

## Greenhouse Gas Reduction Options

Policy Options (Additions to Adopted MTP)	Change from 2005 (Per Capita)					
	Horizon Year	Greenhouse Gas Emissions	Vehicle Miles Traveled	Total Transit Trips	Total Bike + Walk Trips	Traffic Congestion
<b>1</b> Adopted MTP (2008)	2020	-4%	-2%	+31%	+6%	-11%
	2035	-13%	-10%	+77%	+14%	-19%
<b>2</b> + Land Uses consistent with Blueprint	2020	-6%	-4%	+53%	+10%	-18%
	2035	-14%	-11%	+91%	+20%	-21%
<b>3</b> + 15% more transit	2020	-4%	-2%	+37%	+6%	-11%
	2035	-13%	-10%	+89%	+14%	-19%
<b>4</b> + Expanded System/Demand Management (e.g., coordinating traffic signals, clearing accidents more quickly, carpooling incentives)	2020	-5%	-3%	+31%	+7%	-11%
	2035	-13%	-10%	+77%	+14%	-19%
<b>5</b> + Pricing (e.g., tolls, vehicle miles traveled charges)	2020	-5%	-3%	+35%	+7%	-11%
	2035	-15%	-12%	+90%	+15%	-20%
<b>6</b> + Land Uses consistent with Blueprint + 15% more transit + Expanded System/Demand Management	2020	-7%	-5%	+60%	+10%	-21%
	2035	-14%	-12%	+103%	+20%	-21%
<b>7</b> + Land Uses consistent with Blueprint + 15% more transit + Expanded System/Demand Management + Pricing	2020	-8%	-6%	+64%	+11%	-22%
	2035	-17%	-14%	+119%	+22%	-23%

Attachment 1  
Description of Greenhouse Gas Reduction Options

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SACOG evaluated seven policy options, in concert with other large metropolitan planning organizations around the state involved in greenhouse gas target setting as required by Senate Bill 375 of 2008.

The most basic option is the adopted MTP for 2035 (*A Creative New Vision for Transportation in the Sacramento Region* , adopted in 2008). The adopted MTP was the first long-range transportation plan which the region developed after the Blueprint process was complete. Six other options are being evaluated, each of which expands and enhances implementation of various policies over-and-above the adopted MTP. The policies are organized into one of four "bundles," as follows:

- Land use measures
- Transportation system development
- Transportation system and demand management
- Transportation pricing

*Option 1* is the currently adopted MTP. In terms of land use measures, the adopted MTP is largely, but not completely, consistent with the Blueprint vision adopted in 2004. In terms of transportation projects, the amount of high-frequency transit service is nearly doubled on a per-capita basis. System and demand management is expanded marginally from current deployment levels, after accounting for population growth. No transportation pricing policies are included in the adopted MTP.

Each of the policy bundles, with the exception of pricing, is represented to some degree in the adopted MTP. The planning options for this analysis are conceptually defined as enhanced implementation of these policy bundles, compared to the levels included in the current MTP. Options 2 through 5 each focus on expanding/enhancing one policy bundle, in addition to currently planned investments.

- *Option 2 (Land Use)* is more consistent with the Blueprint's distribution of new rural residential at two percent of new housing stock. The growth share for single family large lot units is about 30 percent (compared to 36 percent for the MTP), and the combined small-lot-single-family and attached unit share is 68 percent (compared to 61 percent for the MTP). Residential units in Transit Priority Areas accounted for 46 percent of the growth (compared to 36 percent for the MTP).
- *Option 3 (Transit)* expands investment in transit compared to the MTP. As mentioned above, the adopted MTP would nearly double high-frequency transit by 2035, compared to 2005 levels. In this option, transit service is increased by 15 percent, with service expansion focused on the most productive transit corridors.
- *Option 4 (Transportation System/Demand Management)* would expand and enhance the planned investment in transportation systems and demand management in the adopted plan. The adopted MTP includes some expansion of the current employer based programs (primarily marketing, education, and coordination), and growth of the region's Intelligent Transportation System (ITS) and incident management to account for population growth. Option 4 would expand the investment in employer-based programs to include more direct incentives for non-single-occupant vehicle commuting (e.g., transit passes, non-motorized

subsidies, etc.), and provide more resources for ITS and incident management. Additionally, this option would provide some level of public subsidy to establish car-sharing programs in at least 2 communities or employment centers where market demand alone is unlikely to support a private car-sharing venture.

