November 16, 2021

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

RE: 2022 Scoping Plan Update to Include VMT Reduction Metrics and Strategies

Dear Chair Randolph,

NextGen California would like to thank the California Air Resources Board (CARB), its staff, and other contributors for the important analytical and planning work that goes into the 2022 Scoping Plan update process. Specifically, we commend staff for their continued effort to thoughtfully compile and assess the diverse stakeholder perspectives shared in the latest Scenario Inputs Technical Workshop.[1] Achieving the mandatory 2030 emissions reduction targets required by Senate Bill 32 (2016) and carbon neutrality no later than 2045 are critical milestones to combat climate change and protect California communities most harmed by pollution and extreme weather.

NextGen California fights for progressive policy change to address environmental, social, racial, and economic inequities in California. Our participation in the Scoping Plan Update is to ensure the modeling and scenarios being considered both achieve our state's climate goals and prioritize equitable, justice-centered solutions. We respectfully request the consideration of the following recommendations for the 2022 Scoping Plan update (Plan). This comment letter builds upon and reinforces some of the recommendations already presented, particularly those related to how vehicle miles travelled (VMT) targets can be incorporated into the draft scenarios being considered.

NextGen has previously urged CARB to prioritize the 2030 target in developing this Scoping Plan update, evaluate more ambitious emissions reductions scenarios, and incorporate more recommendations from the Environmental Justice Advisory Committee (EJAC).[2] We reiterate those recommendations here. We also add our support for the EJAC's request to extend the Scoping Plan update deadline as it is the only way to ensure

[1] CARB, Scenario Inputs Technical Workshop (October 2021), https://ww2.arb.ca.gov/resources/documents/2022-scoping-plan-update-scenario-inputs-technical-workshop-presentation

[2] NextGen California, NextGen California Comment Letter on the 2022 Scoping Plan Update Workshops (July 2021), https://www.arb.ca.gov/lists/com-attach/41-sp22-kickoff-ws-AG5TMlY0UWMEXQBj.pdf

comprehensive engagement with the communities of color and low-income communities that they represent. The COVID-19 pandemic and extreme weather events like the recent catastrophic wildfire season has inhibited meaningful outreach, consequently delaying the EJAC's development of recommendations for the Plan's incorporation of environmental justice perspectives in scenarios and modeling.

We are additionally concerned that two of the four scenarios presented at the September 30th workshop, which examine carbon neutrality by 2045, assume GHG emissions reductions only decline to 80% below 1990 levels by 2050.[3] It would be prudent for at least one of these scenarios to examine a more conservative balance of emissions reductions and negative emissions that relies less on highly optimistic assumptions about negative emissions. We recommend modeling GHG emissions 90% below 1990 levels in 2045 in order to ensure that the scenarios do not prejudge potentially unrealistic levels of carbon dioxide removal as either possible or optimal in achieving carbon neutrality.

The bulk of this comment, however, will primarily address measures CARB should consider reducing VMT within the transportation sector, California's largest source of greenhouse gases and criteria air pollutants.[4] All four alternatives mentioned in the initial scenario inputs workshop assume rapid fossil fuel demand reduction particularly in the transportation sector. VMT reduction can and should be an important component of achieving this demand reduction. The method for incorporating VMT into the modelling will have implications both for how other transportation sector policies operate and on the overall levels of emissions reductions that must be achieved both in the transportation sector and in other sectors.

VMT reduction strategies can also address the racial disparities that have resulted from inequitable transportation decisions like the deployment of highways and freight corridors. Communities most burdened by pollution and fragmentation related to these decisions will benefit significantly from efforts to reduce vehicle travel including improved air quality, access to active and safe mobility options, and homes within a range of income levels that are near employment opportunities. These benefits should be weighed just as seriously as the state's emissions targets and therefore NextGen recommends all targets and strategies discussed in this comment be equity-centered. This requires thorough incorporation of EJAC recommendations and comprehensive community

[3] CARB, Draft Scenario Inputs Technical Workshop (September 2021), Slide 10, https://ww2.arb.ca.gov/sites/default/files/2021-09/carb_presentation_sp_scenarioinputs_september2021.pdf
[4] CARB, Scoping Plan Kick-off Transportation Sector (June 2021), Slide 5, https://ww2.arb.ca.gov/sites/default/files/2021-06/carb-overview_sp_kickoff-transportation_june2021.pdf

engagement throughout the Scoping Plan process from setting scenarios to modeling and then finally implementation.

NextGen also recommends VMT reduction be incorporated into the draft scenarios to ensure efforts to decarbonize the transportation sector fully utilize all tools available. Fossil fuel alternatives and widespread electrification are vital to reducing transportation emissions. However, analyses too often privilege these tools by quantifying their impact as the primary drivers of emissions reduction, including VMT reductions almost as an afterthought, with little consideration for how VMT reductions can be achieved and how VMT reduction interacts with other GHG reduction policies. For example, aggressive VMT reduction scenarios that rely heavily on shifting rides from passenger cars to transit will have implications for how quickly fleets can be electrified and how much savings will accrue to the state. On the other hand, VMT reductions that come primarily from encouraging remote work or the construction of housing near job centers may have less impact on the model for electrifying passenger cars and transit, even though trip length and frequency would decrease, because fleet sizes would be less affected.

