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MEMORANDUM

TO: California Air Resources Board

FROM: Brian Lasagna, Regional Analyst
Butte County Association of Governments (BCAG)

DATE: September 2, 2016

SUBJECT: Documentation for BCAG's Year 2035 Passenger Vehicle Greenhouse Gas (GHG) Reduction Target Recommendation

Background

In 2008, Senate Bill 375 (SB 375) was passed as the mechanism to implement passenger vehicle GHG reductions outlined in Assembly Bill 32 (AB 32). Under SB 375, BCAG is required by the state to prepare the region's Sustainable Communities Strategy (SCS) as an additional component of the Regional Transportation Plan (RTP). The SCS demonstrates the integration of land use, housing, and transportation for the purpose of reducing GHG emissions from passenger vehicles and meeting targets established by ARB.

In 2010, ARB set GHG targets for the BCAG region from passenger vehicles as a 1% increase from 2005 emissions levels by 2020 and 2035. The targets apply to the BCAG region as a whole for passenger vehicles emissions, and not to individual cities or sub-regions.

BCAG's 2012 RTP/SCS achieved a 2% reduction in per capita GHG emissions for the years 2020 and 2035. In order to achieve these reductions, BCAG focused its 2012 efforts towards land use by bringing together the recently completed general plans and laying out a pattern of development which balanced housing and employment growth within specified growth areas while protecting habitat and open space via consistency with the Butte Regional Conservation Plan.

ARB notified BCAG that passenger vehicle GHG reduction targets would be revised in 2016/2017 and solicited recommendations regarding a possible new target for the year 2035. In July 2016, BCAG staff recommended a -7% target for the year 2035 based on work being completed for the draft 2016 RTP/SCS. This recommendation was reviewed with BCAG's various advisory committees and the BCAG Board of Director's. Information

contained in this memorandum is intended to provide additional details regarding that recommendation.

Draft 2016 RTP/SCS

In mid-August 2016, BCAG released the draft 2016 RTP/SCS. The 2016 RTP/SCS expands on the efforts of the 2012 plan by integrating BCAG's new Long-Range Transit and Non-Motorized Plan and incorporating the latest regional growth forecasts. BCAG's target recommendation for the year 2035 is based on the draft 2016 RTP/SCS, which is the most up-to-date information regarding future travel in the region.

The draft 2016 RTP/SCS includes an update of the 2012 RTP/SCS land use forecasts preferred "balanced" scenario. The forecast was updated with the latest local general plan, project specific, and school enrollment information. The latest growth forecasts for population, housing, and employment were then applied. The result of the updated land use forecast for the draft 2016 RTP/SCS is very similar to what was included for the 2012 plan, in that the overall land use pattern is unchanged. However, the amount of growth being distributed within that pattern has decreased in comparison to the 2012 plan.

In an effort to better capture the land use and transportation strategies contained in the RTP/SCS's preferred scenario, BCAG improved and made several changes to the technical factors and modeling data within the forecasting models. These improvements account for the changes in terms of modeling output, such as reduced vehicle miles of travel (VMT) in comparison to the 2012 plan. Modeling changes include updated socio-economic data, application of the revised growth forecasts to the land use and transportation networks, implementing an auto operating cost sensitivity, improving the application of occupancy adjustments, incorporating state estimates of school enrollment, as well as revising the trip generation and distribution components.

A complete copy of the draft 2016 RTP/SCS, and the associated modeling information, is available online (<http://www.bcag.org/Planning/RTP--SCS/index.html>).

Basic Assumptions

Included in the table below is a comparison of the basic assumptions between the 2012 and 2016 RTP/SCS. Population, housing, and employment have decreased 7%-8%, which is consistent with updated California Department of Finance (DOF) projections. A significant change can be seen with the decrease of forecasted K-12 student populations. This change is reflective of the revised forecasting which now utilizes DOF estimates. Past methods of forecasting student populations assumed growth rates equal to population.

	SB 375 Base Year	2012 RTP/SCS (Adopted)	2016 RTP/SCS (Draft)	Difference (new-old)	Percent Change
	2005	2035			
Basic Assumptions					
Population	214,582	332,459	306,598	-25,861	-7.8%
Housing	85,478	143,948	133,266	-10,682	-7.4%
Jobs (Non-Farm)	73,400	112,279	103,948	-8,331	-7.4%
K-12 Students	30,782	49,409	29,521	-19,888	-40.3%

Auto Operating Costs

With the draft 2016 RTP/SCS, BCAG chose to implement an auto operating cost sensitivity to the modeling for the purpose of improving the estimates of future travel on the transportation system. Auto operating costs include fuel price, maintenance costs, and tire replacement costs. For the BCAG model, an elasticity of -0.15 was chosen. This indicates that an increase in auto operating costs of 10 percent would result in a 0.015 percent decline in VMT. Included in the table below are the costs included in the latest model and applied to the draft 2016 RTP/SCS.

