

Summary of revised analysis performed for ARB data submittal April 26, 2023 – Kern Council of Governments

May 5, 2023

Background

On November 29, 2022 – Kern COG submitted to the California Air Resources Board (ARB) the technical methodology data package in accordance with ARB guidelines. ARB staff provided a completion review in January 2023 listing clarifying questions for the data submittal. Since January, Kern COG staff has continued to work in coordination with ARB staff to provide additional documentation and clarifications. Based on multiple coordination calls between ARB and Kern COG staff, Kern COG has prepared additional analysis showing how the 2022 RTP/SCS can achieve the SB 375 GHG reduction targets if implemented using a 2nd requested methodology.

Summary of Changes from initial data submittal to ARB on November 29, 2022

Typographical Level Technical Corrections:

Through correspondence with ARB, Kern COG provided several clarifications to the original data submitted. Some clarifications were: typographic; defining measurement units; switching measurement units; and other misc. clarifications of the data.

Induced Travel Analysis:

At the request of ARB Kern COG performed an induced travel analysis using a Hybrid NCST Calculator approach as suggested by ARB staff. Part of this method used roadway classification from the NCST calculator based on Caltrans Road Network Classifications. The NCST tool's 2019 base year data shows Kern COG has 2,619 lanes miles of Class 1, 2 & 3 facilities. This is lower than the 7,251 base year lanes miles coded as Class 1, 2, & 3 by the Kern COG Regional Travel Demand Model (RTDM). Kern COG performed a GIS analysis to select road classifications matching those used in NCST calculator (see section: Reclassifications and Network Revisions).

This methodology looks at RTDM sensitivity of induced travel in the base year and isolates changes in the network from land use changes to determine an induced travel elasticity accounted for in the short term by the RTDM. Through further correspondence with ARB, Kern COG included the previous land use and RTDM feedback analysis, which does not isolate changes in the network from changes in land use. The average of the two elasticities (0.435) was used in the Hybrid NCST calculator method. This falls between the elasticities of 0.3-0.6 identified through empirical research as occurring in

the short term from capacity projects.¹ Further details on this methodology were submitted to ARB in the NCST calculator spreadsheet as part of the April 2023 data submittal.

Reclassifications and Network Revisions:

A GIS analysis was performed using the Caltrans Road Network Classifications to identify the Class 1, 2, & 3 facilities to be used in the NCST tool. During the GIS analysis, Kern COG identified additional lane miles included in 2035 RTDM network that would not be reasonable to include under the growth assumptions in the RTP/SCS. Many of these lanes showed no traffic volume as they were arterials and collectors leading to vacant/undeveloped land in 2035. Kern COG performed a second GIS analysis overlaying RTP/SCS growth with the road network to identify any road segments that were not reasonable to be built by 2035. Kern COG then compared the RTP/SCS project list to ensure that the lane miles being removed were not part of the project list in the RTP/SCS. None were, so no change to the constrained RTP/SCS project list is required. Kern COG provided a data file to ARB documenting these revisions in April 2023 and it has been included in the ARB submittal data.

Off-model Analysis:

Kern COG identified expanding existing strategies in the following areas to further achieve GHG reductions. It is important to note that the RTP/SCS Off-model Calculation Spreadsheet provided in consultation with ARB is not included in the RTP/SCS. The SCS only contains a listing of off-model adjustment strategies and since the following commitments are expanding those existing strategy efforts, they do not trigger any changes to the adopted SCS. The following 3 strategies are being expanded as follows:

1. **Expand Telework & Vanpool Promotion Through CMAQ Funding** – Telework, vanpool and other TDM promotional efforts currently funded by CMAQ through Kern COG’s Commute Kern program will be increased to more than \$350k per year beginning in FY 24/25. In addition, the effort will be enhanced by partnership with the local air district(s) promotional efforts and include the addition of a Telework Week promotional outreach event. **Additional Supportive Action/Documentation**—A copy of the CMAQ application is provided in the May 5, 2023 letter to ARB. The CMAQ application requested the funding increasing by \$100k over the FY 21/22 to \$350k to promote increased telework and vanpooling at levels consistent with the statistically valid Godbe Community Survey (see the Off-model Reductions Calculation spreadsheet developed by ARB for the SJV COGs).
2. **Expand Complete Streets Efforts Through General Sales Tax Funding** – The City of Bakersfield voters recently approved the Public Safety & Vital Services (PSVS) 1% general sales tax increase. \$30M is proposed in FY 23/24 for reliable infrastructure projects including complete street strategies such as road diets and safer bike facilities. The City is implementing the Multi-Modal Demonstration

¹ Noland, R.B. (2001). Relationships between highway capacity and induced vehicle travel. Transportation Research. <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=ffe35fa338974007e389db56e54fbb92e0dbe14f>

Projects though the PSVS funding which includes complete street road diet projects which will help to further slow the growth of vehicle lane miles and vehicle miles traveled (see Kern's Induced Travel Hybrid NCST Calculation). **Additional Supportive Action/Documentation**—A copy of the City of Bakersfield PSVS proposed budget is provided in the May 5, 2023 letter to ARB. The PSVS proposed budget for FY 23/24 includes \$30M for reliable infrastructure. According to the National Association of City Transportation Officials (NACTO) 2016 report, high quality bike facilities increase ridership by 21-171%.² Kern COG conservatively assumes this new additional investment will only result in a 5% increase above previous estimate of 10% to avoid potential double counting of the effects of complete streets infrastructure already in the SCS. (see the Off-model Reductions Calculation spreadsheet developed by ARB for the SJV COGs and see the tab on bicycle & pedestrian data).

3. **Expand Discount/Free Transit Fares Through LCTOP** – Golden Empire Transit (GET) recently began using Low Carbon Transit Operation Program (LCTOP) Cap & Trade funding to offer free rides to students on their fixed route transit services. The program is in addition to reduced elderly and disabled fares currently in place for all transit providers and already taken credit for in the SCS. **Additional Supportive Action/Documentation**—GET “Free Rides for Students” program is promoted on the website.³ No additional off model adjustments were made to the SCS for this promotional transit strategy to avoid any potential double counting with the existing reduced transit fare programs.

Each of these strategies were prepared and submitted to ARB in the original data submittal of November 29, 2022. The expanded efforts are documented in the letter dated May 5th, 2023, as part of a staff report and board action for the May 18, 2023 Kern COG Board meeting. Data and calculations of the off-model adjustments were resubmitted to ARB with these expanded efforts on April 25, 2023; see: Off-model Reductions Calculation spreadsheet in ARB Data Submittal.

Conclusions

The expanded existing commitments, typographic technical corrections, and additional analysis provided demonstrate that Kern COG's 2022 RTP/SCS, if implemented will meet the GHG reduction targets. Note that further research is needed to refine induced travel elasticity affects in largely rural areas like Kern. Kern COG is participating with the Caltrans Rural Counties Coalition on a consulting contract to analyze the effects of long term induced demand in low congested rural areas.

² NACTO. *Equitable Bike Share Means Building Better Places for People to Ride*. <https://nacto.org/2016/07/20/high-quality-bike-facilities-increase-ridership-make-biking-safer/> . 2016.

³ <https://www.getbus.org/studentrides/>