. For purposes of this question, it is understood that MPO's do not directly collect or process data for HPMS; however, HPMS data are monitored, assembled, and used by most MPO's for documentation of trends, model validation, and other purpose; these activities, while not direct data collection, are data monitoring programs and should be assessed as such.

If your assessment of your MPO's HPMS VMT monitoring program was either "Data item relevant, but not monitored" or "Current program inconsistent--no plans for improvement" please respond to the following:

a) HPMS monitoring was assessed poorly because (check all that apply):

- MPO has little or no control over the designation of sample roadway segments.
- Concerns about the frequency and quality of counts reported by local agencies.
- Concerns about the non-response by local agencies.
- Based on MPO functions and duties to-date, HPMS is adequate; however, AB32, SB375 and other policy initiatives are likely to require more intensive, reliable VMT estimates.
- The 3-year count cycle is insufficient to track year-by-year changes in VMT.
- MPO uses and relies on HPMS, but since the direct data collection is done by others, not considered an MPO monitoring program.

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

If your assessment of your MPO's HPMS monitoring program was either "Current program inconsistent--improvement planned" or "Current monitoring adequate for expected needs" please respond to the following:

a) HPMS VMT monitoring assessed as adequate, or likely to be adequate, because (check all that apply):

- MPO has confidence in HPMS VMT data--this source deemed adequate for recent needs.
- MPO has confidence in HPMS VMT data--this source deemed adequate for expected needs related to AB32, SB375 and other policy initiatives.
- MPO has confidence in its monitoring and processing of HPMS data for its own use--the underlying data is presumed to be correct.

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

Data Collection/Monitoring Program Assessments Follow-Up Survey

7) Household Travel Surveys

Household travel surveys are the main tool for collecting travel behavior data, which can be correlated directly with: 1) location of residence or other activity locations; 2) demographic characteristics of the traveler, or traveler's household; 3) auto ownership within the household; and many other variables. Three household travel surveys which are commonly available to MPO's, in some form, are: surveys conducted by the MPO directly; survey's conducted by the State, with data provided to the MPO; and National Household Travel Survey data reports, or as raw data collected as part of the augmented sample for some MPO's.

If your assessment of your MPO's on-board transit surveys was either "Data item relevant, but not monitored" or "Current program inconsistent--no plans for improvement" please respond to the following:

a) Household survey data collection was assessed poorly because (check all that apply):

- Surveys of this type are difficult and expensive.
- The last MPO survey has gone stale, and no funding is available for the next MPO survey.
- MPO expects that a survey taken by others (e.g. Caltrans) will be available--MPO survey not needed
- MPO relies on a recent household survey--new survey not planned. Please list year of survey: _____
- MPO relies on other data sources not named above--MPO survey not needed. Please list sources below.

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

If your assessment of your MPO's household travel survey was either "Current program inconsistent--improvement planned" or "Current monitoring adequate for expected needs" please respond to the following:

a) Household survey data collection assessed as adequate, or likely to be adequate, because (check all that apply):

- MPO has a recent household survey--this is adequate for MPO. Please list year of survey: _____
- MPO has plans (but no committed funding) to perform household survey--this is adequate for MPO. List year to survey: _____
- MPO has funding and committed plans to perform household survey--this is adequate for MPO. List year to survey: _____
- MPO relies on Caltrans to perform statewide survey, and make data available--this is adequate for expected needs.
- MPO relies on other agencies to do surveys of this type, and this is adequate for expected needs. List sources below.

Source 1: _____
Source 2: _____
Source 3: _____
Source 4: _____

b) Other Comments:

Comment 1: _____
Comment 2: _____
Comment 3: _____
Comment 4: _____

Figure 1a.
MPO TRAVEL DEMAND MODEL ASSESSMENT SUMMARY—POLICY SENSITIVITY (PRELIMINARY)

This chart focuses on policy variables which significantly influence travel in a region, and over which local agencies and system operators have some level of control.

