

Greenhouse Gas Emissions and Vehicle Miles Traveled: Overview of State Requirements and SANDAG Modeling Tools

Overview

The 2021 Regional Plan must comply with both state greenhouse gas (GHG) emissions reduction targets and federal air quality conformity requirements. As the region's transportation planning agency, SANDAG uses models to determine the impact of infrastructure improvements and growth on the region's ability to meet these state and federal standards.

Key Considerations

California Greenhouse Gas Reduction and Vehicle Miles Traveled Requirements

California's near-term targets for reducing GHG emissions for 2020 and 2030 are codified in Assembly Bill 32 (Nunez, 2006) and Senate Bill 32 (Pavley, 2016), which require California to reduce GHG emissions to 1990 levels by 2020, and 40% below 1990 levels by 2030, respectively.

The California Air Resources Board (CARB) developed and periodically updates a [Scoping Plan](#) to outline the strategies for attaining these targets while also looking forward to long-term goals of carbon neutrality by 2045 and a reduction in GHG emissions of 80% below 1990 levels by 2050. In addition to reducing GHG emissions, California is preparing for current and future impacts of climate change. The Governor's Proposed 2020-2021 Budget for Climate Resilience reflects an increased focus on these climate goals (Attachment 2).

While California is on track to reach the 2020 target, accelerated emissions reductions are needed to attain the 2030 target. On-road transportation is the largest source of GHG emissions (both statewide and for the San Diego region). The Scoping Plan describes the need for substantially greater reduction in vehicle miles traveled (VMT), increases in the sales of zero-emission vehicles, and increases in fuel efficiency standards and use of renewable transportation fuels.

In support of this, and as described below, Senate Bill 375 (Steinberg, 2008) and Senate Bill 743 (Steinberg, 2013) aim to influence regional and local planning to change how communities and transportation systems are planned and built in order to reduce GHG emissions and VMT.

SB 375 and Sustainable Communities Strategy Requirements

SB 375 requires CARB to set [regional targets](#) for GHG emissions reductions from passenger vehicle use, and it requires each of the 18 Metropolitan Planning Organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as a part of its Regional Transportation Plan that demonstrates how the region will meet its targets. In 2010, CARB established the original SB 375 regional GHG reduction targets for each MPO for years 2020 and 2035. For the San Diego region, the reductions were set at 7% and 13% for cars and light trucks from 2005, respectively. In 2018, CARB approved updated targets that reflect more aggressive GHG reductions of 15% for 2020 and 19% for 2035. Pursuant to SB 375, CARB is required to review each MPO's proposed technical methodology for quantifying GHG emission reductions from the SCS as well as the final quantification.

Action: **Information**

An overview of state laws related to vehicle miles traveled, greenhouse gas emission reductions, and modeling tools will be presented. Panelists will discuss how these state requirements apply to the 2021 Regional Plan, including what has changed since the 2015 Regional Plan was adopted.

Fiscal Impact:

None.

Schedule/Scope Impact:

None.

Upon adoption of the 2021 Regional Plan and its SCS, SANDAG must submit the 2021 Regional Plan and its SCS to CARB. CARB must either accept or reject the SANDAG Board of Directors determination that the SCS would achieve the applicable GHG emission reduction targets when implemented within 60 days.

In November 2019, CARB published the [Final SCS Evaluation Guidelines](#). The Guidelines reflect greater attention on the strategies, key actions, and investments committed by the MPOs in their SCSs and include additional reporting and tracking guidance.

SB 743 and Evaluating Transportation Impacts Under the California Environmental Quality Act

SB 743 required changes to the California Environmental Quality Act (CEQA) guidelines regarding the analysis of transportation impacts and streamlines CEQA review for infill development. In 2018, the California Natural Resources Agency certified and adopted changes to the CEQA Guidelines that identify VMT as the most appropriate metric to evaluate a project's transportation impacts on the environment. As a result, starting no later than July 1, 2020, automobile delay, "level of service," and other similar metrics generally no longer constitute a significant environmental effect under CEQA. The Governor's Office of Planning and Research developed a [Technical Advisory on Evaluating Transportation Impacts in CEQA](#) with recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. In general, transit, active transportation, and roadway capacity reduction projects reduce VMT and are presumed to cause a less-than-significant impact on transportation. Projects that increase roadway capacity generally induce VMT, and if those effects are significant, mitigation or alternatives would need to be considered.

Federal Air Quality Conformity

The U.S. Environmental Protection Agency sets air quality standards to protect public health and ecosystems. These standards are reviewed every few years and revised based on new scientific studies. The San Diego region has made significant progress over the past few decades in improving air quality. However, the region does not meet the 2008 and 2015 ozone standards and as such, is considered a "non-attainment" area for these standards.

SANDAG, as the region's MPO, must make a transportation air quality conformity determination for regional transportation plans and regional transportation improvement programs to ensure that federally funded or approved activities are consistent with the State Implementation Plan, which is the plan that demonstrates how the region will reduce air pollution to meet the national standards.

As part of the conformity determination, the San Diego region conducts air quality analyses for ozone. One of the chemicals that forms ozone contributes to GHG emissions (oxides of nitrogen). Therefore, reducing the levels of ozone also helps reduce GHG emissions.

