



December 1, 2021

Liane M. Randolph
Chair, California Air Resources Board
1001 I Street,
Sacramento, CA 95814

EJAC
California Air Resources Board
1001 I Street,
Sacramento, CA 95814

Re: Transportation Recommendations for 2022 CARB Scoping Plan Modeling Scenario Inputs

Chair Randolph and Environmental Justice Advisory Committee,

Decarbonizing California’s transportation system will leave environmental justice (EJ) communities behind if CARB continues to focus primarily on electric cars without a stronger emphasis on investing in reliable, affordable and clean mass transit. Not only are EJ communities already overburdened, they are highly dependent on transit. California has taken a global leadership role in reducing carbon emissions, setting a goal of carbon neutrality by 2045. Transforming the transportation sector, the largest source of emissions in the state, will be essential to achieving state carbon reduction goals and is an opportunity to address long-standing issues of inequity¹.

CARB must prioritize heavy investments in mass transit, a rapid transition to ZEV buses and trucks and prioritize public health and equity to reflect the needs of frontline communities and meet the state goals for reducing carbon emissions from transportation.

Electrification of the transportation sector is critical to transitioning away from fossil fuels, but primarily focusing on light duty electric vehicles (EVs)—even with the adoption of critical equity measures—cannot meet our climate and public health goals because of energy inefficiencies and the high cost of cars, lifecycle emissions, equity concerns and displacement. EVs without transit will only exacerbate existing inequities. EV adoption must be balanced with other ambitious strategies and investments in alternative transportation options like ZEV buses and light-rail that will reduce the state’s overall transportation energy needs.

Environmental Health Coalition (EHC) submits this letter to offer recommendations for how the transportation section of the 2022 Climate Change Scoping Plan can incorporate the priorities of environmental justice communities. CARB should consider the following three areas of recommendations:

1. “High Mass Transit” Scenario

A transportation system that relies more heavily on mass transit will be more equitable, better serve the needs of environmental justice communities and require less total energy. Greater ridership of mass transit should be

¹ Brown, A. L, Sperling, D., Austin, B., DeShazo, JR, Fulton, L., Lipman, T., et al. (2021). Driving California’s Transportation Emissions to Zero. UC Office of the President: University of California Institute of Transportation Studies. <http://dx.doi.org/10.7922/G2MC8X9X> Retrieved from <https://escholarship.org/uc/item/3np3p2t0>

reflected in at least one scenario that demonstrates a significant mode-share shift away from personal automobiles because of issues around energy efficiency and equity.

- **CARB should model a “high mass transit” scenario** that assumes significant investments in reliable and affordable mass transit resulting in greater vehicle miles traveled (VMT) reductions that would achieve the highest possible greenhouse gas (GHG) reductions at the lowest cost per capita. This scenario could assume approximately 11% transit mode share by 2035 with a corresponding VMT reduction of at least 30%. Transit mode share could increase to 22% by 2045 with a corresponding VMT reduction. (see *appendix A*)
- An **“energy efficiency per vehicle type”** needs to be integrated into PATHWAYS to account for other modes of transportation that use less energy than passenger cars and emit less CO₂ per passenger mile, like electric buses and light-rail². While CARB has maintained that PATHWAYS is not intended to demonstrate specific policies or mechanisms for implementation, incorporating energy per vehicle type in a high VMT reduction scenario would be a way to model greater GHG emission reductions via more optimal transportation modes.
- **Investments in transit** such as increasing frequency, expanding service or subsidizing fares to provide free transit have the potential for greater VMT reductions at a low cost. Local efforts in San Diego have demonstrated that even minimal investments for public mass transit systems can result in large increases in ridership. For reference, San Diego’s Metropolitan Transit System’s (MTS) second annual “Free Transit Day” on October 2, 2019 resulted in a 30% increase year-over-year in ridership³.
- **Set higher MPO GHG reduction targets.** CARB can include the assumption of setting higher Metropolitan Planning Organizations (MPO) greenhouse gas (GHG) emission reduction targets at sliding scale relative to each region in the Scoping Plan. Each region can increase the ambition for GHG reductions through implementing localized VMT reduction strategies. For example, San Diego Association of Governments (SANDAG) GHG reduction target can be increased to 25% by 2035. This is an effective tool CARB has the authority to utilize to help increase VMT and GHG reductions simultaneously at the regional level.

