

March 13, 2014

## **MTP/SCS Framework: Approach to Creating and Analyzing Scenarios**

Consistent with the Board's direction to focus this MTP/SCS update on implementation issues, the following approach will be used to create and analyze scenarios to inform the 2016 MTP/SCS update. The scenarios developed in this process will be used to illustrate trade-offs and effects of different development patterns and transportation investments compared to the adopted MTP/SCS. In keeping with the implementation themes of the plan update, the scenarios will be used in the following ways: to inform discussions of the Board, stakeholders, member and partner agencies, and public workshop participants on policy issues of the plan update; as alternatives for the environmental impact report; as the basis for making necessary refinements to Scenario 2 (the adopted MTP/SCS).

1. Three scenarios for plan horizon year 2036 will be based on the current plan plus two updated/refined scenarios from last plan cycle.

Discussion: Scenarios should bracket a reasonable range of possible futures, taking into account all major market and policy/regulatory influences. All scenarios are designed to represent reasonable possibilities of what might occur (i.e. not idealized futures driven solely by 1 or 2 considerations to the exclusion of others). The three scenarios analyzed last time met this real world test, and varied principally by how much housing and transportation choice they created. The Scenario (#3) with the most use of a range of transportation modes had the most amounts of new development in Centers and Corridors and Established Communities and attached housing. On the other end, the scenario (#1) with the least use of transportation modes other than the automobile had the most amounts of new development in Developing Communities and Rural Communities and large lot single family housing. The final plan adopted by the Board was most like the scenario in the middle (#2), but it included elements of both Scenarios #1 and #3 based on input from our members, the public and stakeholders and technical analysis. (See attached Table to compare the adopted MTP/SCS with the three scenarios analyzed during that plan's development process.)

For the 2016 MTP/SCS update staff suggests that the existing MTP/SCS be one of the scenarios, with the other 2 scenarios being similar to the first and third Scenarios from the last plan cycle, refreshed and updated to reflect relevant actions and trends that have occurred in the interim. For example, the updated Scenario 1 would have similar amounts of new growth in each of the 4 community types as Scenario 1 from the last plan cycle, but the specific properties forecasted to be developed within each community type would differ based on local government land use approvals since the last plan, market trends, and the intentions and capability of the property owners/developers. Similarly this updated Scenario 1 would have similar amounts of housing growth in the lower density and higher density housing types as Scenario 1 from the last cycle, though they may be located to some extent in different places. A preliminary look at the data leads staff to believe that this approach likely creates sufficient flexibility to ensure that the Plan and EIR documents this cycle analyze a reasonable range of alternatives that might be likely to occur.

While this step will be important, we are trying to keep the level of effort contained so that it is possible to maximize the effort available for Step 2.

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2. Analyze different timing to construction of transportation and land use components of current MTP/SCS.

Discussion: Key components of the Board's December 2013 action focusing this plan cycle on implementation issues were to explore the full potential for a "fix-it-first" investment strategy, and to analyze whether there are reasons to alter the timing that land use and transportation projects in the current plan should be constructed. In other words, even if the end state in 2035 (now 2036) was the same, does it make a difference how (in what order) the region builds the projects that lead to that end condition? Staff has done some very preliminary thinking on this topic and believes that in some areas differences in timing might have a substantial impact on the life cycle costs and benefits of the plan. To illustrate the point at the extremes, there may be significant differences in variables such as total new lane miles, vehicle miles traveled, air pollution and water use from first building the growth forecast in the plan for Rural Communities and Developing Communities versus first building the growth forecast for Centers and Corridors and Established Communities. SACOG has never focused on this type of information when constructing the plan (except to ensure compliance with federal clean air act and SB 375 standards) and staff believes it could really help the Board and stakeholders focus on new policy issues that might improve life cycle plan performance (i.e. even if the end state in 2036 remained substantially the same as the current plan).