In other words, VMT reduction should not be treated merely as a method of compensating for remaining emissions reductions that ZEV adoption doesn't achieve. It is imperative that VMT reduction included in Plan scenarios reflect achievable policy options and be grounded in the best available information for assessing how the state can achieve the reductions modeled. Carrying out this quantification is difficult at present, with so little successful VMT policy to draw upon in California and the United States, however, applying consistent and transparent methodologies to justify VMT reduction assumptions in the Plan scenarios can ensure CARB creates an actionable roadmap for reducing transportation emissions from VMT and from other methods of transportation decarbonization.

The Scoping Plan should model a central estimate of ambitious, yet achievable targets for VMT reduction. Specifically:

A. CARB should model reductions in VMT per capita of 8.5% and 15% by 2030 and 2045, respectively, from a 2019 baseline.
B. CARB should model a 7% reduction in statewide VMT below projected levels by 2030.
C. CARB should model a 15% reduction in statewide VMT by 2050 relative to a 2020 baseline year.

As CARB considers how these VMT reductions can be achieved, the agency should:

A. Track and quantify VMT accurately and in coordination with other agencies.
B. Assume CAPTI is fully implemented as a conservative policy case for VMT reduction strategies and build on CAPTI to achieve deeper VMT reductions.
C. Acknowledge and address SB 375 implementation gaps.

Background

The 2022 Scoping Plan Update must put California on track to meet the state's 2030 and 2045 climate goals and reach carbon neutrality as soon as possible to prevent the devastating environmental, societal, and economic impacts of climate change. The scope and scale of this damage can scarcely be overstated. The 6th Assessment Report released this year by the Intergovernmental Panel on Climate Change (IPCC) affirmed that human-induced climate change is already contributing to, and is projected to further intensify, disruptions in the global water cycle.[5] For California, this means increasing frequency and intensity of extreme weather events like prolonged drought and desertification, devastating wildfires, and sea level rise. California wildfires are already costing the state billions of dollars annually in fire suppression costs, healthcare costs due to poor air quality and extreme heat, damage to natural resources, property destruction, and economic impacts to industries – with worsening wildfire seasons impending due to climate change.[6] In a 2019 report on sea level rise, the Legislative Analyst's Office (LAO) estimated that sea level rise in California could threaten as much as $150 billion in total property value.[7] The dynamic global water cycle is only one category of harm expected to impact California due to climate change - other harmful environmental processes like extreme heat, ocean acidification and loss of biodiversity are also expected to intensify and disrupt the economy, public health, and more with a disproportionate impact on low income communities and communities of color.[8]

Given the urgency of the crisis, we are heartened to see the dedication and seriousness that CARB Staff undertakes in the Scoping Plan process. We are further heartened by Governor Newsom's direction to CARB to evaluate potential pathways for achieving carbon neutrality statewide by 2035. We must accelerate our efforts to

[5] IPCC, Summary for Policymakers (August 2021), p 26, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf
[6] UCL, Full cost of California's wildfires to the US revealed (December 2020), https://www.ucl.ac.uk/news/2020/dec/full-cost-californias-wildfires-us-revealed
[7] LAO, Preparing for Rising Seas: How the State Can Help Support Local Coastal Adaptation Efforts (December 2019), p 6, https://lao.ca.gov/reports/2019/4121/coastal-adaptation-121019.pdf
[8] Trevor M. Letcher, Climate Change: Observed Impacts on Planet Earth, Third Edition (Elsevier, Feb 26, 2021)

reduce emissions and stop the buildup of GHGs that are fueling climate change. Immediate, aggressive action is no longer optional - it is necessary.

Among the tools CARB has at its disposal, but may not yet be fully utilizing, are VMT reduction strategies to accelerate the transition from passenger vehicles to more sustainable modes of travel such as active mobility, public transportation, and carpooling. Passenger vehicle travel on average produces 4.60 MT CO2e of GHG emissions for every driving Californian, and VMT continues to increase despite a brief dip in VMT in the early stages of the COVD-19 pandemic.[9] Despite CARB's expansive authority to implement the regulations needed to achieve statewide greenhouse gas reductions under SB 32, and laudable efforts to improve the environmental performance of vehicles, passenger vehicle emissions are headed in the wrong direction.[10]

Section 1: VMT Reduction Targets for 2030, 2045 & 2050

CARB should emphasize VMT reduction in the Plan update in order to address the growing threat that the State may not achieve our climate goals. NextGen recommends the Plan model reductions in VMT per capita of 8.5% and 15% by 2030 and 2045, respectively, from a 2019 baseline as well as statewide VMT reduction targets of 7% below projected VMT levels in 2030 and 15% by 2050 from a 2020 baseline year.

Fossil fuels extracted, transported, refined, and combusted for transportation account for more than half of all global warming pollution in California. But while California has made progress in spurring growth in zero emission vehicles and lower-carbon fuels, transportation GHG emissions continue to increase.[11] It is clear, therefore, that CARB must do more to curb these emissions. CARB is currently engaged in nation-leading efforts to spur the adoption of cleaner vehicles and fuels. But the missing third leg of this stool is reducing the amount that Californians must drive or prefer to drive in single-passenger personal vehicle trips to meet their needs.

