# Sustainable Transportation Advisory Council 2021 Recommendations

December 2021

# STAC Fueling and Powering Transportation Workgroup:
# 2021 Recommendations

## Workgroup Purpose

The Fueling and Powering Transportation Workgroup was created to develop greenhouse gas (GHG) emissions reduction recommendations related to electric vehicle (EV) charging infrastructure, incentives, biofuels and clean fuels policies, and vehicle fuels and efficiency, including emerging fuels like hydrogen, for the Minnesota Department of Transportation (MnDOT).

## Membership

- Rolf Nordstrom, Great Plains Institute (GPI), Co-chair
- Katie Frye, Minnesota Power, Co-chair
- Anjali Bains, Fresh Energy
- Chris Clark, Xcel Energy
- Holly Hinman, Xcel Energy
- Katie Bell, Cummins
- Lisa Thurstin, American Lung Association
- Michael Noble, Fresh Energy
- Ex-officio: Rep. Frank Hornstein, Minnesota House of Representatives

RECOMMENDATION #1:

# Lead by example by transitioning state fleet to zero-emission vehicles, including metrics that build on MnDOT's existing goals

## Workgroup Recommendation

*Why is this important?*

Transportation remains the number one source of greenhouse gas emissions in the state. Electrifying our passenger vehicles and other vehicles are a key part of our state's decarbonization strategy. EVs also have other benefits, from reducing air pollution that harms human health in high concentrations to cost savings related to cheaper fuel costs and fewer maintenance costs.

While the transition to EVs is underway, we are still at the inflection point, where EVs have gained much media attention and consumer interest in some parts of the state and population while remaining an unknown quantity to other parts. The state of Minnesota has a key responsibility to "show the way" on EVs by demonstrating how its own fleet can be electrified. Fleet operators in general will be among the first to commit to electrifying their vehicles, given their general sophistication on automobile technology and more rational decision-making that values the lower fuel and maintenance costs of EVs. Fleets are also among the most efficient way to electrify our transportation, given the ratio of decision-maker to vehicles – i.e., instead of convincing one consumer to buy one EV, effort can be focused on encouraging and supporting a few decision-makers into converting many vehicles to electric. Minnesota taking leadership in electrifying its own fleet could have a domino effect on other local fleet operators and on consumers in general purchasing more EVs. Even more importantly, by committing to an all-electric state fleet, Minnesota will "walk the talk" on the importance of electric transportation for meeting our state's climate goals.

Moreover, as Clean Cars Minnesota is implemented and more automakers send their EVs to the state, the state can serve as an EV customer for auto-dealerships around the state, thereby supporting state economic development and ensuring that dealerships have a known buyer for some portion of the EVs they will receive.

Finally, in light of COP26 and the federal government's goal of electrifying its fleet, it's important for Minnesota to step up and show it's a leader in the Midwest on issues of EVs. Committing to electrify the state fleet will not only be in line with what's required globally to combat climate change, but also support the state's large goal of electrifying 20% of all light-duty passenger vehicles on the road by 2030.[1]

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[1] https://www.dot.state.mn.us/sustainability/docs/mn-ev-vision.pdf

*How can this move forward?*

There are a total of 4,633 vehicles and equipment pieces in the MnDOT fleet as of 2020. Out of these 4,633 vehicles there are 1,314 light-duty vehicles; there are 67 regular gasoline vehicles, two diesel, 20 hybrid vehicles, 36 gasoline extended-range vehicles and 1,189 flex fuel vehicles.

With the baseline of this data compiled by AFLEET analysis we recommend the MnDOT fleet commit to switch 100% of light-duty vehicles and at least 25% of medium- and heavy-duty vehicles to EVs by 2030, and more quickly if technology readiness allows. In the meantime, state vehicles should use E85 in internal combustion engine (ICE) vehicles a minimum of 50% of the time (as opposed to the 6-11% of the time currently, depending on vehicle type). This would reduce emissions as the fleet transitions to EVs, and as the technology scales up and becomes more available.

*How can MnDOT advance equity and environmental justice by implementing this recommendation?*

It is important to acknowledge that the most direct beneficiary of this recommendation would be the state and the employees who use its fleet, who will benefit from a cleaner driving experience and lower operating costs. Auto dealers in the state may also benefit, as could EV charging providers that could install the charging infrastructure to support the state's electric fleet. We encourage MnDOT to privilege Minnesota-based EV charging companies in making its vendor selection.

