State of California
AIR RESOURCES BOARD

STAFF REPORT

UPDATE ON SENATE BILL 375 IMPLEMENTATION IN THE SAN JOAQUIN VALLEY

Date of Release: **January 15, 2013**
Scheduled for Consideration: **January 24, 2013**

UPDATE ON MPO SB 375 IMPLEMENTATION EFFORTS

In September 2010, the California Air Resources Board (ARB or Board) set passenger vehicle greenhouse gas (GHG) emission reduction targets for 2020 and 2035 for each of the 18 Metropolitan Planning Organization (MPO) regions in California under the Sustainable Communities and Climate Protection Act of 2008 (SB 375). During that first target-setting cycle, the Board recognized the unique situation the MPOs in the Valley[1] faced in implementing SB 375. The eight MPOs represent nearly eleven percent of California's population and is its fastest growing area, expected to absorb 22 percent of the state's growth by 2035, creating a high potential for GHG emissions reductions with SB 375 strategies. Timing of the MPOs' Regional Transportation Plan (RTP) development cycle, however, meant that significant near-term changes in the MPOs' modeling and data related to SB 375 implementation was imminent. Furthermore, SB 375 provided a special option to these MPOs to coordinate their approach to GHG planning, similar to the coordination process they already have in place for addressing air quality planning. The Board therefore requested that ARB staff provide an informational update to report on the MPOs' progress in improving their data and models, as well as on how the MPOs' intend to address their statutory option to coordinate on SB 375 implementation.

Since that time, the eight MPOs have been working with each other and in coordination with staff at ARB and the Valley Air District on a number of efforts to build the technical and policy foundation for SB 375 implementation and Sustainable Communities Strategy (SCS) development. The San Joaquin Valley Regional Planning Agencies' Policy Council (Policy Council), representing the eight MPOs, has taken on a leadership role towards a joint technical and policy approach to SB 375 implementation between the MPOs. Their leadership has resulted in a number of coordination efforts between the eight MPO executive directors, their staffs, and stakeholders.

On December 14, 2012, the Policy Council adopted an SB 375 implementation progress report and target recommendation in preparation for ARB's January Board meeting. The progress report discusses travel model and data improvements, initial scenario analyses, MPO coordination on SCS development, as well as ongoing and future work efforts. The target recommendation to ARB is to maintain the current GHG reduction targets of five percent in 2020 and ten percent in 2035 on an aggregate valley-wide basis. A copy of the report and MPO staff presentation is attached as Appendix A to this document. ARB staff's review of the available data and documentation follows.

[1] The eight MPOs in the Valley cover San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and Kern counties.

Travel model and data improvements

Beginning in 2010, the eight MPOs began a joint process to significantly improve their travel demand modeling capabilities to help meet SB 375 requirements. This process, known as the San Joaquin Valley Model Improvement Program (MIP) was funded by a $2.5 million Strategic Growth Council Proposition 84 grant. Over the past two years, staff from each of the eight MPOs participated in monthly meetings with a team of technical consultants to upgrade the models and modeling processes.

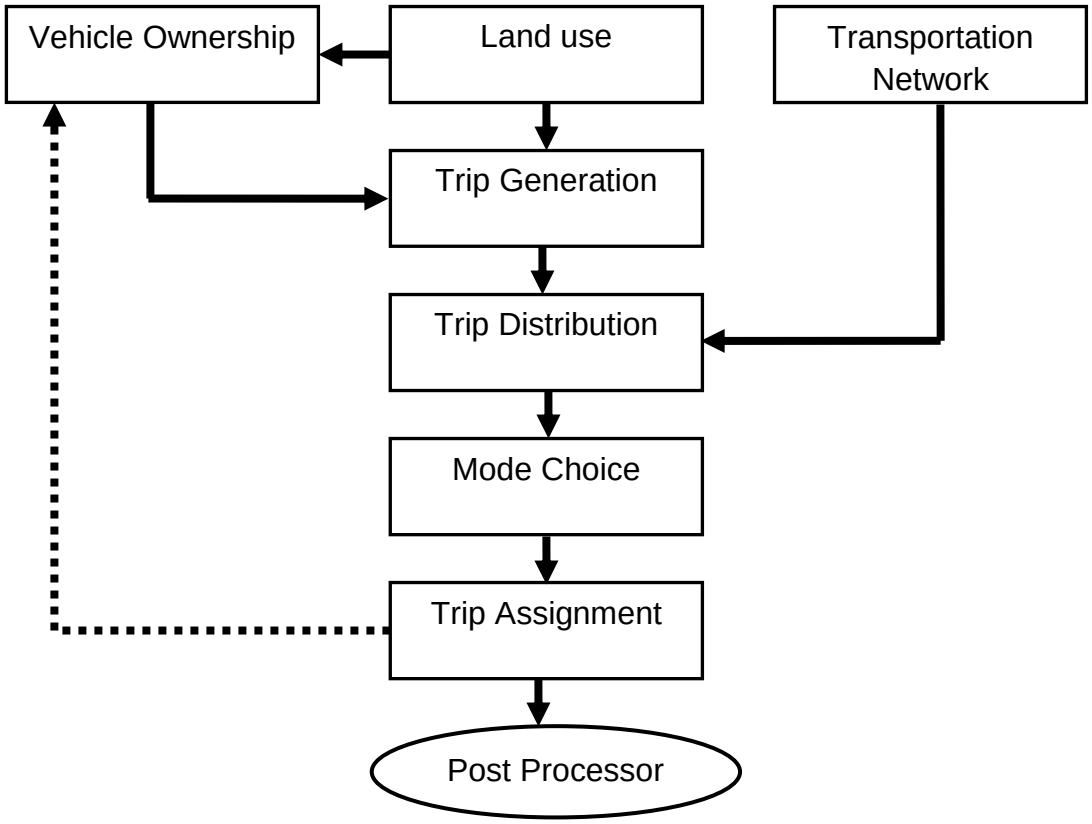
The MIP effort resulted in the delivery of substantially upgraded and standardized travel demand models to the MPOs in the summer of 2012. Each MPO is continuing to refine these models as they move into RTP/SCS plan development. The new travel models are designed to better evaluate the types of land use and transportation policies likely to be considered in the RTP/SCSs. Sensitivity to changes in land use and travel estimates was improved compared to previous models by – (i) refining each models' traffic analysis zone (TAZ)[2] system to better capture mixed-use and transit oriented development; (ii) incorporating additional socioeconomic variables such as housing units by building type, household income, housing density, employee by detailed sector and employment density; and (iii) adding a vehicle ownership component and improved sensitivity to travel characteristics.

In addition, the MIP resulted in the standardization of model software, inputs, and methodologies between the eight MPOs. The new models employ a common software package called CUBE[3], which will enhance the MPOs' ability to share data and resources with each other, coordinate on model improvement and training efforts, as well as analyze multi-county issues. The MPOs have already developed a common online data portal to share their model-related documents.

Improvements made to the model input data and each of the key components of the travel demand models (see Figure 1): vehicle ownership, trip generation, trip distribution, mode choice, and trip assignment, are discussed in more detail in the following section.[4]

[2] TAZs are the most commonly used geographic units in the travel demand model. TAZs split the entire study area at the major boundaries and freeways.
[3] CUBE is a computer software package specifically designed for transportation planning and analysis.
[4] Executive Summary for the Eight San Joaquin Valley MPO Traffic Models to Meet the Requirements of SB 375, August 30, 2012.