General Observations:

- Larger MPO's reported having models with reasonable sensitivity to more key factors, as well as more plans for model improvements and active development work, than did smaller MPO's.
- Smaller MPO's reported having simpler models, without sensitivity to many key factors. Very few smaller MPO's have models capable of modeling transit.
- For several policies/key factors, most MPO's reported their models had no capacity, untested capacity, or insensitivity to the factor:
 - o Micro-level land use factors (including many of the "Ds")
 - o ITS and traffic management
 - o Intercity transit
 - o Pricing policies, especially those for toll roads and HOT lanes

KEY	Policy Not Applicable In Region	No Capacity to Model Factor	Sensitivity Unknown / Untested	Insensitive to Factor	Reasonably Sensitive to Factor
No Planned Improvement					
Planned Improvement					
Improvement Under Development					

MPO (Listed by Population in Descending Order)	POLICY VARIABLE OR FACTOR																
	MACRO LAND USES		MICRO LEVEL LAND USES (e.g. the "Ds")			ROAD PROJECTS			TRANSIT PROJECTS				PRICING				
	Distribution	Mix	Density	Mix	Pedestrian Environment	Gen'l Purpose	HOV	ITS / Traffic Management	New Lines	Increase Service	Upgrade (e.g. bus > LRT)	Intercity Transit	Tolls/Toll Roads	HOT Lanes	Parking	VMT	Transit Fares
SCAG																	
MTC/ABAG																	
SANDAG																	
SACOG																	
FRESNO COG																	
KERN COG																	
AMBAG																	
SJ COG																	
STAN COG																	
TULARE CAG																	
SBCAG																	
SLO COG																	
MERCED CAG																	
BUTTE CAG																	
SHASTA CO. RTPA																	
KING CAG																	
MADERA CTC																	
TAHOE MPO																	

This information was assembled by SACOG staff, based on information provided by staff at each reporting MPO, and is labeled "Preliminary" for two reasons: 1) some MPO's haven't prepared assessments; 2) assessments of sensitivity to key factors based on individual judgements by MPO staffers, without feedback between the MPO's to normalize the assessments.

Figure 1b.
MPO TRAVEL DEMAND MODEL ASSESSMENT SUMMARY—EXOGENOUS FACTORS (PRELIMINARY)

This chart focuses on variables which are not directly controlled by local agencies and system operators, but which nonetheless significantly influence travel in a region.

General Observations:

- Reports of model capabilities mirror those for travel modeling for policy variables:
 - o Larger MPO's reported having models which capture more factors, and had more planned or ongoing improvements
 - o Smaller MPO's reported having models which capture fewer factors, with fewer planned improvements.
- Accounting for characteristics of vehicle fleets (i.e. what sort of vehicles travelers use, in aggregate) or vehicle type was not reported as being accounted for within any travel model. (Note: fleet characteristics are usually attached to travel predictions from models *post hoc*, for emissions estimation).
- Very few MPO's reported any capacity or known sensitivity to external travel, whether it be trucks or household-based trip purposes.

KEY	Policy Not Applicable In Region	No Capacity to Model Factor	Sensitivity Unknown / Untested	Insensitive to Factor	Reasonably Sensitive to Factor
No Planned Improvement					
Planned Improvement					
Improvement Under Development					

MPO (Listed by Population in Descending Order)	EXOGENOUS FACTORS						
	Gas Prices	Auto Operating Cost	Age	Income	Vehicle Fleet	External Travel—Trucks / Freight	External Travel—Household-Based
SCAG							
MTC/ABAG							
SANDAG							
SACOG							
FRESNO COG							
KERN COG							
AMBAG							
SJ COG							
STAN COG							
TULARE CAG							
SBCAG							
SLO COG							
MERCED CAG							
BUTTE CAG							
SHASTA CO. RTPA							
KING CAG							
MADERA CTC							
TAHOE MPO							

This information was assembled by SACOG staff, based on information provided by staff at each reporting MPO, and is labeled "Preliminary" for two reasons: 1) some MPO's haven't prepared assessments; 2) assessments of sensitivity to key factors based on individual judgements by MPO staffers, without feedback between the MPO's to normalize the assessments.