Indirectly, those who live in communities most harmed by transportation pollution may benefit from improved air quality if some of the state's fleet has concentrated use in those communities and if those vehicles are electrified first. We recommend MnDOT optimize the potential air quality benefits of electrifying its fleet by prioritizing the replacement of gas-powered vehicles with EVs in communities most burdened by transportation and air pollution, which also tend to have higher proportions of Black, Indigenous, and People of Color (BIPOC) residents as well as under-resourced households. MnDOT could do so by analyzing the typical routes of its fleet and overlaying air pollution maps and the Minnesota Pollution Control Agency's (MPCA) "areas of environmental justice concern" map. Additionally, MnDOT could prioritize deployment of EVs in the communities most harmed by highway building in Minnesota, in particular the building of I-94 through Saint Paul and Minneapolis.

In addition to the above, MnDOT could consider geographic equity in its transition to EVs and ensure that its vehicles outside of the Metro are electrified at a similar rate as those within the Metro area.

RECOMMENDATION #2:

# Support medium- and heavy-duty EV market including education, incentives, charging infrastructure/travel corridors, partnerships

## Workgroup Recommendation

*Why is this important?*

Medium- and heavy-duty (MHD) vehicles make up 5% of vehicles on the road, but 24% of U.S. transportation emissions.[2] Supporting transformation in this market is imperative to deliver reduced emissions of greenhouse gases (GHG) that accelerate climate change.

A state leadership role for MnDOT reflects that MHD transportation electrification requires significant coordination – including eventual planning, logistics, data collection, and infrastructure development, as all are important components to increased electrification in this sector. This state leadership role could also support fleet operators' need for a coordinated approach to charging as they travel across freight corridors, for example.

*How can this move forward?*

MnDOT should support education about fleet electrification initiatives and opportunities aimed both at fleets operators and state agencies. Education initiatives could include developing a clearinghouse for electrification information for this sector based on stakeholder expertise and resources. MnDOT could also work with other relevant agencies who can assist in fleet electrification to create, identify, and promote tools to assist fleet operators to build the business case for transportation electrification investments.

In addition, MnDOT should work with other state agencies to establish incentives that cover the difference in upfront cost between conventional and electric MHD EVs, including clarity about how to navigate relevant state agencies. MnDOT should benchmark against other city and state programs (e.g. New York, Chicago).[3]

MnDOT should engage the freight industry in a dialogue to understand their interests and concerns, with the goal of accelerating the deployment of MHD EVs.

MnDOT should lead coordination of statewide and multi-state charging corridor development and develop directives for state agencies in support of state goals. This could involve convening partners/stakeholders, evaluating electrification needs, and developing a roadmap for the state to meet long term needs.

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[2] https://www.c2es.org/content/regulating-transportation-sector-carbon-emissions/
[3] http://www.drivecleanchicago.com/CleanTruck/Default.aspx

*How can MnDOT advance equity and environmental justice by implementing this recommendation?*

According to the EPA, the transportation sector is the largest contributor to GHG emissions in the United States, and MHD vehicles are responsible for 24% of those transportation emissions. The workgroup's vision includes prioritizing equity considerations when advancing electrification of the MHD sector. To advance this vision, MnDOT support for electrifying this sector should include focus on reducing emissions in communities disproportionately burdened by air pollution, where criteria pollutants pose increased health risks. In doing so, it could address environmental justice concerns that impact communities located near bus routes, freight corridors and distribution centers, for example. This effort has a clear environmental justice benefit when charging infrastructure is available along routes near disproportionately impacted communities where reducing diesel emissions has a greater public health benefit than elsewhere. The MPCA's Environmental Justice map could provide guidance to MnDOT.

RECOMMENDATION #3:

# Take a proactive leadership role in working with other states to establish a Midwest DC fast charging network that enables a seamless charging experience across the U.S.

## Workgroup Recommendation

*Why is this important?*

Range anxiety is among the top reasons that consumers cite when asked about whether they would consider purchasing an EV. Even though 80% of light-duty vehicle charging is done at home (for those with access to charging infrastructure), the existence of a ubiquitous, convenient fast-charging network in MN and across the country that offers a consistent consumer experience will be essential to the commercialization of EVs at scale.