[9] EPA, Greenhouse Gases Equivalencies Calculator - Calculations and References (2020), https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

[10] CARB, 2018 Progress Report (November 2018), p 21-24, https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf

[11] CARB, 2018 Base-year Emissions Inventory Report (December 2019), p 21-24, https://ww2.arb.ca.gov/sites/default/files/2019-12/SB%201014%20-%20Base%20year%20Emissions%20Inventory_December_2019.pdf

Expected population growth forecasted by DOF and California MPOs could increase statewide VMT 13-35% by 2050.[12] There are also other factors influencing this continuous increase on a per capita basis, such as land use management, a lack of mobility options, and roadway expansion. As a result, CalSTA finds that even an aggressive suite of VMT-reducing measures that represent a substantial change in how the state manages transportation infrastructure decisions may, at best, hold total VMT roughly constant in a high-population growth scenario. This dynamic presents a massive challenge for VMT reduction strategies: California could still experience increasing statewide VMT even if per capita VMT is reduced. A minimal per capita reduction in VMT will not offset the population's increasing contribution to VMT. In other words, to offset the anticipated increase in VMT from California's expected population growth, per capita VMT must decline by a larger percentage than the aggregate statewide VMT reductions that are required to meet our climate goals. It is imperative that the Plan recognizes that per capita statewide passenger vehicle travel is increasing and that it addresses this concern through proposing measures that will result in immediate VMT reductions, as well as longer-term reductions.

The 2017 Scoping Plan Update made no mention of any per capita VMT reduction targets and consequently lacked a specific strategy to address this increasing sector of emissions. Predictably, without an approach to reduce per capita VMT, there has also been little or no progress in reducing or slowing the growth of total VMT, which is merely the aggregate of per capita VMT. CARB should not repeat this approach in the current Plan update.

Tackling California's unchecked VMT growth cannot be delayed. Both the 2017 Scoping Plan Update and the 2018 Progress Report recognize that setting ambitious reductions in single-occupancy vehicle activity is necessary and that solely switching to cleaner fuels will not yield the emissions reductions we need.[13] Between 2013 and 2017, passenger vehicle travel increased nearly 8%; this VMT growth outpaced improvements to fuel efficiency in light- and medium-duty vehicles so much so that California saw an increase in transportation GHG emissions.[14] Even with the phase out of internal combustion engine sales in 2035, the transition to zero emission vehicles

[12] CalSTA, California Transportation Plan 2050 (February 2021), p 64-65, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf

[13] CARB, 2018 Progress Report (November 2018), p 28, https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf; CARB, 2017 Climate Change Scoping Plan (November 2017), p 75, https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf?utm_medium=email&utm_source=govdelivery

[14] CalTrans, Greenhouse Gas Emissions and Mitigation Report (August 2020), p 5, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/ghg-emissions-and-mitigation-report-final-august-2-2020-revision9-9-2020-a11y.pdf

(ZEVs) on that timeframe will not be sufficient to achieve our state's binding target of 40% statewide emissions reduction by 2030.[15] Therefore, the 2022 Scoping Plan must highlight strategies to immediately address VMT growth both to put us on track to achieve the 2030 target and achieve carbon neutrality even in 2045, much less 2035.

Our recommended 2030, 2045, and 2050 targets are consistent with the goals outlined, but not yet fulfilled, in the 2017 Scoping Plan Update, the 2020 Mobile Source Strategy (MSS), and the UC ITS Carbon Neutrality Study and can be achieved through decisive, immediate action. The 2017 Scoping Plan Update determined that statewide VMT reductions of 7 percent below projected 2030 levels are necessary to meet the statewide emissions targets, as well as a 15 percent reduction in statewide VMT by 2050 which is shared by the 2020 MSS. The UC ITS Carbon Neutrality Study set benchmarks for per-capita VMT reduction in 2030 and 2045 of 8.5% and 15%, respectively, from a 2019 baseline.

It is imperative that CARB not only adopt meaningful and achievable reduction targets in the Plan but also reinforce them with a concrete set of strategies, pilot projects, and/or interagency collaboration. The Plan must evaluate the current VMT trajectory realistically when assigning emissions reductions to VMT strategies and outline a realistic plan for achieving the modeled reductions if the Plan is to bear a useful relationship to implementation and real-world GHG outcomes.

If the Plan models VMT reduction targets that are more ambitious than the policy framework that supports them, the Plan risks creating a false sense of optimism about what can or will be achieved via VMT reductions, which will serve only to mask the level of ambition required to achieve those reductions in other sectors. For example, if CARB models a scenario that would reduce emissions by 100 million metric tons of CO2 equivalent (MMT) through VMT reductions, those tons no longer need to be achieved by policies in other sectors. But if CARB only adopts policies to support 25 MMT in reductions, despite modeling 100MMT in reductions, 75MMT in reductions will remain to be achieved that the Scoping Plan had not accounted for.

