

## CTP 2040 Strategies Matrix - Summary of Strategies and Estimated Impacts on VMT Reduction

	Unit of Measure:	Range of values		VMT Reduction (estimated)		Comments	Evaluation
		Low	High	Low	High		
<b>Pricing</b>							
Road User Charge (RUC)	cost per mile	+9%	+100%	-3%	-23%	9% to 100% increase in auto operating costs; MPO RUCs raised auto operating costs by 5 to 30%	RUC, gas tax and congestion pricing combined into a single fee - called RUC. Doubling auto operating costs through a RUC in 2010 resulted in a statewide reduction of VMT by 24%.  Additional 2040 tests provided consistent results with 2010 sensitivity tests.
Gas Tax	cost per gallon: cost per mile equivalent:	\$ 0.10 < \$ 0.01	\$ 0.15 < \$ 0.01	< 1%	< 1%	Gas tax increase proposals would have a negligible impact. Each 40 cent increase amounts to ~5% increase in auto operating costs.	
Congestion Pricing	cost per mile	\$ 0.10	\$ 0.25	-11%	-27%	Congestion pricing would have a more significant impact on auto operating costs. Question is to extent (All roads? Only congested facilities?) and time (what parts of the day?) these charges are assessed. Direct modeling would be complicated and time consuming to implement.	
<b>Transportation Alternatives</b>							
Telecommute/Work at Home	Reduced GhG	Increased work at home		-0.13%	-0.39%	Source: SACOG	Off model calculation
Carpoolers	Increased number of carpool vehicles	+5% Carpool vehicles		-2.9%		Applied to short and long distance personal models	Off model calculation; Aspiration strategy
Car Sharing	Net 5% increase in adoption rates -- short distance travel	+5% net increase in car sharing (high end)		-0.12%	-1.10%	Low end: SACOG; High end: MTC (Assumes 5% net increase for short dist personal travel w/ 26.9% reduction in VMT per HH)	Off model calculation
<b>Mode Shift</b>							
Transit Service Improvements	Changes in transit service characteristics: Headways, in-vehicle times, out-of-vehicle times & fares .	2x transit service; 2x transit speeds		-6.0%		Doubled transit services, doubled transit speeds, assumes free fares and reduces wait times for transit services. Also assumes HSR fares reduced by 50%	Tested with CSTDM; Still under review - reasonableness checking is on-going
		Free fares					
		Reduced transfer wait times					
Bus Rapid Transit	Ridership change from converting Local Bus Routes to BRT	20% of local buses converted to BRT		0.07% reduction in VMT		Increased ridership from BRT Handbook (TCRP 118). Calculations entail converting change in ridership to mode share to VMT savings	Off model calculation; Working assumptions are utilized.
Expand Bike	Increased bicycle mode shares	% Increase in bike infrastructure (Low)/ 2x bike share (High)		-0.41% -- high estimate		High VMT reduction assumes doubling of mode share, with 50% of new trips from vehicle modes @ 3.03 miles per bike trip. (Revised trip length assumption based on analysis of CHTS)	Evaluated off-model
Expand Pedestrian	Increased pedestrian shares	% Increase in sidewalk improvements (Low)/ 2x walk share (High)		-0.43% -- high estimate		High VMT reduction assumes doubling of mode share, with 50% of new trips from vehicle modes @ 0.55 miles per walk trip. (Revised trip length assumption based on analysis of CHTS)	Evaluated off-model
Carpool Lane Requirements	Increased HOV occupancy requirements	Change 2+ occupancy to 3+		-0.8%		Some countervailing aspects - increased carpool requirements improve HOV lane performance, but may cause some vehicles in mixed flow lanes.	Evaluated off-model as an aspiration strategy
HOV/HOT Lanes	Change to VMT	Added HOV lanes, especially interregional connectors; and in fill missing gaps		TBD	TBD	Impact of this change is not known. Will be tested to assess impacts	To be modeled with CSTDM; ID of proposed locations is needed.
<b>Operational Efficiency</b>							
Incident/Emergency Management	Reduced VMT, GHG	Reduction in VMT		-1.0%		Source: SACOG	Off-model application
Caltrans' (TMS) Master Plan	Reduced VMT, GHG	Reduction in VMT		-1.2%		Source: ARB	Off-model application
ITS/TSM	Reduced VMT, GHG	Reduction in VMT		-0.09%	-0.62%	Source: SACOG	Off-model application
Eco-driving	Reduced fuel consumption	Reduction in fuel consumption.		-0.23%		Source: ARB + Assumes 10% adoption rate statewide	Off-model application