2. Rapid transition to ZEV for heavy-duty trucks

California is moving towards a more accelerated adoption of ZEV trucks for drayage by 2035. The Port of San Diego Board of Commissioners recently adopted a goal for 2021’s Maritime Clean Air Strategy⁴ to transition to 100% ZEV trucks by 2030. CARB should accelerate the ZEV heavy-duty goals to match this local ambition and achieve higher reductions across the state. Conversion to ZEV heavy-duty vehicles as quickly as possible must be required and it will result in significant health benefits to overburdened communities.

3. Public Health & Equity

Public health benefits and impacts must be centered in the Scoping Plan to address environmental justice. High concentrations of diesel trucks and freight are located in EJ communities and decarbonizing transportation is an opportunity to address historical inequities and public health disparities.

- **CARB can incorporate existing diesel particulate monitoring data from regional air monitors** (which contains climate warming black carbon) into modeling as a way to incorporate short-term health impacts to EJ

² TUMI, [Transportation Outlook](#), pg 69.

³ [Ridership Rebound](#) – Spike Seen in San Diego Transit Ridership, MTS, November, 5 2019

⁴ Port of San Diego Adopts Most Ambitious [Maritime Clean Air Strategy](#) of its Kind in California, October 14, 2021

communities and an opportunity for short-term climate gains. Measuring health impacts from diesel PM emissions would be a win for EJ communities and the climate.

- **Anti-Displacement strategies must be considered** as a part of VMT land-use and transportation strategies to prevent lower-income families in EJ communities from being priced out of neighborhoods as air quality improves and housing costs rise. Without anti-displacement policies and protections, displacement of EJ communities has the potential to undo VMT reduction gains. Providing meaningful alternatives to driving cars coupled with anti-displacement measures will help address the transportation challenges EJ communities face.

Problems with Electrifying Cars Without Mass Transit

Electric vehicles (EVs) are an essential piece to addressing the climate crisis, but cannot be the primary focus and strategy for decarbonizing the transportation sector. EVs without transit will only exacerbate existing inequities. Internal combustion engine passenger “light-duty” automobiles are California’s largest single source of greenhouse gases (GHG) and air pollution, representing about 26% percent of the state’s GHG emissions, with transportation overall representing 41% of statewide emissions. When factoring in barriers for ZEV adoption, cost to consumers, energy efficiency, and lifecycle carbon emissions, electric vehicles alone are *not* enough to meet California’s greenhouse gas emissions reduction goals and timeline and need to be coupled with mass transit.

- **Transit-dependent EJ communities will be left behind in EV transition.** Passenger EVs historically have not have a high penetration into EJ communities and many low-income families will likely continue to be left out of EV transition for a variety of reasons. Lack of charging infrastructure, low home ownership rates and unaffordability of EVs will continue to make EVs unrealistic alternatives for EJ communities into the future. Viable alternatives to driving must be including in CARB Scoping Plan to benefit transit dependent EJ communities.
- **Subsidizing EVs is not the most cost effective or energy efficient GHG reduction method.** More energy efficient and lower carbon intensive transportation modes such as ZEV buses and light-rail need to make up a greater share of California’s greenhouse gas emission reductions using proven, existing technologies. CARB should not continue to rely primarily on subsidies for the private automobile industry because it is a high cost per capita and one of the most energy inefficient transportation modes. Additionally, CARB does not know how often many of its incentive payments influence consumers to purchase lower-emission vehicles than they otherwise would have purchased.”⁵ A greater share of Californians using ZEV mass transit would have the added benefit of greater GHG reductions using less energy in the transportation sector and would require less reliance on controversial and uncertain negative emissions technologies yet to be developed at economies of scale such as carbon capture, utilization and sequestration (CCUS). Adopting a mass transit scenario with high energy efficiency can enable California to achieve a range of climate and socioeconomic goals synergistically.⁶
- **EV lifecycle emissions are not being accounted for.** Lifecycle analysis needs to be considered when modeling scenarios with a high percentage of electric vehicles. Failure to include lifetime cradle to grave GHG emissions for EVs manufactured out-of-state would effectively outsource California climate pollution in the global context to other regions. Studies have shown lifetime carbon emissions of electric cars to be

⁵ Audit [Report 2020-114](#): California Air Resources Board, Auditor of State of California, February 2021

⁶ Grubler, A., Wilson, C., Bento, N. et al. A low energy demand scenario for meeting the 1.5 °C target and sustainable development goals without negative emission technologies. *Nat Energy* 3, 515–527 (2018). <https://doi.org/10.1038/s41560-018-0172-6>

only about 50% - 60% less than internal combustion engine cars, even when factoring in sustainable and renewable energy grids⁷. For example, electric busses generate about 10% of the average carbon emissions per passenger mile of a gasoline-powered car and only about 22% of the lifetime carbon emissions compared to electric cars per passenger mile. Factoring in lifecycle emissions builds the case even further for mass transit.