Because all of the alternatives in the most recent Scenario Inputs Technical Workshop are being tuned to assemble sectoral emissions reductions that meet predetermined GHG outcomes, the risk associated with overstating how much the state can rely on a single policy is greater than if the plan underestimates individual policies. In the former case, we risk failing to achieve aggregate emissions reduction goals or facing unforeseen

[15] CARB, 2020 Mobile Source Strategy (September 2021), p 105, https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed_2020_Mobile_Source_Strategy.pdf

pressures to accelerate unplanned-for emissions reductions, which could skew projected costs and alter projected health outcomes. In the latter case, i.e., a more conservative approach that assigns emissions reductions to given strategies only where the state can credibly put forward a pathway by which those reductions are achieved, the cost of underestimating performance may be that the state and stakeholders fail to pursue goals as aggressively as they could. However, it is equally possible that the strategy will overperform and enable the state to meet its goals ahead of schedule and adopt updated, more stringent targets in subsequent regulation.

While CARB should strive to maximize VMT reductions, and use the full complement of tools available to the agency to do so, it is also vital that the Scoping Plan present a realistic depiction of what the agency can and will actually undertake and achieve. An ambitious model input that is not backed up by equally ambitious and effective policy would ultimately be more damaging than a modest model input that is achieved, and that leaves the remaining emissions reductions to be achieved by other means. This comment therefore highlights the necessity of immediately reducing both total VMT and VMT per capita and recommends the following VMT reduction targets:

A. CARB should model reductions in VMT per capita of 8.5% and 15% by 2030 and 2045, respectively, from a 2019 baseline.

CARB should adopt a 2030 target of an 8.5% reduction in per-capita VMT and a 2045 target of 15% reduction. These levels of reduction are consistent with benchmarks identified in the UC ITS Carbon Neutrality Study based on key technological and policy stepping-stones.[16]

We share the perspective of stakeholders and Staff that wish to see increased ambition and regulation to address VMT reduction beyond these levels. Nevertheless, we have concerns with CARB setting more ambitious targets, as referenced in recent workshops, when we are not on track to achieve the existing goals set in current plans and policy. We encourage CARB to act as aggressively as possible, however, the Plan should not duplicate the mistakes of the 2017 Scoping Plan Update in which a target was adopted that was not informed by the realities of current policy and lacked a clear implementation plan.

[16] UC ITS, Driving California's Transportation Emissions to Zero (April 2021), p 16, https://escholarship.org/uc/item/3np3p2t0

The initial Scenario Concepts Technical Workshop provided three 2045 VMT reduction targets for consideration relative to a 2020 base year: Option A for 20%, Option B for 18%, and Option C for 15%.[17] While we would prefer an outcome aligned with Option A, we recommend that CARB model Option C, given our state's track record of failure on VMT reductions and the need for the Scoping Plan to provide a conservative and clear-eyed assessment of what is actually required to reach our GHG reduction goals. Option C is consistent with the benchmarks set in the UC ITS Study. Options A and B are both more ambitious than the 15% VMT per capita reduction by 2045 set in the research by UC ITS, therefore, we recommend those targets be considered in a potential sensitivity analysis as more aggressive VMT reduction scenarios. CARB should consider these the most ambitious scenarios that are informed by the most aggressive VMT reduction strategies and only consider their adoption upon the identification of specific strategies that not only reverse current emissions trends but accelerate emissions reductions enough to offset expected increases in VMT.

B. CARB should model a 7% reduction in statewide VMT below projected levels by 2030.

We urge CARB to incorporate a 2030 target of 7% statewide VMT reductions to ensure we are considering near-term, immediate solutions, as well as the longer-term strategies needed to achieve carbon neutrality. While the initial 2022 Scoping Plan Update Scenario Concepts Workshop made no mention of a 2030 target for VMT reduction and focused solely on 2035 and 2045, we hope and expect CARB to include improved VMT reduction strategies in this Plan update, since this constitutes an area where the state is very far off-track for meeting the goals articulated in the 2017 Plan. VMT reduction strategies can take several years to begin to bear fruit, so setting a short-term target for 2030 will spur the immediate action required to accelerate emissions reductions. VMT reduction strategies cannot be delayed if we want to see the resulting behavioral and land use changes necessary to achieve carbon neutrality by 2045 or especially by 2035.

The 2017 Scoping Plan Update called for a 7 percent reduction in VMT below projected levels in 2030. We recommend this target be maintained in the 2022 Scoping Plan Update. Since the last Plan, VMT has risen, not fallen, demonstrating the need to reassess and revise CARB's approach to VMT both in the model and real life implementation. It is also important to note that because VMT reductions rely on slow behavioral and land use changes, significant VMT reductions are more achievable after 2030.[18] A 7% VMT reduction target for 2030 can

[17] CARB, Scenario Concepts Technical Workshop (August 2021), Slide 18, https://ww2.arb.ca.gov/sites/default/files/2021-08/carb_presentation_sp_scenarioconcepts_august2021_0.pdf
[18] UC ITS, Driving California's Transportation Emissions to Zero (April 2021), p 10-11, https://escholarship.org/uc/item/3np3p2t0

be achieved with decisive action and is not so exceedingly ambitious that it is impossible to reach. This target will challenge agencies to incorporate the strategies in this comment and set California up to successfully achieve a longer-term target as well.

C. CARB should model a 15% reduction in statewide VMT by 2050 relative to a 2020 baseline year.

CARB's Plan scenario modeling should adopt the 15% statewide VMT reduction target in the 2020 Mobile Source Strategy (MSS). This assumption would also be consistent with the 2016 MSS and the 2017 Scoping Plan.[19] The 2020 MSS is a critical policy roadmap for transforming the California transportation sector. It emphasizes the magnitude of needed regulations and strategies to achieve emissions reductions that are consistent with air quality and climate goals. In the October CARB Board Meeting, Staff highlighted the importance of incorporating MSS programs and concepts into the Plan in order to effectively strategize and achieve both short and long term climate goals.