- *Option 5 (Pricing)* would add significant new transportation pricing policies which are not included to any degree in the adopted MTP. Four policies are included: congestion pricing for the regions major freeways, with tolls ranging from \$0.10 to \$0.25 per mile; a general VMT-based charge of \$0.01 to \$0.03 per mile; policy-based increases to off-street parking charges at employment centers; and additional subsidies to transit fares, to reduce out-of-pocket costs for using transit.

Options 6 and 7 look at combining the policy bundles:

- *Option 6* would combine land use measure, transportation projects, and system and demand management; no pricing policies are included.
- *Option 7* would combine all four policy bundles.

Each option is based on enhanced, coordinated implementation of the policy bundle in question, without explicit reference to cost or actual implementation potential, so the analysis results presented here focus on the benefits only and portray the maximum benefits reasonably expected from implementation of the policies. SACOG has coordinated with other large metropolitan planning organizations to ensure some level of consistency and reasonableness in the deployment levels attached to each policy bundle and option, and to estimate reasonable benefits as a result of the implementation of the policy bundles.

As the greenhouse gas target setting process continues, these options will be further analyzed and used in the development of the MTP scenarios. Through the consultation with local agencies in the SACOG region as the MTP and SB375 implementation process progresses, the costs, cost-effectiveness, and implementation potential of the various policies will be detailed and documented by SACOG and local agency staff, and considered by policy makers involved in the MTP process.

## Attachment 2 Land Use & Transportation Characteristics of Options

	Year	Land Use Characteristics	Transportation Characteristics
Base year 2005		33% of residential use in compact range, overall density is 5.7 per acre. 47% of dwellings residents are in Transit Priority Areas.	4% of freeways are HOV lanes, 19% of transit service is high frequency. TSM/TDM deployment is moderate. No car sharing or pricing programs.
1: Adopted MTP2035	2020	Compact residential is 54% of growth. Overall residential density +9%. 34% of residential growth is in Transit Priority Areas.	The HOV lane share of freeways more than doubles, frequent transit service is +22%. TSM/TDM increases with population growth. No car sharing or pricing.
	2035	Compact residential is 61% of growth. 36% of residential growth is in Transit Priority Areas.	Continued modest increase in HOV lanes, frequent transit service is +79%. TSM/TDM increases with population growth. No car sharing or pricing.
2: MTP + Land use enhancements	2020	Compact residential is 61% of growth. 44% of residential growth is in Transit Priority Areas.	No change from Adopted MTP.
	2035	Compact residential is 68% of growth. Overall residential density +18%. 46% of residential growth is in Transit Priority Areas.	No change from Adopted MTP.
3: MTP + Transit enhancements	2020	No density change from Adopted MTP.	Transit service increases 15% from the MTP.
	2035	No density change from Adopted MTP.	Transit service increases 15% from the MTP.
4: MTP + Transportation System and Demand Management enhancements	2020	No change from Adopted MTP.	TSM/TDM grows faster than population growth. Car sharing more widespread than in MTP.
	2035	No change from Adopted MTP.	TSM/TDM grows faster than population growth. Car sharing more widespread than in MTP.
5: MTP + Transportation Pricing	2020	No change from Adopted MTP.	\$0.01/VMT, \$0.10/congested VMT, +25% in employment center parking, 10% transit fare reduction.
	2035	No change from Adopted MTP.	\$0.03/VMT, \$0.25/congested VMT, +50% in employment center parking, 25% transit fare reduction.
6: MTP + Land use, Transit, and TSM/TDM	2020	See option 2.	See options 3 and 4.
	2035	See option 2.	See options 3 and 4.
7: MTP + All enhancements	2020	See option 2.	See options 3, 4, and 5.
	2035	See option 2.	See options 3, 4, and 5.