Figure 1. Key Components of New Regional Travel Demand Models



Data Input: The new models feature improved TAZ systems, socioeconomic data, land use and travel network characteristics. Improvements to the TAZ systems are designed to help the MPOs capture more detailed travel movements throughout the region, which allows for more precise analysis of land use and smart growth effects. The new models also add 60 external zones to facilitate modeling trips going to and from the region. Improvements to socioeconomic, land use and transportation network data in the models better account for differences in vehicle ownership and trip generation factors, as well as standardize categories across the eight MPOs. For example, housing units, household income, age of population in households, housing density, employee by detailed sector, employment density, and access to walk, bike, and transit modes are now consistently defined and stratified across all eight MPOs.

Vehicle Ownership: Modeling of vehicle ownership is a new component of the MPOs' travel demand models. Previously the MPOs used a fixed rate of vehicle ownership. The new models now calculate the number of motor vehicles in a region based on demographic characteristics, auto operating cost, and accessibility. The output of this component is a critical input to the trip generation step, helping to capture the economic characteristics of each household.

Trip Generation: The trip generation component of the MPOs' new models estimates the number of person-trips for each activity, such as traveling to-and-from work, school, shops, and social/recreational events. The new models estimate person trips based on demographic and employment characteristics, increasing their capability to analyze the effect of socioeconomic factors on trip rates. Further, the new models increase the number of trip purposes from five to eleven.[5] This change gives the MPOs the capability to distinguish the potential for alternative modes such as school and college trips. The new models also improve the trip generation step by allowing trip rates to vary by income, household size, the number of workers in a household, drivers, and vehicle ownership. This provides the MPOs with better information about regional travel patterns.

Trip Distribution: Trip distribution estimates the number of trips from one travel zone to each of the other travel zones in the county. The new models improve the sensitivity of changes to land use on trip distribution by better reflecting the attributes that influence a person's decision to travel. The MPOs previously distributed trips based on one variable (e.g., auto travel time). The new models now provide the capability to consider additional factors such as trip purpose, person travel time by all modes, travel cost, congestion, and vehicle ownership.

Mode Choice: The number of MPOs with mode choice models has increased from two to five (Fresno, Kern, San Joaquin, Stanislaus, and Merced). This component is used to predict the probability of selecting a travel mode (e.g., auto, transit, bike and walk) for each trip in the region based on the income of the trip maker, the travel cost, time and accessibility of other modes, and improves the travel models' responsiveness to socioeconomic characteristics, land use, pricing and parking strategies. The new mode choice models include seven travel modes with a separate mode choice for walk and bike.

Trip Assignment: The trip assignment component estimates traffic volumes and travel times for each roadway in the network. The new models enhance the trip assignment component by including a new feedback mechanism between the trip assignment and the number of autos to enhance the MPOs' ability to address induced travel demand. The feedback mechanism inputs congested travel times into the model, which helps to account for travelers who change their travel route and mode in response to congestion.

Model Calibration and Validation: The MPOs are continuing work to refine the new models for official adoption and use in the development of their upcoming RTP/SCSs. A critical part of this process has been the MPOs ongoing work to complete and

[5] The additional trip purposes includes home-based K-12, home-based college, highway commercial, trucks-small, trucks-medium, and truck-heavy.

document both model calibration and validation work for each of the models. A calibration and validation report for the new travel models is anticipated as part of each MPO's final RTP/SCS in the late 2013 - early 2014 time period.

Model calibration is performed to adjust the model coefficients and parameters until model output matches observed data, and is an iterative process. The MPOs intend to perform calibration for each component of the model following the Federal Highway Administration and Caltrans guidelines, to ensure that the models produce reasonable forecasts. Once the models are calibrated, the next step will be model validation.

Model validation, a critical step in the development of any regional travel demand model, establishes the credibility of the model to predict future travel behavior. The MPOs intend to perform both static and dynamic validation[6] on the new models as recommended by Federal Highway Administration guidelines.[7] Static validation will include – (i) trip generation rates, (ii) trip length frequency by purpose, (iii) average travel time by purpose, (iv) mode split by purpose, (v) traffic assignment by facility, and (vi) transit ridership. Dynamic validation will include changing socioeconomic (household size, income, age distribution), land use (density, household location) and travel cost (auto operating cost and parking price) inputs.

Initial scenario analyses and target recommendation

The MPOs provided ARB staff with initial informational scenario analyses using early versions of their new models. The MPO progress report (Appendix A) includes descriptions of each MPO's test scenario. These initial scenarios do not represent locally approved or adopted land use or transportation elements. They are starting points from which each MPO will begin developing and refining their actual RTP/SCS plan during their formal plan development processes.

Table 1 summarizes the results of the MPOs' initial scenario analyses for 2020 and 2035, using updated land use, population, employment, travel data, and the new travel models.

[6] Base year validation is called static validation and is performed by comparing model results to observed data. Dynamic validation tests the predictive capabilities of the model and it is tested by changing the input data for future year forecasts.

[7] Travel Model Improvement Program (TMIP) – Travel model validation and reasonableness checking manual (Second Edition).

Table 1. Initial results of MPO scenario analyses
(Percent reduction in passenger vehicle CO2 per capita from 2005)

Metropolitan Planning Organization (MPO)	2020	2035
San Joaquin Council of Governments (SJCOG)	23.3	30.1
Stanislaus Council of Governments (StanCOG)	19.3	17.7
Merced County Association of Governments (MCAG)	5.6	2.6
Madera County Transportation Commission (MCTC)	4.7	10.3
Fresno Council of Governments (Fresno COG)	4.7	7.6
Kings County Association of Governments (KCAG)	6.8	10.2
Tulare County Association of Governments (TCAG)	7.5	7.7
Kern Council of Governments (Kern COG)	5.4	11.6
Valley-wide	10.9	14.2

Both MPO and ARB staff recognize that there will be variability between the initial results and the final RTP/SCS scenarios in 2013/14, due to ongoing model validation and calibration work, ongoing local discussions of land use and transportation strategies, and the development of post-processing quantification methods for strategies not captured by the new travel models (e.g., vanpool programs).

While the net effect of the additional work is still unknown, based on the initial scenario analyses, the MPO Executive Directors proposed, and the Policy Council adopted, a recommendation to ARB that the five and ten percent reduction targets for 2020 and 2035, respectively, be maintained on an aggregate, valley-wide basis.

ARB staff has reviewed the available data and documentation for these initial scenario results, and will conduct a formal evaluation following ARB's technical methodology in the context of the RTP/SCSs anticipated later this year.

MPO coordination on SCS development

SB 375 provides a unique opportunity to the MPOs in the Valley, allowing two or more of these MPOs the option to work jointly on implementation of its provisions, including development of multiregional goals and policies. Since 2010, the MPOs have been meeting regularly through the Policy Council and its MPO Executive Directors' working group to discuss how they intend to address this statutory option.

The progress report and target recommendation adopted by the Policy Council reflects a commitment by the eight MPOs to continue to coordinate each of their agencies' work on RTP/SCS development and input into ARB's upcoming 2014 target update process.

A coordinated 8-county approach to planning is not new, and over the last few years, the Policy Council has consistently recognized SB 375 implementation as another effort that would benefit from coordination. Under the Policy Council's leadership the MPOs have engaged in a number of SB 375 coordination efforts, including the joint model improvement process.

Moving forward, the MPOs have identified key areas for continued multi-county coordination on SCS development. These include: preparation of the greenhouse gas emissions quantification methodology, development of a valley-wide coordinated SCS chapter, addressing transportation project development where projects straddle multiple counties such as projects relating to State Route 99, ridesharing, and transit services.

Ongoing work efforts

The MPOs are now transitioning into the detailed work of developing their first SCSs. While a significant amount of work has been completed to support implementation of SB 375 so far, the MPOs recognize there is still more work to be done related to the technical tools, interregional travel, plan scenario generation, and public outreach.