BCAG Auto Operating Costs	
Year	Cost
2014	\$ 0.246
2020	\$ 0.256
2040	\$ 0.290

Draft Modeling Results

The modeling results for the draft 2016 RTP/SCS estimate a passenger vehicle GHG emission reductions of 7% for the year 2035 from the 2005 base year. In comparison, the 2012 RTP/SCS achieved an emissions reduction of 2% for the year 2035, when adopted. The table below contains a comparison of the basic modeling results for each plan.

	SB 375 Base Year	2012 RTP/SCS (Adopted)	2016 RTP/SCS (Draft)	Difference (new-old)	Percent Change
	2005	2035			
Modeling Results					
Vehicle Miles of Travel (VMT)	4,710,611	7,340,413	6,381,502	-958,911	-13.1%
VMT per Capita	21.95	22.08	20.81	-1.27	-5.7%
CO2 per Capita (lbs/day) EMFAC 2007	18.45	18.09	-	-	-
% Change from 2005	-	-1.9%	-	-	-
CO2 per Capita (lbs/day) EMFAC 2014	17.39	17.21	16.25	-0.96	-5.6%
% Change from 2005	-	-1.0%	-6.6%	-	-

Note: Information presented contains adjustments to VMT and CO2 as include in *BCAG Modification of ARB EMFAC Methodology to Calculate CO2 Adjustment to EMFAC Output for SB 375 Target Demonstrations Draft (4/1/2016)*.

As noted earlier, the modeling improvements combined with the reduced amount of forecasted growth in the region can be attributed to the greater reductions in VMT and greenhouse gas (GHG) emissions associated with the draft 2016 RTP/SCS.

As the 2016 RTP/SCS is still in a draft format, a complete analysis of each modeling factor has not yet been completed. It's anticipated this work will be accomplished in the following months in preparation of ARB's evaluation of the modeling work.

Please feel free to contact me with any questions of comments regarding the information provided in the memorandum. I may be contacted by phone at 530-809-4616 or by email at blasagna@bcag.org.

Sincerely



Brian Lasagna
Regional Analyst



BCAG BOARD OF DIRECTORS

Item #6 Information

July 28, 2016

CALIFORNIA AIR RESOURCES BOARD PASSENGER VEHICLE GREENHOUSE GAS REDUCTION TARGET – BCAG YEAR 2035 RECOMMENDATION

PREPARED BY: Brian Lasagna, Regional Analyst

ISSUE: Senate Bill (SB) 375 requires BCAG's Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) to meet passenger vehicle greenhouse (GHG) reduction targets set by the California Air Resources Board (ARB). ARB is required to update the GHG targets no later than every 8 years. ARB first set targets for the region in 2010 and intends to update these targets in 2016.

DISCUSSION: In 2008, SB 375 was passed as the mechanism to implement passenger vehicle GHG reductions outlined in Assembly Bill 32 (AB 32). Under SB 375, BCAG is required by the state to prepare the region's SCS as an additional component of the RTP. The SCS demonstrates the integration of land use, housing, and transportation for the purpose of reducing GHG emissions from passenger vehicles and meeting reduction targets established by ARB.

In 2010, ARB set GHG reduction targets for the BCAG region from passenger vehicles as a 1% increase from 2005 emissions levels by 2020 and 2035. The targets apply to the BCAG region as a whole for passenger vehicles emissions, and not to individual cities or sub-regions.

ARB has formally notified all Metropolitan Planning Organizations (MPOs), such as BCAG, that passenger vehicle GHG reduction targets will be revised in 2016 and has solicited recommendations regarding a possible new target for the year 2035. Based on work being completed for the 2016 RTP/SCS, BCAG staff recommends a -7% target for the year 2035. A -7% target recommendation would meet ARB's mandate to establish an ambitious but achievable target given the state's goal of reducing statewide GHG emissions to 40% below 1990 levels by the year 2030 (Executive Order B-30-15) and BCAG's previous target of +1%.

BCAG staff has reviewed the proposed target with the Transportation Advisory Committee and Planning Director's Group. Once submitted, the recommendation will be reviewed and evaluated by ARB staff and included in a draft proposal to the ARB. It is anticipated that ARB will take action on the new targets by the end of 2016. Once new targets are approved by ARB, they would apply to BCAG's 2020 RTP/SCS.