Given the billions of dollars that automakers are investing in electrifying their vehicle offerings, with dozens of new models of all vehicle types expected between now and 2025, it is urgent that MnDOT collaborate with other states, the federal government and private parties to accelerate the development of a robust Direct Current Fast-Charging (DCFC) network across the Midwest that ultimately links with other regions of the country.

The lack of a robust charging network is also a barrier for MHD vehicles, both today and as more such vehicles hit the roads. As with light-duty EVs, MHD EVs have range and refueling time challenges. All EVs experience a drop in range during winter conditions.

*How can this move forward?*

Minnesota has already joined five other Midwestern states as a signatory to the REV Midwest MOU (Regional Electric Vehicle Midwest Coalition), committing the state to collaborate with Illinois, Indiana, Michigan, and Wisconsin to establish a DC fast-charging network, so there is now a formal mechanism in place to implement this recommendation. Thus, the STAC recommendation to MnDOT is to not only participate in executing the REV Midwest MOU, but also take a leadership role in ensuring that it is implemented in a timely manner. This will mean engaging in an ongoing way with all the relevant stakeholders—other state and federal agencies, utilities, electric vehicle supply equipment (EVSE) providers, consumer groups, environmental justice groups and others—to create the optimal charging network and user experience. MnDOT should report back regularly to the STAC and Minnesota Clean Cities Coalition on implementation of this recommendation.

MnDOT should seek to future-proof investments in the charging network to anticipate scale, changes in technology, and the need for standardization. MnDOT should complete designations of all highways as alternative fuels corridors to be EV-ready.

*How can MnDOT advance equity and environmental justice by implementing this recommendation?*

- VISION: All Minnesotans should have reasonable access to multiple sites of EV charging infrastructure regardless of zip code. MnDOT should work with other states to realize this same vision across the region.
- The first equity implication of this recommendation is simply the affordability of EVs in the first place since the charging infrastructure is only useful if households have the means to acquire an EV. MnDOT should consider disparities in car ownership in general and EVs in particular. This likely means additional policies that electrify transit (used by those who don't own cars), as well as policies that lead to the emergence of a robust secondary market for affordable EVs. This also means assuring that charging stations are installed at or near multi-unit dwellings so that EV benefits can be available to people who don't own a single-family home with a garage.
- This recommendation—if implemented poorly—could also negatively impact those living in multi-family dwellings that lack the electrical infrastructure to support EV charging, and EV car-sharing particularly in communities that have often received less public investment.
- Because of the contribution of MHD diesel vehicles to air pollution, which often affects frontline communities given their proximity to major roads, there should be special emphasis on advancing electrification in those market segments, including public transit buses, school buses, delivery trucks, and yard trucks.

MnDOT should proactively engage Black, Indigenous, and People of Color and other underrepresented communities in shaping its strategies for charging infrastructure deployment, including prioritizing vendor contracts with women- and minority-owned businesses.

Under the REV Midwest MOU, the five states promise to "work together to enable an equitable transition to EVs for all with specific consideration for communities that are historically disadvantaged."

With the right policies and infrastructure investments, EVs of all kinds can reduce criteria air pollutants, reduce GHG emissions, create job opportunities, increase mobility, and enhance the quality of life for frontline and environmental justice communities.

Some of those communities are located near main highways or freight and shipping facilities—areas whose emissions and other negative impacts could be reduced by the switch to electric power.

## Tier 2 Recommendations:

- Leverage existing collaborative partnerships to accelerate electrification of transportation
- Expand eligibility under the existing MN Railroad Service Improvement Program to include grants to railroads to decarbonize rail
- Collaborate with other state agencies (MN Department of Commerce, MPCA) to design and implement an EV incentive program (either for all Minnesotans or only for income-qualified families)

# STAC Reducing VMT and Improving Transportation Options Workgroup:

# 2021 Recommendations

## Workgroup Purpose

The Reducing Vehicle Miles Traveled (VMT) and Improving Transportation Options Workgroup developed recommendations that address transportation options, including biking, walking, and transit; MnDOT project planning and project selection process; and land use and transportation.

In 2021, the VMT reduction and transportation options work group's priority was to further advance the implementation of the adopted 2020 goals. The group focused on finding pathways to incorporate the existing STAC recommendations so they could be adopted into existing projects and investment plans currently underway.