Refining the technical tools: In addition to providing initial GHG emissions reduction estimates, the MPOs' work on the initial scenario analyses helped identify needed refinements to their data and new travel models. As part of this process, the MPOs have shared draft copies of three of their travel models with ARB staff, along with supporting supplemental data charts.

Key areas of refinement include population and employment growth forecast data, travel model sensitivity to transit factors, reflection of gateway trips, as well as development of post-processing methods for strategies that cannot be captured by the model. While much of this work will occur on an individual MPO basis, the MPOs are working to coordinate their efforts. For example, MPO staffs are developing common post-processing methods for vanpool, bike, and pedestrian strategies not currently captured by the travel models.

To support these efforts, the MPOs were awarded $400,000 through a Strategic Growth Council Proposition 84 grant, and approximately $150,000 from the Valley Air District, to support refinement of the data used in the new models.

Interregional travel: Accounting for interregional travel, or travel that crosses MPO boundaries, continues to be a key issue for implementation of SB 375 across the state. The issue is especially important when considering the area covered by the MPOs in the Valley, which in aggregate experience a higher proportion of through traffic relative to other regions. To help better account for these effects, Caltrans, ARB and the MPOs across the state, including the MPOs in the Valley, are continuing discussions on

identifying a consistent approach. For the upcoming RTP/SCSs, the MPOs in the Valley will discuss the appropriateness of using the method the other major MPOs used in their SCS determinations versus other alternative methods.

Plan scenario generation: As part of the SCS development process, each of the MPOs in the Valley is working with their local agency partners and other stakeholders to refine RTP/SCS land use and transportation investment strategies. The MPOs have two key ongoing efforts to help inform this process. One focuses on assisting communities with integrating urban and rural sustainable growth principles, referred to as Blueprint and Greenprint principles, into local general plans. Integration of sustainable growth principles into local general plans will be an important policy guide for MPO staff as they develop SCS growth assumptions. In addition, the MPOs in partnership with the Valley Air District have invested in the development of a new county-specific scenario builder tool, called ENVISION Tomorrow. This tool is intended to assist MPO and local agency planners in more easily exploring and quantifying the effects of alternative land use scenarios.

Public outreach: The MPOs are also working on a coordinated public outreach effort for their SCS development processes, using funding received through another Strategic Growth Council Proposition 84 grant. They are working to develop a public outreach strategy, coordinate workshops and develop informational tools and displays to get the public engaged with the new RTP/SCS planning process.

NEXT STEPS

The MPOs anticipate completing the bulk of the RTP/SCS plan development and analyses work this year, with seven of the MPOs anticipating final plan adoption in fall 2013 and one MPO (Kings County) anticipating adoption in 2014.

Review of the First RTP/SCSs in the Valley

In support of the Policy Council recommendation for the MPOs to maintain the five and ten percent reduction targets on an aggregate, valley-wide basis, and the development of RTP/SCS scenarios that meet the targets, ARB staff is committed to continuing close working relationships with the MPOs. Along these lines, ARB staff has initiated an interagency coordination effort with the MPOs and Air District to develop a detailed joint work plan toward meeting future SB 375 and SIP planning requirements in the Valley over the next several years.

APPENDIX A. San Joaquin Valley Regional Planning Agencies' Policy Council Adopted Progress Report and Target Recommendation to ARB

This appendix contains the SB 375 progress report and target recommendation presentation adopted by the San Joaquin Valley Regional Planning Agencies' Policy Council at their December 14, 2012 meeting.

ITEM 3

Memo

TO: San Joaquin Regional Planning Agencies' Policy Council

RE: Draft SB-375 Target Recommendation

ACTION: Recommend the Existing ARB Adopted Valley-wide Targets of 5% in 2020 and 10% in 2035 be Maintained.

RECOMMENDATION:

The San Joaquin Valley Regional Planning Agencies' Directors' Committee recommends to the San Joaquin Valley Regional Planning Agencies' Policy Council the California Air Resources Board (ARB) adopted valley-wide targets of a 5% reduction in greenhouse gas emissions per capita from 2005 by 2020 (5% in 2020) and a 10% reduction in greenhouse gas emissions per capita from 2005 by 2035 (10% in 2035) be maintained. Additional work continues toward the development and adoption of Sustainable Community Strategies by each of the San Joaquin Valley MPOs.

SUMMARY:

In September 2010, the ARB Board took action to establish Senate-Bill 375 (SB-375) targets for the eight metropolitan planning organizations (MPOs) of the San Joaquin Valley. The ARB board action acknowledged the amount of change ARB anticipated over the next two years (2010 to 2012) in data, modeling, and decisions to be made in the Valley and established valley-wide "placeholder" provisional targets of 5% in 2020 and 10% in 2035. The definition of valley-wide target was left ambiguous as part of the September 2010 ARB board action.

The ARB board action also requested a report on expected model improvements in 2012 (anticipated January 2013) and indicated the "placeholder" provisional targets would not be "officially" considered for ARB board action until 2014.

Although no "official" action will be taken by the ARB board in 2012 (anticipated January 2013), the ARB board requested updates on any model improvements, or other information relevant to targets for the eight Valley MPOs; regional target recommendations based on any new modeling and scenario information; and a response to how the eight MPOs intend to address the statutory option to work together to develop one or more multi-county Sustainable Community Strategies.

On November 2, 2012, the San Joaquin Valley Regional Planning Agencies' Directors' Committee took an action to recommend the California Air Resources Board (ARB) adopted valley-wide targets of a 5% reduction in greenhouse gas emissions per capita from 2005 by 2020 (5% in 2020) and a 10% reduction in greenhouse gas emissions per capita from 2005 by 2035 (10% in 2035) be maintained. The vote was 7-0 with one abstention.

In addition to the San Joaquin Valley Regional Planning Agencies' Directors' Committee recommendation, the MPO directors requested the Valley recommendation be presented to the individual MPO boards for concurrence. A summary of the board actions are found below. An update on pending board actions will be provided at the December 14th Policy Council Meeting.

- **SJCOG**: The Board approved the recommendation on November 15, 2012.
- **StanCOG**: Anticipated to provide item to Board on December 12, 2013.
- **Merced**: Anticipated to provide item to Board on December 13, 2012 for information.
- **Madera**: The Board accepted the recommendation on November 14, 2012.
- **Fresno**: The Board approved the staff recommendation that Fresno COG participate in the valley-wide target recommendation, but be liable only for Fresno's individual targets for the 2014 RTP/SCS. The Fresno COG final target numbers are scheduled to be provided to the Board in January 2013.
- **Kings**: The Board approved the recommendation on November 28
- **TCAG**: Anticipated to provide item to Board on December 10, 2012
- **Kern**: anticipated to provide item to Board on January 17, 2013. The Policy Council representatives will be requested to abstain from voting at the December 14, 2012 meeting. An update will be provided before the ARB Board meeting.

This staff report highlights the San Joaquin Valley's response to the September 2010 ARB board action. The San Joaquin Valley MPO response is anticipated to be presented to the ARB board at its regularly scheduled January 2013 meeting.

NEXT STEPS:

- November/December 2012: Individual MPO Board Discussion Item
- December 14, 2012: Anticipated Recommendation to San Joaquin Valley Policy Council
- January 24/25, 2013 San Joaquin Valley SB-375 Update to the California Air Resources Board (ARB)
- 2014/15 Sustainable Community Strategy/Regional Transportation Plan Development

DISCUSSION:

Model Improvement Plan:

In 2010, the eight MPOs in the San Joaquin Valley (SJV) embarked upon an ambitious joint effort to upgrade their land use and travel demand forecasting model systems. This San Joaquin Valley Model Improvement Plan (MIP) was funded by a grant from the Strategic Growth Council of $2.5 million in Proposition 84 money.