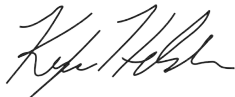
Conclusion

Centering the lived experience and recommendations of EJ communities is critical for the 2022 update of the Scoping Plan. Environmental Health Coalition's recommendations for the transportation sector are rooted in reflections from our community members, many of whom are transit riders. For many years, San Diego's EJ communities have been advocating for a mass transit system that works for frontline communities and centers the needs of the community. A statewide outreach effort was conducted by CARB in 2017 to engage communities and gather feedback from residents in EJ communities. CARB staff should work with the EJAC to incorporate that community engagement results from 2017 for much of it is likely still valid and relevant. CARB can also utilize the input gathered via the AB 617 community engagement process. New community outreach should be strategic and focused and not repeat the extensive engagement conducted in 2017. Community members need to see that their participation has been heard and is reflected in the methodology for the 2022 Scoping Plan.

CARB has a moral imperative to model a "high mass transit" scenario that creates viable alternative mobility choices for EJ communities living on the frontlines of the climate crisis. Electrification of personal automobiles alone will not be enough and more investments in reliable and affordable mass transit need to be built into the modeling scenario assumptions. EVs without transit will only exacerbate existing inequities.

EHC and our environmental justice advocacy partners look forward to continuing to engage with CARB staff and the EJAC to ensure that the 2022 Climate Change Scoping Plan update centers the priorities of EJ communities.

Regards,



Kyle Heiskala
Climate Justice Policy Advocate
Environmental Health Coalition

cc:

EJAC Co-Chairs
Rajinder Sahota, Deputy Executive Officer - Climate Change & Research
Chanell Fletcher, Deputy Executive Officer - Environmental Justice
Ambreen Afshan, Manager of the Office of Environmental Justice
Craig Segall, Deputy Executive Officer - Mobile Sources & Incentives
Trish Johnson, Staff Air Pollution Specialist, EJAC Liaison

⁷ Report: [Cleaner Cars From Cradle to Grave](#), Union of Concerned Scientists, Report, November 2015

Appendix A - High Mass Transit” Scenario Recommendations for VMT Reductions Explained

The Caltrans California Transportation Plan (CTP) 2050 report⁸ models a statewide mode share for transit that increased from 4% in a “business as usual” scenario to 11% in a “combined transportation and land-use” scenario that resulted in a 27% VMT reduction by 2050. In that scenario, 77% of all total transportation are from passenger automobiles. CARB needs to increase the ambition of shifting people out of cars in at least one scenario that has a greater mode share for alternative forms of transportation by 2045. Assuming that the CTP 2050 is on the conservative side, it assumes a 27% VMT reduction by 2050 from a 10% increase in alternative non-automobile forms of transportation, which includes an 11% transit ridership figure. Based on this, EHC recommends that CARB model a “high mass transit” scenario in the Scoping Plan that is much more ambitious where transit ridership and mode share statewide could be 11% by 2035 and 22% by 2045 respectively.

Using the CTP 2050 report as a reference, the “combined transportation and land-use” scenario projects that alternative forms of transportation could make up at least 23% of transportation mode share and a result in a 27% VMT reduction. CARB can increase the ambition of VMT reduction targets in the scoping plan scenarios to achieve a slightly more ambitious goal of a 30% VMT reduction by 2035. Increasing transit mode share from 11% by 2035 to 22% by 2045 would result in greater VMT reductions that what CARB previously proposed for 22% VMT reduction by 2045. Supplemental modeling for mode share and VMT reductions are needed for a more exact VMT reduction goal by 2045 but can easily be done as a scenario in the scoping plan.

Comparing California’s transportation sector to the other sectors of the economy, large amounts of innovation are not needed to achieve a more ambitious GHG reduction goal since viable ZEV technology options for light-rail trains and buses are available now and they will continue to improve over time. ZEV mass transit options are a more energy efficient form of travel and represents a lower cost per capita for a greater greenhouse gas reduction per dollar spent and energy consumed compared to subsidizing personal automobiles, which are comparatively energy inefficient and resource intensive. The trends of low EV penetration in EJ communities and lifecycle emissions not being reflected raises concerns about equity. CARB can model a more balanced approach to decarbonizing the transportation sector that includes an “all-of-the-above” strategy, with large investments in reliable and affordable mass transit.

⁸ [California Transportation Plan 2050](#), Caltrans Report, February 2021