## How can MnDOT advance equity and environmental justice by implementing these recommendations?

Our transportation system today continues to perpetuate inequity in the following ways:

- Historically and today, Black, Indigenous and People of Color (BIPOC) communities bear the worst impacts of highway expansions that destroyed homes and businesses during their construction. Today, these communities—such as the Rondo Neighborhood in St. Paul and North Minneapolis—have higher rates of air pollution and direct health impacts, such as asthma. These highways continue to have negative impacts on these neighborhoods—cutting them off from accessing jobs and opportunity, exposing them to high particulate matter emissions and noise, and reduced property values.

- Today, Native and Black Americans are at the highest risk of being hit by a car. Streets in majority BIPOC neighborhoods often do not prioritize the needs of the community. Instead they act as conduits for others to speed through these neighborhoods—reducing quality of life.

- BIPOC neighborhoods continue to suffer from a lack of reliable public transit and active transportation infrastructure.

- A focus on reducing VMT and increasing transportation options will help project designers take the full context of transportation projects into consideration and create design alternatives that truly prioritize the health and wellbeing of impacted communities.

Historically BIPOC communities have higher rates of poverty and continue to be marginalized in transportation decision-making. Transportation access is one the strongest indicators of being able to break out of a cycle of poverty. Reliable mass transit access helps connect people to jobs, school, groceries, and opportunity. Providing transportation choices also helps advance health equity. Our current auto-centric approach to transportation and land use does not support active transportation like biking and walking, increases disease related to physical inactivity, and exposes people, especially growing children, to pollution which causes asthma and other negative

health effects. In addition, multiple studies show that regions which invest in multi-modal choices including transit, walking, and biking are more economically competitive. In particular, those regions are better able to attract and retain young people who increasingly choose where they want to live first before looking for a job.

## Membership

Workgroup participants include STAC members, STAC ex-officio members, and invited technical experts:

- Ashwat Narayanan, Co-chair — Our Streets Minneapolis (STAC member)
- Emma Struss, Co-chair — City of Bloomington (STAC member)
- Dorian Grilley — Bicycle Alliance of Minnesota (STAC member)
- Katie Jones — The Center for Energy and Environment (STAC member)
- Peter Wagenius — Sierra Club North Star Chapter (STAC member)
- Russ Stark — City of St. Paul (STAC member)
- Sen. Scott Dibble — Minnesota State Senate (STAC ex-officio member)
- Vishnu Laalitha Surapaneni — University of Minnesota (STAC member)
- Sam Rockwell — Move MN (Technical expert)
- Wayne Hurley — (Technical expert)

RECOMMENDATION #1:

# Implement the VMT reduction goal and incorporate it into the Purpose and Need section of every major transportation project

## Workgroup Recommendation

*Why is this important?*

Identifying the need to reduce vehicle miles traveled as a key goal of every major project will help the creation of design alternatives that focus on providing mobility through a variety of zero and low carbon transportation options.

*How can this move forward?*

Our workgroup recommends that MnDOT implement this goal in the following ways:

- Create clear and consistent guidelines to incorporate the VMT reduction goal for all MnDOT led projects and provide training to staff involved in the planning, design, and community outreach for these projects.
- Estimate the VMT impacts of every new transportation project.
- Provide a progress report to the full STAC at every meeting of the body on how this recommendation is being implemented, and seek advice on its implementation along with the implementation of the proposed guidelines from STAC and its VMT Reduction Subcommittee.
- Move away from the traditional linear travel demand modeling process and take a holistic approach to measuring access to destinations by people and not just cars. For example, using accessibility as a measure.
- Create an induced demand calculator similar to one being used by Caltrans to estimate VMT increases from all new MnDOT-led transportation projects.
- In the alternatives selection process, identify ways to achieve the preliminary VMT reduction goal by evaluating alternatives that reduce per-capita VMT through Travel Demand Management (TDM), transit, biking, and walking. Some specific approaches to achieving this goal should include:
    1. A reduction in the number of through lanes dedicated to car travel.
    2. Addition of travel lanes permanently dedicated to use only by transit vehicles
    3. Convert existing general purpose lanes to HOV or HOT lanes.
    4. Addition of bike paths, lanes, trails, multi use paths, sidewalks, or other on and off road facilities that serve non-motorized travel.
- Dedicate funds for staff positions that will help create guidelines and maintain oversight for implementing and achieving the VMT reduction goals across the agency.