This effort was motivated by California Senate Bill 375, which requires each Metropolitan Planning Organization (MPO) in the state to prepare a "Sustainable Communities Strategy" (SCS) that demonstrates how regions will meet greenhouse gas reduction targets set by the California Air Resources Board (ARB) through integrated land use, housing and transportation planning.

This legislation presented especially significant technical challenges for the historically rural and predominantly low-density San Joaquin Valley MPOs. All eight had regional travel-demand models but only two MPO models had mode choice analysis capabilities. None of the MPOs possessed integrated land use and travel behavior simulation models like those under development by MPOs in the Bay Area, Sacramento, and Southern California.

The Strategic Growth Council grant has been used to substantially upgrade all of the Valley's models. By pooling resources and working together on a jointly developed and managed Model Improvement Plan (MIP) the San Joaquin Valley MPOs were able to meet and in several instances substantially exceed the requirements for model improvements mandated by SB 375. New state-of-the-practice trip-based forecasting models have been implemented based upon standardized data and software tools.

In addition to addressing the specific needs of SB 375, model improvements include:

- Streamlined and standardized processes – e.g., knowledge and data bases, model parameters, documentation, graphics, and report formats.
- Enhanced coordination capability – all 8 MPOs can now easily share resources and information relevant to interregional and parallel studies.
- Improved full mode choice models in Kern and Fresno and a new full mode choice model for the Three-County Model covering Merced, Stanislaus and San Joaquin.
- The 8 MPO models were standardized in their design, implementation and documentation. This means that:
    - All models now utilize common data files, attributes, and variable definitions.
    - All models start from a standard set of default values for key parameters (e.g., speed and capacity by facility type.
    - All models share a common script or "computer code" to run the individual models.
    - All models are implemented in the new Voyager 6.0 modeling software. Voyager provides better scenario management and mode choice modeling than previously.
    - All models' technical reports and documentation share the same basic structure.
- New state-of-the-practice trip-based forecasting models have been implemented based upon standardized data and software tools, and include the following improvements:

- Improved trip generation by housing type – For many of the valley models, the new model now calculates the household trip generation using a more sophisticated method accounting for housing type, vehicle availability, income, and household size. This change has made the model significantly more sensitive to changes in future housing mix based on market demand trends.

In sum, the eight MPO models have been upgraded to a much higher standard. They are both more advanced and have more in common with one another than before. The standardization of much modeling practice in the Valley will make collaboration and sharing of information among the MPOs much easier. Collaboration and information sharing in turn will allow for greater compatibility between models in neighboring jurisdictions, and greater understanding of how to meet common modeling challenges.

Although significant work has been completed by the Valley MPOs, it is important to clarify that the MIP models are not "official" at this time. They will continue to be refined through 2013. It is anticipated that the models and validation/calibration report will be officially adopted as part of the 2014 RTP.

Initial Model Improvement Plan greenhouse gas emissions reduction estimates resulting from the San Joaquin Valley target setting efforts are summarized for information below. Although it appears the scenarios and baseline meet the SB-375 targets, the valley MPOs are committed to making investments in projects that move the valley forward toward ambitious SCS scenarios that meet the intent of SB-375. It is important to note, the valley MPOs are still working through SCS/RTP development to find additional greenhouse gas emissions reductions, where possible.

Table 1: Summary San Joaquin Valley Target Setting Alternative Scenario Analysis

(Greenhouse gas (CO2) percent reduction per capita from 2005)

Year	SJCOG	StanCOG	MCAG	MCTC	FresnoCOG	KCAG	TCAG	KernCOG	Valley-Wide
2020	23.3%	19.3%	5.63%	4.72%	4.74%	6.81%	7.48%	5.38%	10.93%
2035	30.08%	17.65%	2.63%	10.30%	7.57%	10.19%	7.69%	11.61%	14.18%

Note: As MIP models are refined, it is possible values contained in this table may change.

Figure 1: 2020 Summary San Joaquin Valley Target Scenario Compared to 5% Target

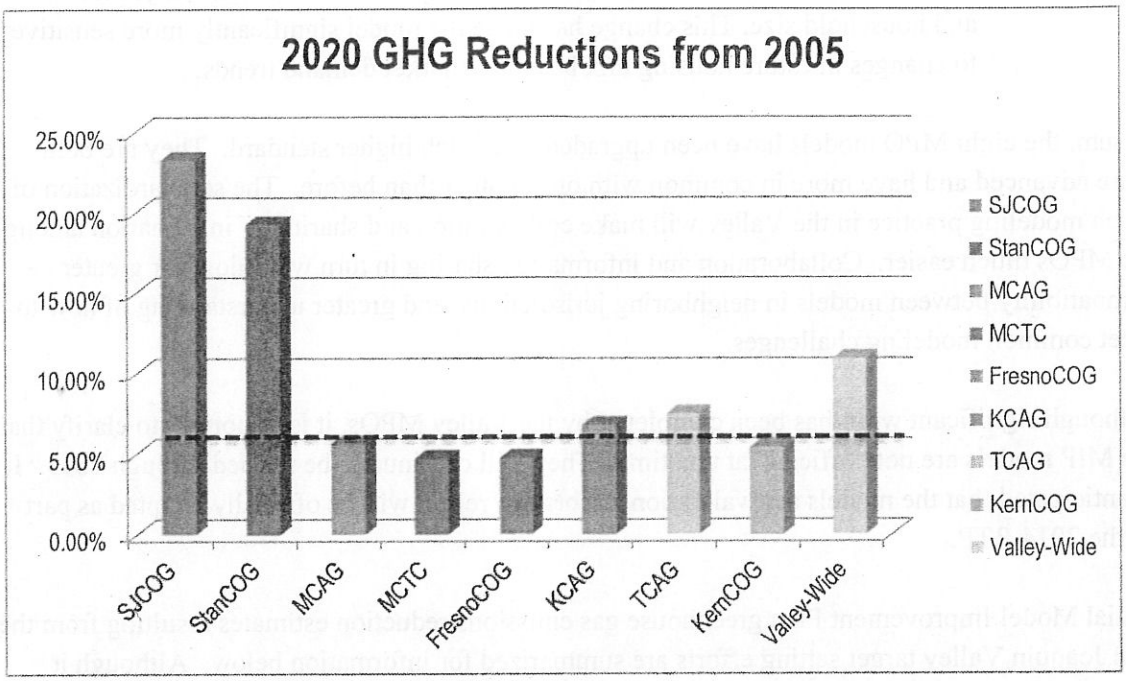
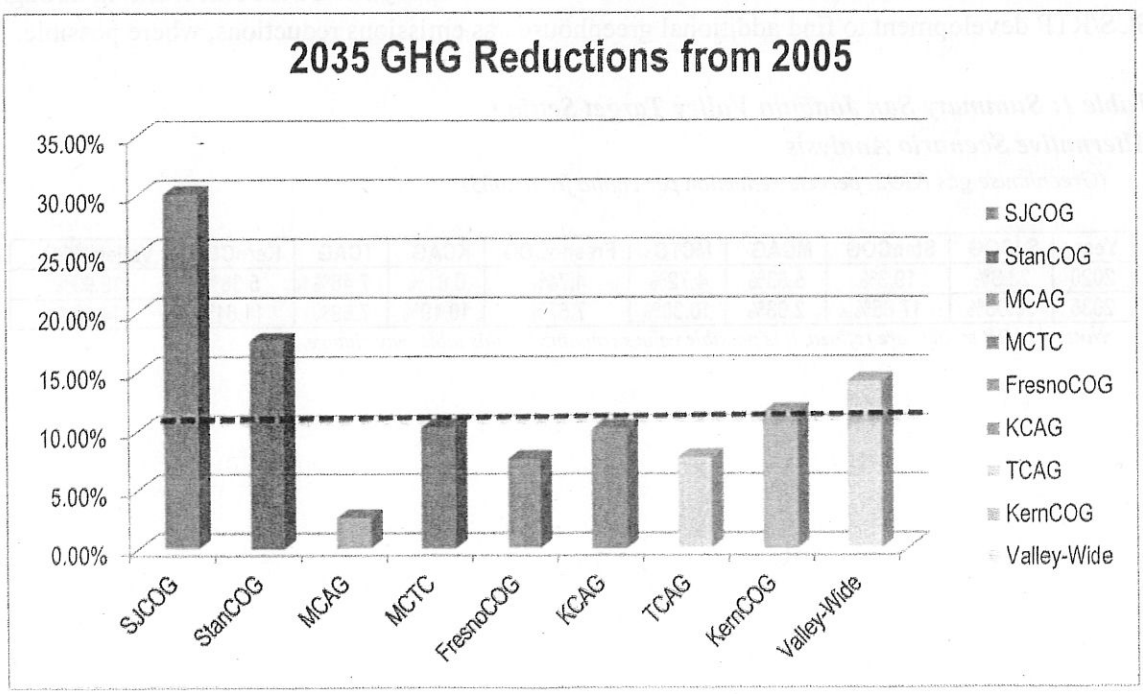