SANDAG Modeling Tools

SANDAG Transportation Modeling is extremely complex, with over 86 sources of data. These data sets include information on land use, how people travel, algorithms, mode choice, synthetic populations, demographic distribution, housing, jobs, and much more.

SANDAG uses an activity-based model (ABM) that is state of the practice and has powerful analytic capabilities. The model has been tailored specifically to meet SANDAG analytical needs, considering current and future plans, and also taking into account unique sources of travel demand that exist in the San Diego region.

Staff will provide a comprehensive overview of the tools used by SANDAG that help show how various policies impact VMT throughout the region. These tools help implement and support the use of VMT as one of the metrics for determining transportation impacts based on policy and infrastructure decisions. Detailed information will include why we use an ABM Model, how the model works, how people travel in the region, and how different variables affect modeling results.

Next Steps

This panel is part of a series of informational agenda items related to the 2021 Regional Plan. Another future topic will focus on Environmental Impact Reports.

Hasan Ikhata, Executive Director

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Attachments:

1. Panelists Biographies
2. Governor's Proposed 2020-21 Budget Summary: Climate Resilience

Panelist Bios



Kate Gordon

Director of the Governor's Office of Planning and Research

Kate Gordon has spent the past two decades working at the intersection of climate change, energy policy, and economic development. Gordon was appointed Director of the Governor's Office of Planning and Research and Senior Advisor to the Governor on Climate by Governor Gavin Newsom on January 7, 2019. Trained as a community organizer, and later in law and regional economic development, her focus has long been on bringing diverse groups together to work toward a more sustainable, inclusive economy. Prior to being appointed OPR Director, Gordon was the founding director of the Risky Business Project, which focused on quantifying the economic impacts of climate change on U.S. energy demand, crop yields, and coastal infrastructure as well as on human health and mortality. As part of this work, Gordon consulted numerous investors and corporations on strategies to reduce climate risks across investments and assets, and also served as a co-author on the Fourth National Climate Assessment's chapter on "Reducing Risks Through Adaptation Actions."

Prior to her work on Risky Business, Gordon served in senior leadership positions at several nonpartisan think tanks including the Henry M. Paulson Institute, the Center for the Next Generation, the Center for American Progress, and as a nonresident Fellow at the Center on Global Energy Policy at Columbia University. Gordon got her start on energy and climate issues working to craft progressive policies at the intersection of labor, business, community, and environmental interests at the national Apollo Alliance, where she ultimately served as co-Executive Director until the merger with the Blue-Green Alliance in 2011. Under her leadership, the Apollo Alliance drafted key parts of the American Recovery And Reinvestment Act of 2009 including the Advanced Manufacturing Tax Credit and a competitive grant program for green jobs training, and also partnered with the AFL-CIO to draft the "just transition" portions of the proposed American Clean Energy and Security Act (aka the "Waxman-Markey bill"). Gordon earned a J.D. and a Masters in City and Regional Planning from the University of California-Berkeley, and an undergraduate degree from Wesleyan University. Along with her role in state government, Gordon regularly co-teaches a course at Stanford Law School entitled "Climate: Politics, Finance, and Infrastructure."



Jennifer Gress, Ph.D.

Chief, Sustainable Transportation and Communities Division, California Air Resources Board

Dr. Jennifer Gress is the Chief of the Sustainable Transportation and Communities Division at the California Air Resources Board, and is focused on promoting policies that provide a range of affordable housing and transportation options that reduce vehicle miles traveled and accelerate the transition to a zero-emission future. Prior to this position, Dr. Gress was a Senior Policy Advisor to Sacramento Mayor Darrell Steinberg, where she was responsible for policy development related to housing and community development, transportation, and sustainability. From 2011 until 2017, Dr. Gress served as the Legislative Director for the California Air Resources Board. In that role, she served as the Board's representative to the California Legislature, advised

Board Chair Mary Nichols and the Executive Office on legislative matters, and made policy recommendations to the Chair, the Secretary for Environmental Protection, and the Governor's Office on pending legislation. From 2005 until 2011, she worked as a consultant to the Senate Transportation and Housing Committee, where she focused on air quality, ports and goods movement, active transportation, and public-private partnerships, among many other transportation-related issues. Dr. Gress has a Ph.D. in Social Ecology from the University of California, Irvine, where she studied housing and community development.



Ellen Greenberg, FAICP

Deputy Director for Sustainability, California Department of Transportation

In 2016 Ellen Greenberg was appointed as the California Department of Transportation Deputy Director for Sustainability by then-Governor Jerry Brown. Ellen's team at Caltrans is leading culture change in the Department with new initiatives to move the state away from auto-dependency, promote zero emission vehicles, prepare for the impacts of climate change, and integrate equity considerations into the Department's work. Ellen is currently leading the Caltrans effort to implement SB 743.

Ellen has over 30 years' experience working with cities, transportation agencies, and non-governmental organizations to guide transportation, development, and conservation decisions. She holds degrees in Geography; City and Regional Planning; and Transportation Engineering from UC Berkeley. Ellen is a Fellow of the American Institute of Certified Planners.

Item 4, Att 2 – Governor’s Proposed 2020-21 Budget Summary: Climate Resilience

This item was not ready at the time of posting and will be posted when complete.