

3d. Auto Operating Cost, Fuel Tax and Mileage-Based Fees

SACOG 2020 Sustainable Community Strategy

Submittal to California Air Resources Board for Technical Review

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Current funding sources for transportation infrastructure are not enough to pay for everything our region wants to build and operate. The gas tax as the primary source of paying for transportation is not sustainable in a future where electric and hybrid vehicles are commonplace. And under federal law, SACOG's SCS is required to identify reasonably foreseeable revenues available to fund the planned transportation system. Without an obvious federal or state replacement to the gas tax available today, the SCS, as part of the MTP, is the appropriate place to envision and plan for future transportation revenue sources. In SCS3, the region is finding innovative ways to finance building and maintaining our transportation infrastructure in both the near and long term. To meet this challenge, the region is pursuing two types of roadways pricing – facility-based tolling (e.g., managed/express lanes) and pay-as-you-go (PayGo) fees based on mileage driven as a replacement to the fuel tax. The roadways pricing mechanisms in the MTP/SCS are critical component of the regional strategy to 1) raise enough revenue to fund our transportation infrastructure, 2) provide mobility benefits to residents, 3) manage traffic, and 4) help achieve the region's SB 375 GHG target. As the fuel tax diminishes in purchasing power and the state and federal governments look at pricing options to replace it, our region is committed to figuring out how roadway pricing can replace fuel taxes as a primary source of transportation funding. Policies 9, 11, 12, 13, 14, 15, and 16 guide the way pricing is represented in the modeling of SCS3.

The calculation of overall auto operating costs (AOC) was described in detail in the submitted SACOG "Technical Methodology to Estimate GHG Emissions" (TMEGE). This calculation was intended to forecast total auto operating costs, inclusive of fuel, tires and maintenance on a per-mile-traveled basis. The fuel portion of the cost calculation is much more complicated for the SACOG 2020 SCS, due to several factors:

- Passage of SB1 and the subsequent failure of the rescission vote, adding 12 cents to the California motor vehicle fuel tax starting in 2018, plus the indexing of the tax to inflation
- Initial study of a road use charge (RUC) by Caltrans as well as other state DOTs
- Policies adopted by SACOG to support transition from motor vehicle fuel tax to a sustainable option for generating revenues for maintenance and development of the transportation system, such as a RUC or mileage-based user fee (MBUF).
- Unlikelihood in the foreseeable future of any significant change to the federal motor vehicle tax, which has remained constant at 18 cents per gallon since 1993, without adjustment for either inflation or vehicle efficiency.

RUCs and MBUFs affect calculation of auto operating costs per mile differently than motor vehicle fuel taxes, because the unit charge (miles driven) is not affected by the miles-per-gallon (MPG) of vehicles using the transportation system. For this reason, SACOG broke out the AOC shown in the TMEGE into

- 1) Variable real costs (fuel minus taxes and fees, tires, vehicle maintenance) on a per mile basis
- 2) Federal fuel tax (18 cents per gallon).
- 3) State fuel taxes (30 cents per gallon in excise taxes, indexed to inflation over time, plus an estimate of 16 cents per gallon in other variable excise taxes for a total of 46 cents per gallon)
- 4) **Future state RUCs (unknown amount, but ranging from 1.2 to 2.3 cents per mile)**
- 5) **Future regional RUCs (unknown amount, but ranging from 0.7 to 2.3 cents per mile).**

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For purposes of developing SACOGs 2020 SCS, the following scenarios were created:

Scenario 1: 2035 *“Business as Usual” or “Do Nothing”*

- Assumes new RUCs or MBUFs
- Assumes federal fuel tax continues to be eroded by both inflation and by increasing vehicle MPG—0.3 cents per mile (down from 0.7 cents in 2018).
- Assumes state fuel taxes continue on with SB1 changes (i.e. + 12 cents on excise tax, indexing of the excise tax, and constant variable excise tax), with fuel taxes on a per-mile basis eroded by increasing vehicle MPG, but not by inflation.

Scenario 2: 2035 *State Trendline RUC + Regional MBUF*

- Federal fuel tax assumptions the same as Scenario 1--
- Assumes state transitions from fuel tax to RUC by 2035, but RUC set to the effective fuel tax per mile in 2035 (i.e. eroded by increasing MPG)—1.2 cents per mile.
- Assumes regional MBUF of 2.3 cents per mile to a) make up for overall declines in federal fuel tax and state RUC on a per mile basis compared to 2018 reference case; and b) generate additional revenue compared to 2018, for SOGR and VMT reduction.
- Assumes average effective AOC (combining fuel, maintenance, tires, and all taxes and fees) increase of 2.3 cents per mile, compared to Scenario 1.