Figure 2: 2035 Summary San Joaquin Valley Target Scenario Compared to 10% Target



For context, 2020 business as usual greenhouse gas emissions reductions per capita from 2005 valley-wide equal 8.63% and 2035 business as usual greenhouse gas emissions reductions per capita from 2005 valley-wide equal 10.26%.

SJV Overview

The San Joaquin Valley MPOs are home to approximately 4 million people and make up the nation's leading agricultural area; stretching over 250 miles from north to south and averaging 80 miles wide. The eight counties encompass over 27,000 square miles and include: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare. The San Joaquin Valley population once projected to reach approximately 7.2 million[1] in 2035 by the California Department of Finance is now anticipated to reach only 6 million[2]; a difference of approximately 1.2 million.

It is important to note, only a portion of Kern County is contained within the San Joaquin Valley. Kern County straddles the Sierra Nevada Mountains and two additional air basins: the Mohave Desert and Indian Wells Valley, which are under the jurisdiction of the Kern County Air Pollution Control District.

Each county varies in land use, population, employment, and travel behavior. Major elements influencing vehicle use vary among counties and seasons and include but are not limited to:

- Job centers or major industries (prisons, agriculture, wind/solar power, etc.); and
- Relationship to other MPO regions such as the Metropolitan Transportation Commission (MTC), the Sacramento Area Council of Governments (SACOG), and the Southern California Association of Governments (SCAG).

As part of the valley target setting update process, each MPO has developed a target setting scenario for 2020 and 2035. The contents of each MPO scenario are summarized below:

San Joaquin Council of Governments (SJCOG): The alternate scenario has its foundation in local agency general plans and Climate Action/Sustainability Action Plans. Regionally average densities of new residential growth increase from approximately 4 units per acre to nearly 7 units per acre. As with the Blueprint process in San Joaquin County, the scenario:

- discourages growth in agricultural and sensitive habitat areas
- focuses growth in potential transit-oriented development areas (infill), and within or directly adjacent to existing city limits, spheres of influence, or existing urbanized areas, with an emphasis on the urban core.

As one may notice in table 1, the San Joaquin Council of Governments GHG emissions reductions appear significant from the 2005 base. The Regional Target Advisory Committee recommended trips without a beginning or end within the MPO region (through trips) be

[1] Projections Prepared by Demographic Research Unit, California Department of Finance, July 2007
[2] Projections Prepared by Demographic Research Unit, California Department of Finance, May 2012

excluded from SB-375 GHG emissions results. In San Joaquin County these trips represent a significant portion of San Joaquin County's total vehicle miles traveled (VMT). In 2005, through trips are estimated to account for approximately 26 percent of all VMT; in 2020, through trips are estimated to account for 31 percent of all VMT; and in 2035, through trips are estimated to account for 32 percent of all VMT. This phenomenon is partially due to the "attractiveness" of the jobs rich Bay Area and Sacramento regions. Through trip estimates within the SJCOG model were developed using the California Statewide model and grow by approximately 85% between the year 2005 and 2040 in San Joaquin County.

Stanislaus Council of Governments (StanCOG): The scenario was based on work completed in 2009: StanCOG staff updated its transportation model and along with it created new land use matrices, constructed an interactive program to account for existing demographic data by community and another interactive program to account for growth separate from the existing 2010 information. Housing and job information was collected from each of the StanCOG jurisdiction's General Plans. Primary focus was paid to planned or anticipated single and multi-family dwelling units from each general plan. Dwelling unit information by acre was accounted for in a short report and then shared with each jurisdiction to validate the numbers. In short, the jurisdictions settled on the number of new and planned single family dwelling units. Finally, in coordination with UCD, the "growth" (not existing) number of new units (single and multi) were adjusted to match dwelling units per acre as agreed upon by the StanCOG policy Board which was 5.9 units per acre. The uncertainty around SB375 implementation at the time and given the fact that StanCOG was in the midst of a large model and demographic update, motivated staff at StanCOG to incorporate the newly generated databases (existing plus growth) based on Blueprint into the regular modeling program as it stands today. In addition, Measure E, another land use control policy affecting unincorporated areas was also established in the land use files.

Merced County Association of Governments (MCAG): the alternate scenario is based on the Blueprint scenario adopted in 2009. In general, it is consistent with adopted local plans, but it discourages growth in agricultural and habitat areas and encourages growth in existing urbanized areas.

The key strategies in this alternate scenario include:

- higher density - average densities of new residential growth increase from 4.8 units per acre to 8.6 units per acre
- infill - the percent of all new growth which is located in existing urbanized areas increases from less than 10% to over 20%

Madera County Transportation Commission (MCTC): MCTC has developed a Hybrid Scenario based upon principles of both the Low and Moderate Change Madera County Blueprint Scenarios.

The Low Change Blueprint Scenario was developed as a variant of status quo prevailing trends. Demand for different housing types would shift slightly towards higher densities, and the lot sizes would reduce by 15-20% for single-family and multi-family parcels. The transportation

infrastructure remains similar to status quo, but an enhanced transit system based upon the existing regional transit network is utilized. Preservation of agricultural lands and environmentally sensitive land are also given more consideration.

The Moderate Change Blueprint Scenario further shifts demand for housing towards higher densities. In addition to the housing shift, it also assumes a change in the distribution of employment from retail to more service and industrial oriented jobs. The transportation infrastructure increases at a city and intercity level. Preservation of agricultural lands and environmentally sensitive lands are given similar consideration to those within the Low Change Scenario.

In the Hybrid Scenario, Low Change Blueprint Scenario principles are utilized in less populated portions of the County and in the City of Chowchilla. Moderate Change Blueprint Scenario principles are applied in the Rio Mesa Planning Area and the City of Madera where higher densities and expanded transit systems are more feasible options.