CARB should incorporate the assumptions of previous planning documents like the 2020 MSS and the 2017 Scoping Plan in the 2022 Plan's targets in order to realistically assess the feasibility of reduction scenarios. CARB found that VMT in California will continue to increase and that the mobile source sector will struggle to reach carbon neutrality by 2045.[20] The 2020 MSS provides a comprehensive set of strategies that are attainable through additional policy intervention and address a multitude of influences on single-occupancy vehicle travel demand. The MSS scenario utilizes strategies that re-envision the built environment and address the systemic issues that hinder equitable transportation decisions. These are ambitious, transformative policy solutions that have been determined to be commensurable with a 15 percent reduction in statewide VMT. This 2050 target must be informed by VMT trends and incorporate strategies that either utilize current policy or specifically identify additional measures needed; the 2020 MSS target accurately represents what VMT reductions are needed in the Plan.

[19] CARB, Mobile Source Strategy (May 2016), p 36-37, https://ww3.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf; CARB, 2017 Climate Change Scoping Plan (November 2017), p 78, https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf?utm_medium=email&utm_source=govdelivery

[20] CARB, 2020 Mobile Source Strategy (September 2021), p 92, https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed_2020_Mobile_Source_Strategy.pdf

Section 2: CARB Should Consider and Adopt Realistic Pathways to Reach 2030 and 2050 VMT Reduction Targets

NextGen urges CARB to evaluate the tools, both existing and still needed, to meet these VMT reduction goals. CARB should also acknowledge any limitations to available policy solutions and highlight legislative and fiscal actions that may be necessary. The 2022 Scoping Plan Update must address VMT within the Plan by first accurately assessing the baseline conditions for VMT. To get a clear understanding of what must be done, CARB should support potential methods of quantifying current VMT in California and account for anticipated VMT increases related to planned highway expansion projects within this data. In addition to establishing an accurate baseline for VMT, CARB should consider policies, potential legislation, and informal agency actions that will implement effective VMT reduction strategies and prioritize community engagement that elevates environmental justice voices most impacted by these policy decisions.

For the above reasons, NextGen recommends the following VMT reduction modeling and policy solutions to be incorporated into the Plan to meet the necessary 2030, 2045, and 2050 VMT reduction targets mentioned previously:

A. CARB should track and quantify VMT accurately and in coordination with other agencies.
B. CARB should assume CAPTI is fully implemented as a conservative policy case for VMT reduction strategies and build on CAPTI to achieve deeper VMT reductions.
C. CARB should acknowledge and address SB 375 implementation gaps.

A. CARB Should Track and Quantify VMT Accurately and in Coordination with Other Agencies.

The Plan must not only develop VMT reduction targets, but also accurately quantify a baseline for VMT that CARB and other implementing agencies can use to assess progress. We recognize that CARB may not have the technical ability or data to quantify VMT reductions currently, however, VMT is directly related to GHG emissions and tracking VMT in California will inform which reduction strategies will be most effective. CARB should therefore fully utilize available VMT quantification tools, adopt social science methodologies to expand upon this knowledge base, and commission new research to better inform policy implementation to achieve the goals of the Plan.

Without intervention, VMT could increase by 35% by 2050, and California plans to invest billions of dollars in the coming years on existing and planned freeway widening projects.[21] While proponents of these projects justify them in the name of combating traffic congestion and increasing travel speeds, it is likely these projects will only increase VMT, congestion, and pollution in the medium and longer terms. If the "regionally-adopted roadway capacity enhancements identified in regional transportation plans and sustainable community strategies are completed by 2050, [they would likely] increase VMT and GHG emissions from current levels, and could make achieving State GHG reduction targets more difficult."[22] The behavioral changes influenced by increases in roadway capacity are dynamic and have been historically neglected in project analysis. A highway expansion project of 10% is likely to raise VMT by 3-6% in the short term, and a 10% increase in VMT in just ten years.[23] These impacts are frequently underestimated or ignored in current project analysis.[24]

Therefore, additional VMT induced by roadway expansion must be accounted for in the Plan's transportation emissions modeling, otherwise the Plan's modeling will fail to assess the actual state of VMT in California and calculate scenarios that unrealistically project VMT.

For example, the Metro Highway Program in Los Angeles plans to increase freeway spending by 80% in 2022 with a predominant focus on highway expansion. According to an analysis of LA freeway projects using the ITS University of California's Induced Travel Calculator, these projects will not only induce additional VMT resulting in 2.7 million additional barrels of oil burned annually, or nearly 1.2 MMT CO2e of GHG emissions, but will increase congestion, displace over 150,000 people, and poison the air for the 1.2 million people living within 1,000 feet of a freeway in Los Angeles County.[25] This trend of building more lanes is not unique to the Los Angeles area; transportation spending statewide is inconsistent with aggressive VMT reduction assumptions and persistently deploys freeway expansion projects through lower income communities and communities of color. "Here in California, road projects have displaced more than 10,000 families over the last 30 years" and have had