## Attachment 3 Background on Greenhouse Gas Reduction Options and Targets

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The SACOG Transportation Committee has released for public comment per capita greenhouse gas emissions reductions between 5 percent and 6 percent for 2020 and between 14 percent and 15 percent for 2035 (compared to a 2005 base year).

All of the options presented here are coarser-grained than the scenarios SACOG staff will build over the summer to present in fall workshops.

The full range of savings shown here is between 4 percent and 8 percent for 2020 and 13 percent and 18 percent for 2035. The low end of the range reflects the current MTP. The high end of the range reflects complete implementation of every idea tested in the options. SACOG staff believes that the low end of the range, while obviously meeting the "achievable" part of the California Air Resources Board (CARB) direction, does not meet the "most ambitious" part. Conversely, the high end of the range is plenty ambitious, but staff does not believe meets the "achievable" language. The ranges recommended for 2020 and 2035 would balance both the achievable and ambitious targets, and would provide the SACOG Board with a good deal of flexibility in determining how to meet the targets.

CARB senior staff has signaled to the regions that it prefers to use a range, rather than a single number, for the draft regional targets for 2020 and 2035 that SB375 requires them to release by June 30, 2010. All of the other regional agencies support the notion of using a range at this point and allowing more detailed work over the summer and early fall to inform CARB's final decision on targets by September 30, 2010. This approach fits nicely with the MTP calendar adopted by the Board in April, including more detailed scenario building over the summer, including substantial input from member and partner staff as well as the public. The SACOG Board of Directors will approve the basic framework for those scenarios in June.

The targets may be refined in the coming months for any number of reasons, most obviously: a) additional internal work that the luxury of more time will afford, b) input during the public comment period from our members, partners and stakeholders, and c) ongoing active collaboration with the major regional agencies throughout the state. The Regional Targets Advisory Committee recommendation is that CARB provide a uniform target for all regional agencies.

Even after CARB provides SACOG a final target by September 30 it will not literally be either a floor or a ceiling for what the SACOG Board decides to achieve in the MTP. SB375 provides flexibility for the SACOG Board to develop an "Alternative Planning Scenario" if it determines it is not feasible to meet the target. On the other hand, the SACOG Board could also decide that the statewide target is more modest than it wants to achieve.

**SACOG Greenhouse Gas Reduction Target Principles & Consistency with Proposed Options**

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The information below briefly describes how SACOG staff believes the recommended target ranges are consistent with the target-setting principles the Board adopted last month.

**Principle 1: Commitment to information-based, multi-objective decision-making.**

While SACOG staff have not by any means calculated the full range of metrics that will be addressed in the MTP update, the information presented here does illustrate how these options perform on some of the most critical metrics we have used (e.g., congestion, vehicle miles traveled, transit and walk/bike trips in addition to greenhouse gas emissions). Fortunately, the actions that reduce greenhouse gas emissions are also creating substantial improvements in these other areas, with congestion per capita in particular for the first time showing a decline rather than just a slower increase.

**Principle 2. Use up-to-date forecasts and assumption.**

SACOG staff have used the draft growth projections approved by the SACOG Board for public comment and an updated (and somewhat higher) gas price forecast for all of these model runs. The gas price forecast has been agreed to by all of the major regions in the state.

**Principle 3. Be consistent with Blueprint growth principles.**

The current MTP is largely, though not entirely, consistent with the Blueprint. The lower end of the ranges SACOG staff are recommending for 2020 and 2035 are based on the current MTP. The middle to higher end of the ranges reflects a land use pattern more literally consistent with the Blueprint.

**Principle 4. Be based on reasonable assumptions about funding availability.**

This issue will need further work over the summer. SACOG staff are still updating financial forecast as well as now working directly with federal agencies on how they will apply federal financial constraint requirements in light of SB375.

**Principle 5. Target better performance in 2035 than 2020.**

The recommended ranges are more ambitious for 2035 than 2020.

**Principle 6. Possibly adopt a tiered MTP this cycle, including a "base plan" and a "tiered plan."**

The SACOG Board does not need to decide this until much later, but these options begin the process of building the right foundation for that decision by purposely exploring land use and transportation options that go beyond the currently adopted MTP.