Fresno Council of Governments (FresnoCOG): It is based on the latest thinking of FresnoCOG's member agencies, primarily the City of Clovis, and the City of Fresno's latest proposed land uses. City of Fresno, which accounts for more than 50% of the county population, proposes a land use development plan that focuses on the existing core areas without expansion of the sphere of influence (SOI) by 2035. Fresno's new land use plan has the new growth distributed along major corridors and activity centers, and has a theme of "complete neighborhood", which means convenient access to different uses at the neighborhood level. FresnoCOG's second largest city, the City of Clovis is planning to achieve an average 9 units per acre in their new planning areas.

Key strategies include:

- Combination of density increase, mixed uses, & infill
- Growth along major corridors and activity centers

Kings County Association of Governments (KCAG): Will be highlighting current policies within each local jurisdiction's General Plans that focus on farmland preservation and directing new growth adjacent to current development within existing cities. Infill and mixed-use development projects within each city will be emphasized. Calculated emission reduction benefits from regional vanpools will be identified. Alternative fuel vehicle fleet and alternative fueling facility expansion to be recognized.

- Infill mixed-use development
- Alternative fuel vehicle projects
- Vanpools
- Bicycle and pedestrian projects
- Enhanced transit service

Tulare County Association of Governments (TCAG): The alternative scenario for SB 375 target setting evaluation was based on the Preferred Growth Scenario Principles of the Tulare County Regional Blueprint final recommendation adopted in May of 2009. The Preferred Growth Scenario directs new urbanization "toward incorporated cities and communities where urban development exists and where comprehensive services and infrastructure are or will be provided." The alternative scenario for target setting explicitly incorporates the following principles of the Preferred (Blueprint) Growth Scenario:

- Increase densities county-wide (for new development) by 25% over the status quo densities
- Maintain urban separators around cities (creating urban patterns better suited to utilize light rail, BRT, and other transit)

Other principles of the Preferred Blueprint Scenario are:

- Establish light rail between cities
- Extend Highway 65 north to Fresno County
- Expand transit throughout the county

Kern Council of Governments (KernCOG): The alternative scenario for emissions target setting evaluation was based on the Principles of the Kern Regional Blueprint adopted in November 2008. The alternative has been updated using the latest planning assumptions identified by the Kern COG Regional Planning Advisory Committee (RPAC) A detailed description of this scenario was circulated to the RPAC on September 5, October 3, and October 31, 2012 and can be found on the RPAC agenda staff report (http://www.kerncog.org/agendas/RPAC/2012/1031/RPAC_4_20121031.pdf). It is important to note that additional model validation work and scenario development is still underway and results will change as the model and alternative are refined. This preliminary alternative features or will soon include the following strategies:

- A land use pattern reflecting recently updated and adopted general plans that include strategic employment center concepts that better tie transportation expenditures to local land use decisions
- Up to 400,000 additional Kern residents with access to high quality transit
- Up to 700 miles of new bike facilities in Kern
- Trip making assumptions that account for more walkable communities being incentivized by the San Joaquin Valley Air District's indirect source review (ISR) rule.
- More than a 300% increase in public vanpools
- 80% increase in small lot, attached and mixed use housing choices base on recent market demand studies and Kern's adopted Blueprint.
- Other alternatives are also under development that may include additional strategies to be analyzed by the model accounted for with well documented off-model adjustments.

WORKING TOGETHER

SB-375 states: "*Two or more of the MPOs for Fresno County, Kern County, Kings County, Madera County, Merced County, San Joaquin County, Stanislaus County, and Tulare County may work together to develop and adopt multi-county goals and policies that may address, interregional land use, transportation, economic, air quality, and climate relationships. The participating Metropolitan Planning Organizations may also develop a multiregional sustainable community strategy, to the extent consistent with federal law, or an alternative planning strategy for adoption by the metropolitan planning organizations.*"

Although SB-375 is a relatively new process, which identifies the ability of the eight MPOs to coordinate efforts, coordination between the eight MPOs is not. In September, 1992 the eight agencies entered into a memorandum of understanding (MOU) to ensure a coordinated regional approach to transportation and air quality planning efforts. Development of the MOU and the ongoing process of coordinated planning have improved an already close working relationship between the eight MPOs. One example of the current eight county coordination efforts is the $2.5 million Prop 84 funded Model Improvement Plan. Collectively the eight counties applied for Prop 84 funding to enhance each of the eight counties' modeling capabilities. As a result of the coordinated application effort, the eight counties were awarded $2.5 million, the largest Prop 84 transportation modeling grant awarded to date. Additional coordinated efforts include plans, programs, traffic and emissions modeling, transportation planning, air quality planning, SR-99 corridor planning (resulting in $1 billion SR-99 bond), and goods movement planning.

The eight MPOs have coordinated their efforts in areas where there is potential for regional benefit such as: the SR-99 business plan, San Joaquin Valley goods movement studies, a coordinated chapter in each MPO's 2011 RTP, the San Joaquin Valley Express Bus Study, intelligent transportation system (ITS) planning, and air quality planning efforts. In recognition of current eight county coordination efforts, each of the MPOs SCS will contain a coordinated chapter/section. This chapter will contain a brief summary of the eight county coordination efforts (similar to the 2011 RTP coordinated chapter) and include multi-MPO SCS strategies and/or goals where there is voluntary participation and individual MPO concurrence to do so.

The eight MPO Executive Directors acknowledge, similar to current eight county planning efforts, there are potential benefits to the coordination of some SCS development efforts[3], but not all. Examples where SCS coordination makes sense for multi-county coordination include, but are not limited to:

- Greenhouse gas emissions quantification methodology

[3] Please note, SCS development efforts should not be construed to mean the adoption of multi-county SCS documents.

- SR-99
- Rideshare
- Cross County Transit Services
- Short Haul Rail
- Transportation Project development (where projects straddle multiple counties, local jurisdictions and MPOs currently coordinate development of multi-county projects)

Consensus building to determine the list of multi-county strategies to be contained in the San Joaquin Valley SCS chapter described above will continue through 2014/15 RTP/SCS development. Please note, these efforts will continue as each subsequent RTP/SCS is developed by each of the Valley MPOs.

In addition, the Valley MPOs have received a 1 million dollar grant through Round 1 of the Proposition 84 --- Sustainable Communities Planning Grant and Incentive Program to assist the smaller communities (population under 50,000) to move toward implementation of the SJV Blueprint and address SB375. The Valley Directors have agreed to invest 19% of this first round funding to SCS (Sustainable Communities Strategy) Outreach; 53% for local government Blueprint Principle Integration into general plans and 28% on a Valley Green-print.

In May 2012, the Strategic Growth Council awarded the Valley MPOs a 1 Million dollar grant for their Proposition 84 Round 2 application. This funding will allow for Green-print Integration into local planning policies and practices; Valley-wide model refinement to complement the valley's Model Improvement Program and will fund Sustainable Communities Strategy (SCS) implementation efforts for the Valley MPOs.

In addition to the Round 2 Proposition 84 funding, the San Joaquin Valley Unified Air Pollution Control District has provided funding to support the San Joaquin Valley MPO modeling licenses in addition to approximately $150,000 to collect additional data to support MIP model refinement moving into the future.

The eight MPOs in the San Joaquin Valley are to develop their first sustainable communities' strategy in their 2014/2015 RTP. As part of the ongoing regional collaboration efforts in the Valley, the eight MPOs in the Valley will be working together to the extent possible on the SCS development.

In concert with the SCS development program, integrating approved Blueprint Principles into general plans will be one of the major focus areas of the Proposition 84, Sustainable Communities Implementation grant. The General Plan is the single most important policy guide for cities and counties. It provides direction for staff reports, planning commission recommendations, and city council and board of supervisors' decisions. Cities and counties are essential partners in the San Joaquin Valley's efforts to implement climate change related mandates.