**Figure 1c.
MPO TRAVEL DEMAND MODEL ASSESSMENT SUMMARY—OTHER FACTORS (PRELIMINARY)**

This chart focuses on variables which were added to the assessment by one or more MPO's in the process of filling out the initial assessment; these policies or factors have NOT yet been presented to all MPO's.

General Observations:

- Two MPO's (SANDAG and SCAG) reported the capacity to model an array of TDM strategies. Among the policies/factors were: carsharing, vanpool/buspool, guaranteed ride home programs, telecommuting, etc.
- One MPO (SCAG) reported the capacity to model an array of goods movement policies, including development of freight corridor, port access and freight facility improvements, truck lanes, and operational improvements focused on goods movement.
- SANDAG reported the capacity to model transit accessibility, including slope of walk to transit.

KEY	Policy Not Applicable In Region	No Capacity to Model Factor	Sensitivity Unknown / Untested	Insensitive to Factor	Reasonably Sensitive to Factor
No Planned Improvement					
Planned Improvement					
Improvement Under Development					

MPO (Listed by Population in Descending Order)	OTHER FACTORS					
	TDM Strategies	Goods Movement (e.g. freight corridors, truck lanes, etc.)	Aviation / Airport Ground Access	Other Demographics (e.g. household composition, etc.)	Transit Accessibility	
SCAG						
MTC/ABAG						
SANDAG						
SACOG						
FRESNO COG						
KERN COG						
AMBAG						
SJ COG						
STAN COG						
TULARE CAG						
SBCAG						
SLO COG						
MERCED CAG						
BUTTE CAG						
SHASTA CO. RTPA						
KING CAG						
MADERA CTC						
TAHOE MPO						

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Figure 2.
MPO LAND USE MODEL ASSESSMENT SUMMARY (PRELIMINARY)

Land use models are used to forecast or project future land use quantities and spatial distributions within a region. The simplest models allocate future growth to areas based on available capacity and forecaster judgement. The most advanced models are based on analysis of economic activities within a region, and include feedback to travel demand models.

General Observations:

- As with travel models, larger MPO's reported having land use models with reasonable sensitivity to key factors, as well as more plans for model improvements than do smaller MPO's.
- Very few MPO's have land use models with known sensitivity or capacity to capture key economic factors like housing affordability, factors which influence land development (e.g. land costs, returns-on-investment, etc.) or basic economic production within the region.
 - o Two larger MPO's (SCAG and SACOG) reported active development of an integrated land use/transport model which is intended to capture many economic factors.
 - o SCAG reported all capabilities as "under development" without an assessment of current capabilities.
- Most regions account for state-sanctioned control totals, such as the DOF population projections, although some reported that regional control totals were locally generated or derived.

KEY	Policy Not Applicable In Region	No Capacity to Model Factor	Sensitivity Unknown / Untested	Insensitive to Factor	Reasonably Sensitive to Factor
No Planned Improvement					
Planned Improvement					
Improvement Under Development					

MPO (Listed by Population in Descending Order)	FACTORS INFLUENCING FUTURE LAND USE							
	LAND USE POLICY			ECONOMIC FACTORS			OTHER	
	Current Zoning / Gen'l Plans	Planned Changes to Z/GP (E.g. SOI)	Other Land Use Policy Changes	Resid. Locatin (e.g. affordability)	Development-Related (e.g. ROI, land cost, etc)	Regional Production	Historic Growth Trends	State-Sanctioned Control Totals
SCAG								
MTC/ABAG								
SANDAG								
SACOG								
FRESNO COG								
KERN COG								
AMBAG								
SJ COG								
STAN COG								
TULARE CAG								
SBCAG								
SLO COG								
MERCED CAG								
BUTTE CAG								
SHASTA CO. RTPA								
KING CAG								
MADERA CTC								
TAHOE MPO								

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Figure 3a.
MPO DATA COLLECTION / MONITORING PROGRAM ASSESSMENT SUMMARY (PRELIMINARY)

Data collection and monitoring programs are intended to gather, organize, and report observed land uses, demographics, characteristics of the transportation system, and utilization of that system in a region. The data are used for evaluating trends and changes over time, updating the base year datasets for forecasting models, and validating the models themselves.