[21] See, for example, https://www.destructionfornada.com/

[22] CalSTA, California Transportation Plan 2050 (February 2021), p 93, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf

[23] ITS UC Davis, Increasing Highway Capacity Unlikely to Relieve Traffic Congestion (October 2015), p 1, https://escholarship.org/uc/item/58x8436d#main

[24] ITS UC Davis, Environmental Reviews Fail to Accurately Analyze Induced Vehicle Travel from Highway Expansion Projects (January 2021), p 1, https://escholarship.org/uc/item/14b0x0nm

[25] Destruction for Nada, It's time for Metro to stop widening highways (2021), https://www.destructionfornada.com/

long-lasting impacts on the disproportionately Black and Latino neighborhoods these projects occurred in.[26] CARB should, if adopting a more aggressive VMT reduction target, explain how it intends to counteract the impact of this growing threat to our climate and equity goals. It is critical that CARB accurately assesses the current state of VMT in California and adjusts targets to consider anticipated increasing trends and community feedback.

In addition to setting a realistic baseline that accounts for planned VMT-increasing projects like these, CARB should highlight potential strategies for tracking VMT progress and collaborate with other agencies and with external entities that have the expertise to quantify VMT. The 2017 Update addressed the importance of VMT reduction, but referenced nonexistent or ineffective measures to track and reduce VMT including Sustainable Communities Strategies, roadway pricing like the Road Charge Program, and CEQA Guidelines updates.[27] In the 2018 Progress Report, CARB determined that the magnitude of change needed was not possible within current policy restrictions and incentive structures, but did not make corresponding updates to the 2017 Plan. With the Road Charge Program years away from enabling legislation and CEQA Guidelines consistently underestimating or completely ignoring project impacts on induced travel, the Plan should analyze and publish an assessment of VMT trends and available means of altering their trajectories. CARB should collaborate with other agencies and with external entities that do have the expertise to calculate VMT over time to ensure progress is accurately measured and informs modeling.

In the short term while interagency collaboration works to quantify VMT reductions, the Plan should highlight potential strategies to be considered for this critical metric in achieving the state's climate goals. In the long-term, the Road Charge Program will have a framework and tools to effectively collect VMT data, but this program is still in its pilot phase. The Plan must therefore develop potential strategies and tools in collaboration with external entities to measure statewide VMT progress that utilize available technical resources.

There are many VMT quantification tools across the country accurately assessing and projecting VMT based on planned road or land use projects; the National Center for Sustainable Transportation (NCST) selected six of these tools to evaluate for their implementation in California. Their research found that there is no "one-size-fits-all"

[26] Los Angeles Times, Freeways force out residents in communities of color — again (November 2021), https://www.latimes.com/projects/us-freeway-highway-expansion-black-latino-communities/#nt=00000175-c749-da42-a377-ff5f38920001-7030col1-main

[27] CARB, 2017 Climate Change Scoping Plan (November 2017), p 76-79, https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf?utm_medium=email&utm_source=govdelivery

tool for the complexities found among projects that impact VMT and recommend comprehensive validation techniques for implementation.[28] It is critical to incorporate California-specific tools into the Plan's implementation as these are fitted to specifically apply to capacity expansion projects within Californian metropolitan areas. CARB should consider the tools highlighted in this NCST research as well as consider existing tools to make implementation seamless and expeditious. Among others, CARB should use:

- The University of California's Induced Travel Calculator, which is calibrated for California's urbanized counties, is an excellent tool that demonstrates the direct connection between roadway capacity expansion and induced VMT.[29] CARB should work closely with CalTrans to explore opportunities for incorporating this tool into roadway expansion project analysis.
- The California Statewide Travel Demand Model (CSTDM) is an activity-based model that assesses VMT based on estimated vehicle trips.[30] This project is in progress at UC Irvine. As a project partner, CARB should consider utilizing this tool in the Plan when quantifying VMT for scenario modeling.

By adopting VMT tracking strategies in the Plan and collaborating with other agencies and external entities to measure VMT progress effectively, CARB can better align VMT reduction targets and modeling with VMT business as usual. In order to ensure the VMT reduction targets are realistic and feasible, the Plan must be informed by existing trends and potential tools at CARB's disposal.

B. CARB Should Assume CAPTI is Fully Implemented as a Conservative Policy Case for VMT Reduction Strategies and Build on CAPTI to Achieve Deeper VMT Reductions.

As CARB evaluates scenarios that are both ambitious and achievable, the Climate Action Plan for Transportation Infrastructure (CAPTI) can act as a guide for describing policies that, while not necessarily fully enacted, are endorsed by the State and ready to be implemented. While CAPTI is an integral step for advancing climate action, there is still room for bolder strategies where CARB has the opportunity to expand on them. Therefore, CARB should consider the strategies within CAPTI as the minimum baseline for implementation and should assess

[28] National Center for Sustainable Transportation, Evaluation of Sketch-Level VMT Quantification Tools (August 2017), p 39-40, https://escholarship.org/content/qt08k3q8m5/qt08k3q8m5_noSplash_4023eadcfc791bc9605c7ce6d763067e.pdf?t=pv1np6

[29] ITS UC Davis, The Induced Travel Calculator and Its Applications (February 2021), https://escholarship.org/uc/item/2nr6q5rc

[30] ITS UC Irvine, Linking Statewide and Regional Travel Models to Estimate Interregional Travel Impacts in California, https://www.ucits.org/research-project/2017-23/

CAPTI's approaches to determine targets where CARB can go beyond them. Specifically, CARB should work closely with CTC, CalTrans and CalSTA on the evaluation and facilitation of VMT reduction strategies that are highlighted in CAPTI, including but not limited to roadway pricing and road conversion.