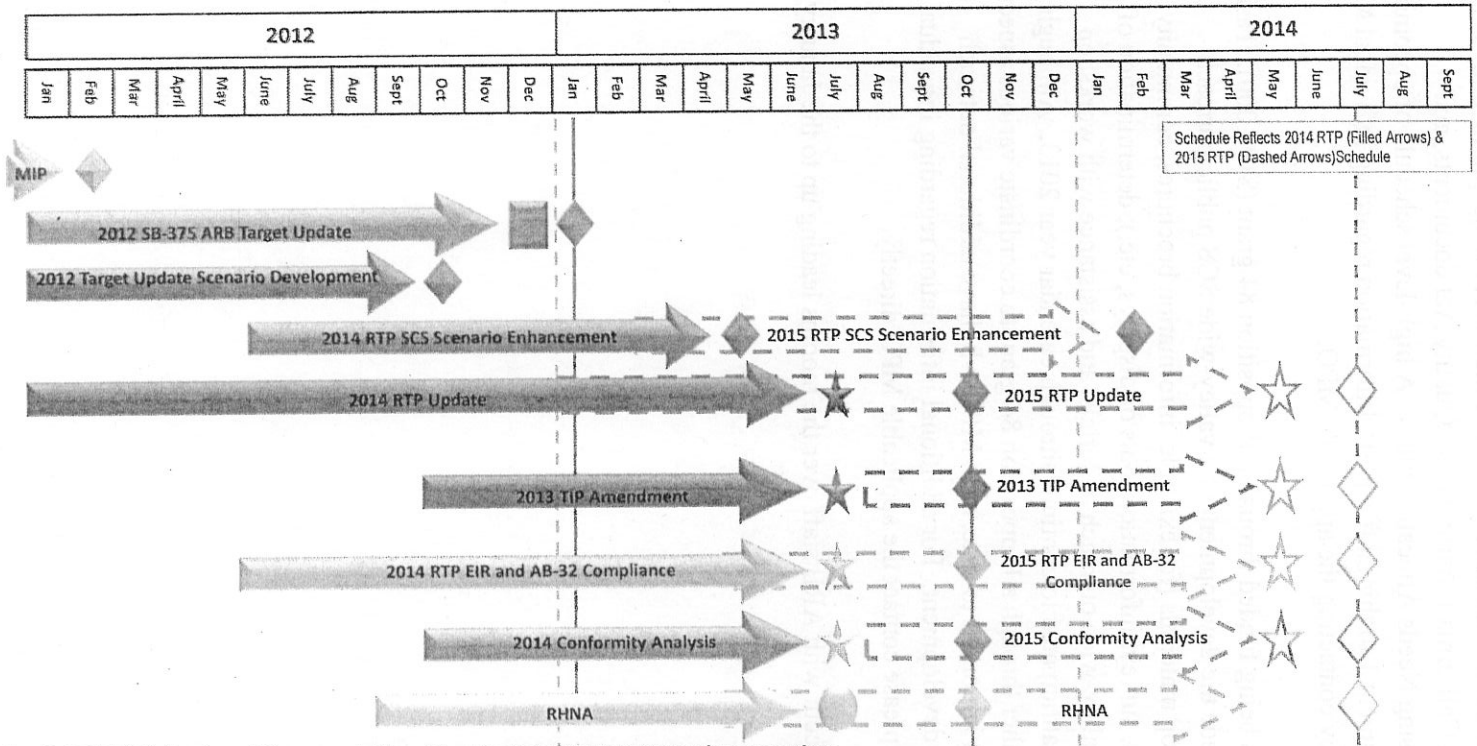
FUTURE EFFORTS

Future efforts for the Valley MPOs include development of their RTP/SCSs, public outreach, development of corresponding California Environmental Quality Act documents, and development of Regional Housing Needs Allocation plans. A high-level schedule of upcoming activities is contained in attachment 1 to this staff report. Information regarding individual MPO schedules should be obtained by contacting the applicable MPO.

Valley-wide public outreach is being funded through a Proposition 84 grant ($190,000). Tasks associated with this grant include the development of a valley-wide SCS public outreach strategy, templates for workshop materials (for example: information brochures, community feedback sheets, press releases, survey, information tools or displays, etc.); determination of which languages to translate valley-wide outreach materials, and assistance with workshop coordination. These tasks are anticipated to continue through calendar year 2013. Although the Valley MPOs have come together through a Proposition 84 grant to coordinate various aspects of SCS/RTP public outreach, it is important to note, each MPO will have additional outreach opportunities for its RTP/SCS development. For additional information regarding individual public outreach opportunities, please contact the applicable MPO directly.

Additional coordination will occur with ARB staff over the months leading up to the January 2013 ARB board meeting.

Attachment 1



Draft 2014/15 Regional Transportation Plan Update & SB-375 Implementation

Model Improvement Program
- $2.5 Million Strategic Growth Council Funding to Update Valley Models to Be More Sensitive for SB-375 Analyses
- Major Tasks Include:
  - Update of 8-county models to address 375
  - Activity Based Models covering FresnoCOG and the 3 Northern Counties
  - Cube Land Use Model Covering Kern County

2012 ARB SB-375 Target Update
- ARB will take updated SJV SB-375 Targets in January 2013
- Major Tasks Include:
  - Scenario Development
  - Status Updates to ARB Staff and Board
  - Workshops and Information Exchange with ARB
  - Relationship Building with ARB staff (upper management) and ARB Board Members

SCS Scenario Development
- Each MPO is Required to Develop an SCS
- ARB Will Permit SJV SB-375 Targets in January 2013
- Major Tasks Include:
  - Scenario Development for 2012 ARB Target Update
  - Scenario Enhancement for 2014/15 RTP
  - Scenario Modeling
  - Public Outreach
  - Final Draft SCS inclusive of Preferred Scenario

2014 RTP
- The 2014 RTP will have a 2040 Horizon Year
- Major Tasks Include:
  - Development of Goals, Objectives and Performance Measures
  - Development of Tier 1 & Tier II Project Lists
  - Update of Revenue Projections, Project Costs, & Fiscal Constraint/VDE
  - Compliance with Federal Transportation Legislation
- Draft Document Release July/August 2013 or May 2014

2013 TIP Update & Amendment

2013 TIP Amendment
- Each MPO will need to Adopt an Amendment with the 2014 RTP Update
- Draft Document Fall/one July/August 2013 or May 2014

2014 RTP EIR & AB-32 Compliance
- All 2014 RTP's Must Comply with the Requirements of CEQA
- The CEQA Documents for the 2014 RTP's will Address AB-32 Requirements
- Major Tasks Include:
  - Hire an EIR Consultant
  - Prepare Initial Study/NOP
  - Develop Draft EIR
  - Draft Document Release July/August 2013 or May 2014
  - Develop Final EIR
  - File NOD

2014 Conformity Analysis
- Major Tasks Include:
  - Horizon Year 2040
  - Transportation Model Updates from MIP
  - Update Analysis & Documentation
  - Release Draft July/August 2013or May 2014

RHNA
- Each COG must develop a Regional Housing Needs Assessment
- SB-375 Synched the RHNA Timeline with the RTP Update Schedule
- Major Tasks Include:
  - HCD/COG Coordination on Regional Housing Needs Determination
  - Development of RHNA Methodology
  - Development of Draft Allocation of RHNA
  - Adopt Final RHNA Consistent with SCS Development Pattern

11/01/2012

Attachment 2: Alternative Scenario Emission Development

Example Reductions - Method C: extract XX only from All Trips / VMT within County