Scenario 3: 2035 *State Revenue-Neutral RUC + Regional MBUF*

- Assumes state transitions from fuel tax to RUC by 2035, but RUC set to the effective fuel tax per mile in 2018 (i.e. without erosion by increasing vehicle MPG)—1.9 cents per mile.
- Federal fuel tax assumptions the same as Scenario 1—0.3 cents per mile.
- Assumes regional MBUF of 1.6 cents per mile to a) make up for overall declines in federal fuel tax and state RUC on a per mile basis compared to 2018 reference case; and b) generate additional revenue compared to 2018, for SOGR and VMT reduction.
- Assumes average effective AOC (combining fuel, maintenance, tires, and all taxes and fees) increase of 2.4 cents per mile, compared to Scenario 1.

Scenario 4: 2035 State *& Federal* Revenue-Neutral RUC + Regional MBUF

- Assumes state transitions from fuel tax to RUC by 2035, but RUC set to the effective fuel tax per mile in 2018 and offsetting the loss of federal fuel tax revenue relative to 2018 (i.e. without erosion by increasing vehicle MPG)—2.3 cents per mile.
- Federal fuel tax assumptions the same as Scenario 1—0.3 cents per mile.
- Assumes regional MBUF of 1.2 cents per mile to a) make up for overall declines in federal fuel tax and state RUC on a per mile basis compared to 2018 reference case; and b) generate additional revenue compared to 2018, for SOGR and VMT reduction.
- Assumes average effective AOC (combining fuel, maintenance, tires, and all taxes and fees) increase of 2.4 cents per mile, compared to Scenario 1.

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Scenario 5: 2035 State Revenue-Neutral RUC + Regional MBUF, *accounting for “Rebound Effect”*

- Assumes state transitions from fuel tax to RUC by 2035, but RUC set to the effective fuel tax per mile in 2018 (i.e. without erosion by increasing vehicle MPG)—1.9 cents per mile.
- Federal fuel tax assumptions the same as Scenario 1—0.3 cents per mile.
- Assumes regional MBUF of 0.7 cents per mile to a) make up for overall declines in federal fuel tax and state RUC on a per mile basis compared to 2018 reference case; and b) generate additional revenue compared to 2018, for SOGR and VMT reduction.
- Accounts for the differential rebound effect of increasing vehicle MPG by including a “perceived cost” to offset the rebound—2.0 cents per mile.
- Assumes average effective AOC (combining fuel, maintenance, tires, and all taxes and fees) increase of 1.4 cents per mile, compared to Scenario 1. However, the perceived AOC increase is higher—3.4 cents per mile.

For purposes of modeling the 2020 SCS, SACOG used Scenario 2. However, Scenarios 3 and 4 are also possible, and would result in similar GHG reduction benefits. Scenario 5 would result in greater GHG reduction benefits.

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Fuel Tax, Mileage-Based User Fee and Auto Operating Cost Scenarios Considered

#	Year/Scenario	Fuel + Maint	Fed. Fuel Tax	State Fuel Tax	CA MBUF	SACOG MBUF	Re- bound Adj.	Total AOC	Total Taxes & Fees (\$/mi)
BY 1	2005 SB 375 Target Base Year	\$0.180	\$0.011	\$0.031				\$0.222	\$0.042
BY 2	2016 SCS Base Year	\$0.164	\$0.008	\$0.015				\$0.186	\$0.023
BY 3	2018--SB1 Reference Year	\$0.191	\$0.007	\$0.019				\$0.217	\$0.026
1	2035 Baseline	\$0.234	\$0.003	\$0.012				\$0.249	\$0.015
2	2035 "State Trendline MBUF" + SCS Add on	\$0.234	\$0.003		\$0.012	\$0.023		\$0.272	\$0.038
3	2035 "State RN MBUF" + SCS Add-On	\$0.234	\$0.003		\$0.019	\$0.016		\$0.272	\$0.038
4	2035 "State+Fed RN MBUF" + SCS Add-On	\$0.234	\$0.003		\$0.023	\$0.012		\$0.272	\$0.038
5	2035 SCS + Reb	\$0.234	\$0.003		\$0.019	\$0.007	\$0.020	\$0.263	\$0.029

Source: SACOG, March 2020.

Green shaded is the modeled scenario for the SCS target achievement.