CAPTI provides an excellent foundation for strategies that prioritize active transportation and sustainable mobility - strategies that can be improved further through the Plan and CARB's intervention but that can be more fully developed through regulatory action at CARB and other agencies.

One area where CARB can help to build upon CAPTI is through collaboration with CalSTA and CalTrans to incentivize the adoption of road conversion projects like "road diets" and "highways to boulevards" in formerly redlined areas and disadvantaged communities (DAC). "Road diet" strategies reduce large, existing roadways to smaller streets, thereby reclaiming previous lanes for alternative transportation uses like bike lanes, sidewalks, or transit infrastructure. This "complete streets" environment improves mobility and access by all road users, aligning closely with much of the CAPTI framework, especially Strategy 7 which focuses on strengthening transportation-land use connections, and can potentially be incorporated into the Plan's modeling of land use management.[31] The "Highways to Boulevards" pilot program introduced in CAPTI will identify underutilized highways and work with local entities to improve the conversion and capping of urban freeways. This pilot program is in its nascent phase and therefore CARB has the opportunity to collaborate at the start of the project, to help scale it significantly, and to ensure alignment with implementation of other targeted pollution reduction measures through AB 617 and other regulatory actions at CARB. CARB should also coordinate with agencies implementing urban greening, transformative climate communities, and creating climate resilience hubs to maximize the impact of these programs.

In developing VMT reduction strategies, CARB should also work closely with CTC, CalTrans, and CalSTA to recommend policies that protect marginalized and disadvantaged communities from displacement and community fragmentation that result from freeway expansion projects. Interagency collaboration should focus on expanding resources and partnerships with equity focused CBOs and other stakeholders to inform public engagement, investment strategies, and project implementation.

In general, CARB should work with OPR and other agencies to assess the racial disparities that have historically resulted from transportation infrastructure authorizations in the State. Specifically, CARB should offer guidance

[31] CalSTA, Climate Action Plan for Transportation Infrastructure (July 2021), p 26-27, https://calsta.ca.gov/-/media/calsta-media/documents/capti-2021-calsta.pdf

on the review of future vehicle infrastructure authorizations with clear steps on how these decisions will incorporate and ensure meaningful community engagement. Ultimately, California must reject the racially-discriminatory and inequitable approach to transportation infrastructure that has characterized the growth of our transportation systems over time. CARB should create and adopt a restorative framework for future infrastructure authorizations to begin undoing the decades of environmental racism and disparate health impacts that communities of color have suffered from previous approaches. CARB should play a pivotal and leading role in this transformation, as well as identify key first steps in this Plan update, specifically by incorporating the CAPTI framework.

The CalSTA and CalTrans Roadway Pricing Working Group will identify and develop strategies for equitable implementation of roadway pricing, with a particular focus on local and regional projects. CARB should outline potential steps to incorporate these future findings into the Plan's VMT reduction strategies. Low-emission zones (LEZ) and zero-emission zones (ZEZ) are forms of roadway pricing that have been effective in various cities around the world and are growing in popularity here in California.[32] The 2017 Scoping Plan Update mentioned the exploration of LEZs for heavy-duty vehicles, but no specific mechanism or process was described to make this a reality.

If CARB adopts a scoping plan scenario that relies on these approaches, it should simultaneously begin rulemakings or suggest legislative action that will enable and require actions that are necessary for the modeling inputs to be reflected in real-world GHG outcomes. California cities have the authority to implement congestion zones, however, LEZ/ZEZ implementation may need legislation. If so, CARB should support this effort. If not, CARB should start a rulemaking to begin implementation of these zones under the broad authority granted to the agency to achieve our mandatory statewide GHG reduction target in 2030.

Regardless of whether the current Plan update scenarios reflect a major role for LEZ/ZEZ, in order to realize the emissions reductions tied to the assumptions built into the 2017 Plan, CARB should seek any needed legislative authority to require cities to develop LEZ/ZEZs projects, prioritizing DACs with high congestion and low mobility. The development of zoning projects should be informed by comprehensive research and comparable projects and should be implemented at the local level to ensure implementation is tailored to meet the specific needs of the community with equity at the center of the strategy. Some examples of these resources are the Low-

[32] UCS, Low- and Zero-Emissions Zones (June 2021), p 4-7, https://www.ucsusa.org/sites/default/files/2021-06/low-and-zero-emissions-zones.pdf

and Zero-Emissions Zones Report by Union of Concerned Scientists,[33] Taming Traffic Report by the Institute for Transportation and Development Policy,[34] and the voluntary zero-emissions zone being implemented in Santa Monica.[35] CARB should build on the tools offered in these reports and projects through direct community engagement in areas most heavily affected by traffic pollution.