RECOMMENDATION #2:

# Partner with Metropolitan Council and other MPOs to adopt a similar VMT reduction goal and ensure that state and federal dollars coming into Minnesota are invested consistent with the VMT reduction goal

## Workgroup Recommendation

*Why is this important?*

Ensuring that funding sources are invested consistent with the VMT reduction goal is important to:

- Provide adequate financial resources for the creation of infrastructure that supports equitable, low and zero carbon transportation.
- Move away from funding infrastructure that may cause increased carbon emissions.

*How can this move forward?*

MnDOT can move this goal forward by:

- Proposing and requesting the funding splits needed for infrastructure necessary to achieve the VMT reduction goal.
- Using the maximum flexibility within existing dedicated transportation funds, including Motor Vehicle Sales Tax (MVST) funds to support transit and active transportation. Seek necessary clarification from relevant bodies if needed.

RECOMMENDATION #3:

# Build public and local support for providing transportation choice for travelers and reducing VMT through MnDOT's educational programs, traditional media, social media, local units of government and extensive direct outreach to, and partnering with, multiple stakeholders

## Workgroup Recommendation

*Why is this important?*

- Sharing testimonials and images of low-carbon transportation options allows stakeholders to identify behaviors and infrastructure that could benefit their communities.
- MnDOT is well positioned to develop and disseminate case studies and transportation statistics given its role in project implementation and data tracking.

*How can this move forward?*

- Build and maintain relationships with local governments and many other partners to disseminate information about:
    - the environmental, health, and equity problems associated with current transportation habits
    - case studies of low-carbon transportation projects
    - testimonials of Minnesotans getting around by walking, biking, using transit, etc.
- Develop billboards and other promotions highlighting the community, health, environmental, and economic benefits of low-carbon transportation
- Write op-eds and partner with others to write op-eds (quotes from the Commissioner, project managers, district) about transportation choices

JOINT WORKGROUP RECOMMENDATION:

# Develop a toolkit/guide for sustainable transportation projects

## Workgroup recommendation

*Why is this important?*

According to the EPA, the transportation sector accounted for the largest portion of total U.S. greenhouse gas emissions in 2019 at 29%.[1] Additionally, vehicle miles traveled in Minnesota, particularly in counties surrounding the metro, have been increasing since 2014.[2] To reduce the impact on climate change from the transportation sector, Minnesota needs to reduce emissions from cars on the road and create a transportation system that reduces incentives to drive.

*How can this move forward?*

MnDOT should create communication tools that provide information on why electrification and vehicle mile reduction strategies are important and how they can be incorporated into transportation projects. The communication tools should include the creation of two documents:

1. Leverage existing resources to create a PowerPoint or written document for MnDOT staff to use at project kick-off meetings that help project partners understand the following:

| Questions | Content Suggestions |
|---|---|
| Why is climate change a problem?<br>How will climate change affect Minnesotans?<br>Who is most vulnerable to climate change? | Visuals from MDH and MPCA |
| What is causing climate change? | Visuals from MDH and MPCA |
| What role does transportation play? | State GHG emissions data |
| What do we need to do? | Next Generation Energy Act Goal |
| How much time do we have? | IPCC 6th Assessment Report |
| How do we reduce GHG emissions from the transportation sector? | Explanation of electrification and reducing vehicle miles traveled |
| Why are both strategies needed? | STAC recommendations |

2. Develop a guide that shows project partners how electrification and VMT reduction strategies can be incorporated into projects

[1] https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions
[2] https://www.dot.state.mn.us/traffic/data/reports/vmt/VMT_Trend_Report_2018.pdf

*How can MnDOT advance equity and environmental justice by implementing this recommendation?*

This recommendation helps advance equity and environmental justice by:

- Ensuring project partners understand how transportation decisions affect climate change, and how climate change disproportionally harms vulnerable communities.
- Exposing project teams to examples of how they can reduce transportation-related pollutants and greenhouse gas emissions.
    - Increasing the likelihood that VMT reduction strategies are implemented, strategies that often provide more affordable alternatives than owning a car.
    - Increasing the likelihood that electrification strategies are implemented. Electric vehicles produce less pollutants than traditional ICE vehicles.