MIP / EMFAC 11 w/ HD Shift / Alternative Scenario

	SJCOG	StanCOG	Merced	Madera (Hybrid)	Fresno (Blueprint Vision)	Kings (Infill Develop)	Tulare (MH Blueprint)	Kern	Valley-Wide
CO2 Emissions Per Capita Per Weekday--EMFAC2011 LDA, LDT1, LDT2, and MDV (Pounds)									
2005	18.0	16.0	12.7	15.5	15.1	10.7	16.8	16.7	15.9
Target A: 5 % per capita from 2005	0.90	0.80	0.64	0.77	0.75	0.53	0.84	0.83	0.80
2020 Target	17.10	15.20	12.10	14.71	14.32	10.13	16.00	15.85	15.13
2020 CO2 emissions/capita	13.8	12.9	12.0	14.8	14.4	9.9	15.6	15.8	14.2
Target B: 10% per capita from 2005	1.80	1.60	1.27	1.55	1.51	1.07	1.68	1.67	1.59
2035 Target	16.20	14.40	11.46	13.94	13.56	9.60	15.16	15.02	14.33
2035 CO2 emissions/capita	12.6	13.2	12.4	13.9	13.9	9.6	15.6	14.7	13.7
Additional Data Requested from Staff:									
change in VMT per capita from 05 to 20	-23.63%	-18.82%	-5.55%	-6.31%	-5.32%	-7.35%	-8.08%	-6.41%	-11.07%
change in VMT per capita from 05 to 35	-33.77%	-18.65%	-6.85%	-11.29%	-8.25%	-10.03%	-9.28%	-12.14%	-15.38%
change in CO2 per capita from 05 to 20	-23.31%	-19.30%	-5.63%	-4.72%	-4.74%	-6.81%	-7.48%	-5.38%	-10.93%
change in CO2 per capita from 05 to 35	-30.08%	-17.65%	-2.63%	-10.30%	-7.57%	-10.19%	-7.69%	-11.61%	-14.18%

SB-375 Target Recommendations

*San Joa*quin Valley Regional Planning Agencies' Policy Council Meeting

December 14, 2012

Presentation Overview

- Recommendation
- Background
- Model Improvement Plan
- Draft Scenario Results (Presented as Information Only and Subject to Change)
- Why are MPO Numbers So Different
- Valley-wide Target
- Implementation
- Next Steps
- MPO Board Actions Summary

Recommendation

- Recommend the Existing ARB Board adopted Valley-Wide SB-375 Targets of 5% in 2020 and 10% in 2035 be maintained.
- The recommendation **does not** include a recommendation for each MPO to pledge to the values identified in Table 1 of the staff report.

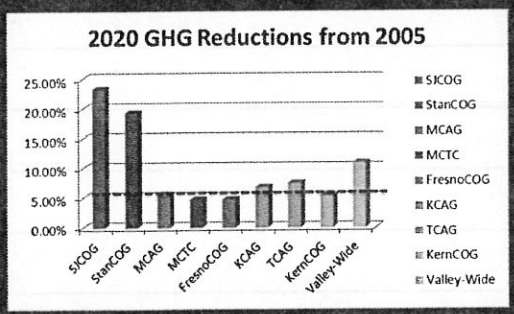
Background

- September 2010 ARB Board Adopted Targets of 5% in 2020 and 10% in 2035
- Requested Valley MPOs Come Back in 2012 to Provide Additional Information
  - Model Improvements
  - "New" Scenario Information (e.g. how do the MPOs plan to reduce GHG emissions)
  - How will the Valley MPOs coordinate efforts

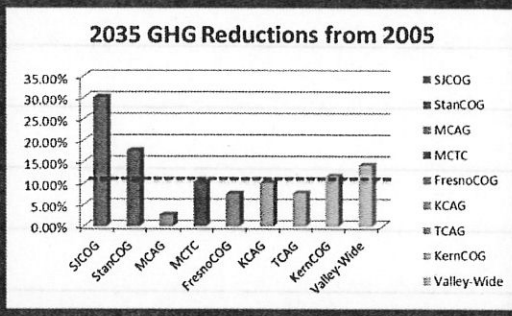
Model Improvement Plan

- Funded Through a $2.5 Million Proposition 84 Grant
- Streamlined and Standardized Valley Modeling Processes
- Enhanced Coordination Capabilities
- MPO Models Have Been Upgraded to Be More Sensitive to SB-375 Strategies

2020 Per Capita GHG Reductions from 2005



2035 Per Capita GHG Reductions from 2005



Why Are MPO Numbers So Different?!!!

- Each MPO's Starting Point is Different
- SJCOG
  - Commuters (Through Trips)
    - SB-375 Allows MPOs to Remove Vehicle Miles Traveled That Do Not Have a Beginning or an End in Their Region
      - For SJCOG this equals 26% of total VMT in 2005; 31% in 2020 and 32% in 2035

Valley-Wide Target

- All 8 MPOs **Do Not** Meet the 2020 and 2035 SB-375 Targets Individually.
  - When Aggregated, the Valley-Wide Scenario Meets 5% in 2020 and 10% in 2035.

Implementation

- Additional Implementation Work is Necessary
- Each MPO is in the Process of Developing It's RTP/SCS
  - Valley-Wide, the 8 MPO RTP/SCSs Will Be Required to Meet The 5% and 10% Valley Target
- Coordination of MPO Efforts is Vital To Success and is Not New to the Valley MPO Process

Next Steps

- Valley Target Recommendation to ARB Board (January 24, 2013 in Bakersfield)
- Development of Valley-wide SCS Coordinated Chapter/Section
- Public Outreach
- Coordination/Information Sharing with ARB
- Development of San Joaquin Valley RTP/SCSs

Next Steps Cont…

- 2014 ARB Target Update
  - ARB Board is Anticipated to Update/Reassess the SB-375 Targets in Calendar Year 2014
  - MPO Targets Should Be Both Ambitious and Achievable

Next Steps Cont…

- Additional Coordination Will Be Required to Develop a 2014 Target Recommendation
- It is Possible the ARB Board May Identify the Existing San Joaquin Valley SB-375 Targets (5% in 2020 and 10% in 2035) as Needing to Be More Ambitious
  - SCS/RTP Development Work is Critical to Informing the Process
- Existing SCAG, SANDAG, SACOG, and MTC Targets are Larger Than Existing San Joaquin Valley Targets **and** Adopted RTP SCSs have Exceeded Targets in Many Cases

SB-375 Targets & Adopted MPO RTP/SCSs

MPO	2020 SB-375 Target	2020 RTP/SCS	2035 SB-375 Target	2035 RTP/SCS
SACOG	7%	**9%**	16%	16%
SCAG	8%	8%	13%	**16%**
SANDAG	7%	**14%**	13%	13%
MTC	7%	TBD	15%	TBD
San Joaquin Valley	5%	TBD	10%	TBD

MPO Board Actions

- **SJCOG** – Board Approved Recommendation
- **MCTC** – Board Approved Recommendation
- **KCAG** – Board Approved Recommendation
- **TCAG** – Board Approved Recommendation
- **FresnoCOG** – Board approved the staff recommendation that Fresno COG participate in the valley-wide target recommendation, but be liable only for Fresno's individual targets for the 2014 RTP/SCS. The Fresno COG final target numbers are scheduled to be provided to the FresnoCOG Board in January 2013.

MPO Board Actions

- **StanCOG** – Anticipated Board Action Dec. 12
- **MCAG** – Anticipated Board Action Dec. 13
- **KCOG** – Anticipated Board Action Jan. 17

Recommendation

- Recommend the Existing ARB Board adopted Valley-Wide SB-375 Targets of 5% in 2020 and 10% in 2035 be maintained.
- The recommendation **does not** include a recommendation for each MPO to pledge to the values identified in Table 1 of the staff report.