3. Analyze different levels and types of transportation revenue

Discussion: Every plan cycle SACOG must refresh its revenue assumptions, consistent with federal requirements that our plan contain "reasonably reliable" revenues. Mainly this involves scrutinizing existing, long-term revenue streams like federal, state and local transportation taxes and local development fees, but within reasonable limits it can also involve new future revenue streams that we forecast to be available in the plan. Staff suggests that this revenue analysis first be focused on the currently adopted MTP/SCS (i.e. will we have the same, more or less revenues to build the projects included in the plan?). Then, if the scenario and timing analyses conducted under #1 and #2 above indicate there may be a need for new revenue (which seems likely), that we analyze the merits and viability of a focused list of new revenue sources. For example, the following new revenue sources are potential candidates for consideration: state cap and trade revenue, new local transportation sales taxes, statewide vehicle registration fee.

4. Prepare draft plan scenario

Discussion: Based on input from public workshops, stakeholders (including our cross-sectoral working group), member and partner staff and Board members over the next several months staff will create by the end of 2014 a framework for a draft preferred scenario for Board consideration that includes both the end state condition in 2036, and a timing sequence for building the transportation network and estimating when development projects will be constructed.

Table A-1. Description of 2012 MTP/SCS Scenarios 1, 2 and 3 (for the planning period 2008-2035)				
	Land Use Inputs	Scenario #1	Scenario #2 (Adopted MTP/SCS)	Scenario #3
1	Share of growth in Center & Corridor Communities <i>(percent of new homes)</i>	19%	30%	36%
2	Share of growth in Established Communities <i>(percent of new homes)</i>	30%	26%	27%
3	Share of growth in Developing Communities <i>(percent of new homes)</i>	46%	42%	35%
4	Share of growth in Rural Residential Communities <i>(percent of new homes)</i>	5%	1%	2%
5	Share of growth in large-lot single-family homes <i>(percent)</i>	39%	28%	25%
6	Share of growth in small-lot, single-family homes <i>(percent)</i>	30%	28%	23%
7	Share of growth in attached homes <i>(percent)</i>	31%	43%	52%
	Transportation Inputs	Scenario #1	Scenario #2 (Adopted MTP/SCS)	Scenario #3
8	New or expanded roads <i>(lane miles, percent increase from 2008)</i>	32%	29%	26%
9	Transit service <i>(Vehicle Service Hours, percent increases from 2008)</i>	54%	98%	127%
10	Funding for transit <i>(\$ in billions)</i>	\$10.7	\$11.3	\$13.7
11	Funding for road, bike and pedestrian maintenance <i>(\$ in billions)</i>	\$10.9	\$11.3	\$11
12	Funding for new road capacity <i>(\$ in billions)</i>	\$8.7	\$7.4	\$6.7
13	Funding for bike and pedestrian street and trail improvements <i>(\$ in billions)</i>	\$2.8	\$3.0	\$3.0
14	Additional miles of bicycle paths, lanes and routes <i>(Class 1, 2 and 3 = 1,700 in 2008)</i>	800	1,100	1,300
15	Funding for Programs <i>(\$ in billions)</i>	\$1.5	\$2.2	\$1.7

Table B-1 (continued) Description of 2012 MTP/SCS Scenarios 1, 2 and 3 (for the planning period 2008-2035)				
	Performance Outcomes	Scenario #1	Scenario #2 (Adopted MTP/SCS)	Scenario #3
16	Square miles of farmland converted to development <i>(4,166 square miles of farmland in 2008)</i>	93	57	50
17	Square miles of vernal pools affected by development	9	7	7
18	Share of new homes near high-frequency transit <i>(percent of new homes)</i>	22%	38%	35%
19	Share of new jobs near high-frequency transit <i>(percent of new jobs)</i>	26%	39%	44%
20	Transit costs recovered by ticket sales <i>(percent)</i>	38%	38%	51%
21	Total homes in environmental justice areas near high-frequency transit <i>(percent of homes, 30% in 2008)</i>	43%	55%	47%
22	Share of trips by transit, bike or walk <i>(percent increase per capita from 2008)</i>	12%	33%	31%
23	Vehicle miles traveled (VMT) <i>(percent change per capital from 2008)</i>	-6%	-6.9%	-9%
24	Vehicle miles traveled in heavy congestion <i>(percent of total VMT)</i>	5%	6%	7%
25	Travel time spent in car per capita <i>(percent change from 2008)</i>	-3%	-4%	-4%
26	Weekday passenger vehicle CO <sub>2</sub> emissions <i>(percent change per capita from 2005)</i>	-14%	-16%	-17%