If CARB pursues a grant- or incentive-based strategy to promote LEZ/ZEZ adoption, proposed projects should be reviewed to ensure they promote sustainable transportation modes that are reliable, safe, and equitable. LEZ/ZEZ projects in DACs are opportunities to advance economic and racial justice as long as community concerns like clean vehicle accessibility, pollution displacement, and regressive charges are addressed through comprehensive engagement. Roadway pricing and road conversion projects that require CARB authorization or receive funds should work closely with stakeholders and invest revenue into local transit and active transportation improvement projects. CARB should also consider all other available options under existing authority that could incentivize local government adoption of LEZ/ZEZ strategies through a grant program or funding source contingent on project efficacy.

By adopting these approaches, CARB can both help to ensure that CAPTI is fully implemented and create a realistic pathway for going beyond CAPTI if it determines that the Plan should reflect levels of VMT reduction beyond what CAPTI alone can achieve.

C. CARB Should Acknowledge and Address SB 375 Implementation Gaps

Since the passage of the Sustainable Communities and Climate Protection Act (SB 375) over a decade ago, land use and transportation planning have fallen woefully short of incentivizing and enforcing the required mechanisms needed to lower VMT. California is not on track to meet the emissions reduction targets expected under SB 375, and the 2018 Progress Report identified barriers and metrics that highlighted where implementation was failing.[36] There is currently no framework for agencies overseeing housing or transportation

[33] UCS, Low- and Zero-Emissions Zones (June 2021), https://www.ucsusa.org/sites/default/files/2021-06/low-and-zero-emissions-zones.pdf
[34] ITDP, Taming Traffic (March 2021), https://www.itdp.org/publication/taming-traffic/
[35] LACI, Santa Monica Zero Emissions Delivery Zone Pilot, https://laincubator.org/zedz/
[36] CARB, 2018 Progress Report (November 2018), https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf

investments to determine if a project both aligns with SB 375 goals and achieves Scoping Plan objectives.[37] The 2022 Progress Report will be a critical resource for the Plan to prioritize updated challenge areas as we look to 2030 and 2050.

CARB should first identify projects that will result in VMT increases and then work closely with SGC, CTC and CalTrans to deploy land use strategies that emphasize low-carbon, active modes of transportation and affordable housing. More effective land use management alone could actualize an 8% reduction in VMT from the California Transportation Plan's 2050 baseline.[38] Programs that incentivize compact, mixed-use, infill development in areas that are accessible to public transit and active transportation routes will accommodate travel demand with cleaner, safer modes of travel for Californians of all income levels, as will the expansion of transit services and safe, shaded active transportation routes in currently underserved areas.

CARB should acknowledge that SB 375 implementation is not seeing the transportation emissions reductions needed and that improved enforcement would coordinate efforts in land use plans, affordable travel and housing, and new mobility options. The Plan should highlight methods of interagency collaboration to improve SB 375 implementation and ensure those strategies support our recommended ambitious VMT reduction goals of 7% by 2030 and 15% by 2050. CARB should prioritize these approaches by assessing authority and interagency action that can expand their implementation at a scale that matches VMT aspirations in the Plan.

CARB should also identify gaps in legislative authority or budget allocations that hinder SB 375 implementation. Lack of incentives, accountability, and available resources are barriers to effective implementation that CARB and MPOs are unable to address under SB 375.[39] While SB 32 provides expansive authority to CARB to take needed steps to achieve near term GHG reductions to achieve the 2030 target, legislative change may be needed to give CARB the budgetary resources to deploy more incentive programs or accountability metrics that will improve MPO adoption and implementation. CARB should identify those gaps and request additional authority and budget for these efforts, if needed.

[37] CalSTA, Climate Action Plan for Transportation Infrastructure (July 2021), p 25-26, https://calsta.ca.gov/-/media/calsta-media/documents/capti-2021-calsta.pdf

[38] CalSTA, California Transportation Plan (February 2021), p 92, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf

[39] CARB, 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals (January 2019), p 3-4, https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf

CARB should also recognize that SB 375 implementation severely lacks effective methods of community engagement and collaboration between local jurisdictions and MPOs. It is critical to prioritize community needs and implement those informed recommendations in under- and unserved areas. It will also be important to track community engagement to inform implementation of VMT reduction policies and models. VMT reduction strategies like roadway pricing can have unintended equity impacts that must be identified and addressed within the Plan. CARB should consider utilizing social science techniques to survey community perspectives and recommendations on accessibility, enforcement practices, expected impacts on other community resources, etc. that may result from the VMT reduction strategies under consideration.

Conclusion

In summary, California is at risk of falling short on the ambitious climate targets set for 2030 and beyond. A lack of coordination among agencies coupled with expected increasing VMT are significant barriers to achieving our goals. Both population growth and an excessive dependence on passenger vehicle travel is threatening California's ability to adequately reduce transportation emissions. The 2022 Scoping Plan Update is an integral part of combating climate change and must model scenarios that, while both ambitious and achievable, inform the public and lawmakers of policy and budgetary realities that attend the policy changes implied in these scenarios.

We commend CARB staff for their comprehensive workshop series which outlines scenarios and potential strategies within the 2022 Scoping Plan Update. NextGen looks forward to maintaining our participation with the 2022 update to ensure CARB continues to address the climate, health, and equity impacts of the Scoping Plan strategies. NextGen California therefore respectfully requests your consideration of the remarks made above.

Sincerely,

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