General Observations:

- Most common assessment reported was “inconsistent...”--that is, data are collected but not on a regular schedule or in a consistent way.
 - o Especially true of housing and employment monitoring—only one MPO gave themselves an “adequate” assessment.
- Decennial census and household travel surveys (normally about every 10 years) were the most often reported as “adequate”.
- The American Community Survey (ACS) was reported by several MPO’s as “not monitored” because the complete geography, 5-year rolling average sample datasets have not yet been released.
- HPMS (primary source of geographically-specific VMT data) was reported by many MPO’s as “inconsistent” with no plans for improvement, in large measure because they have little control over key aspects of the program.
- Only two MPO’s reported monitoring of external travel as anything but “not monitored”.
- For transportation supply, monitoring of roadways was generally assessed as adequate; monitoring of transit services and pedestrian or bicycle facilities was often not monitored by smaller MPO’s.

KEY	Data Item Not Relevant to Region	Data Item Relevant, but not Monitored	Current Monitoring Inconsistent—No Plans for Improvement	Current Monitoring Inconsistent—Improvement Planned	Current Monitoring Adequate for Expected Needs
	○	●	●	●	●

MPO (Listed by Population in Descending Order)	DATA COLLECTION / MONITORING PROGRAM ELEMENTS															
	LAND USE				DEMO-GRAPHICS		TRANSPORTATION UTILIZATION						TRANSPORTATION SUPPLY			
	Housing	Employment	Schools	Policy (e.g. Zoning)	Decennial Census	Am. Comm. Survey	HPMS (VMT)	Other VMT	Traffic Counts	Transit Bdgs.	On-Bd. Surveys	Household Travel Surveys	External Travel Surveys	Roadways	Transit Service	Ped/Bike Facilities
SCAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MTC/ABAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SANDAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SACOG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FRESNO COG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
KERN COG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
AMBAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SJ COG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STAN COG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
TULARE CAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SBCAG	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●
SLO COG																
MERCED CAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
BUTTE CAG	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SHASTA CO. RTPA	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●
KING CAG	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●
MADERA CTC	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●
TAHOE MPO																

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Figure 3b.
MPO DATA COLLECTION / MONITORING PROG.—OTHER ITEMS (PRELIMINARY)

The items listed below were identified by one or more MPO's as additional items they monitor, or plan to monitor. Since these were not on the initial assessment form, most MPO's have not evaluated them.

General Observations:

- Two MPO's reported acquiring data from integrated sources, such as Claritas.
- Two MPO's reported acquiring migration/immigration data from various sources.

KEY	Data Item Not Relevant to Region	Data Item Relevant, but not Monitored	Current Monitoring Inconsistent—No Plans for Improvement	Current Monitoring Inconsistent—Improvement Planned	Current Monitoring Adequate for Expected Needs
No Planned Improvement	○	●	●	●	●

MPO (Listed by Population in Descending Order)	OTHER FACTORS									
	DEMOGRAPHICS					SYSTEM UTILIZATION				
	CA Dept. of Finance Estimates	Integrated Data (econdata.net, Claritas)	Migration / Immigration	Fertility / Mortality	Non-Motorized Travel Surveys	Airport Surveys				
SCAG	●	●	●	●	●	●	●			
MTC/ABAG		●								
SANDAG	●		●	●	●	●	●			
SACOG										
FRESNO COG										
KERN COG										
AMBAG										
SJ COG										
STAN COG										
TULARE CAG										
SBCAG										
SLO COG										
MERCED CAG										
BUTTE CAG										
SHASTA CO. RTPA										
KING CAG										
MADERA CTC										
TAHOE MPO										

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