

# STAC FUELING AND POWERING TRANSPORTATION WORKGROUP: **2022 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**

- Brendan Jordan, Great Plains Institute (GPI), Co-chair
- Katie Frye, Minnesota Power, Co-chair
- Chris Clark/Holly Hinman, Xcel Energy
- Mindy Granley, City of Duluth
- Adam Luhring, Allstate Peterbilt Group
- Dan Murray, American Transportation Research Institute (ATRI)
- Lisa Thurstin, American Lung Association/MN Clean Cities Coalition

## RECOMMENDATION #1:

# Support increased investment in EV charging infrastructure, especially as it relates to federal infrastructure funding

- MnDOT should support efficient investment in make ready infrastructure and grid upgrades for EV charging, including consideration of future charging needs and, in doing so, partner with utilities on evaluating grid impacts of the NEVI Plan.
- MnDOT should request legislative funding for the 20% non-federal match for NEVI funds.
- MnDOT should provide periodic updates to the STAC of efforts to coordinate with other states on NEVI plans and explain to the STAC how it will meet Justice40 Initiative requirements through the NEVI Plan.

## Workgroup Recommendation

### *Why is this important?*

Increasing access to public charging infrastructure helps address a significant barrier to EV adoption: range anxiety, or the concern a driver may have about becoming stranded without reliable and convenient access to charging. By boosting EV adoption through investments in charging infrastructure, MnDOT can accelerate the benefits of clean transportation, including carbon reduction.

By partnering with utilities and planning proactively for a future-state, Minnesota can ready its grid for increased EV adoption and public charging demand.

By working with other states on NEVI plans, MnDOT will ensure knowledge, learnings, and best practices are shared and efforts to implement NEVI projects and build the charging network are coordinated regionally.

By carefully planning the NEVI rollout, MnDOT can help deliver on the promise of the Justice40 Initiative vision, that 40 percent of the benefits flow to disadvantaged communities.

### *How can this move forward?*

As MnDOT moves through the phases of NEVI implementation and related IJA activity, it can advance this recommendation directly by funding charging infrastructure development and supporting near term deployment of a charging network in Minnesota. MnDOT can partner with utilities on grid impact assessment and coordination to future-proof investments as it implements its approved plan.

MnDOT can conduct outreach with other state DOTs to share and receive planning and implementation updates to ensure a coordinated approach to charging investments.

MnDOT can prepare presentations on Justice40 Initiative compliance for the STAC.

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

By supporting increased access for all to a public charging network, MnDOT can advance equity principles. The workgroup's recommendation specifically calls for engagement with the Justice40 Initiative, which is focused on delivering benefits from federal investment programs like the NEVI to traditionally disadvantaged groups. MnDOT's current and future plans can include many features consistent with the Initiative, including criteria for siting projects based on accessibility, including siting at Multi Unit Dwellings, and investment in communities with disproportionate exposure to air pollution.

## RECOMMENDATION #2:

# Take a proactive leadership role in working with other states to develop a charging and refueling network to support low and zero carbon freight transportation

- Undertake a gap analysis to identify the numbers, types and ownership of charging stations needed to build a statewide EV charging network including light-, medium- and heavy-duty applications.
- MnDOT should play a leadership role in pursuing federal funding opportunities to build out a regional EV charging network, for light-duty, medium-duty, heavy-duty and non-road applications.
- Recognizing the recently signed multi-state hydrogen MOU, MnDOT should support development of a multistate plan to refuel hydrogen fuel cell vehicles, with an initial focus on freight.

## Workgroup Recommendation

### *Why is this important?*

According to US EPA, the transportation is the largest source of GHG emissions, representing 27% of total national GHG emissions. Light duty vehicles represent 57% of transportation emissions and are the largest emitters within the sector. Medium and heavy-duty trucks are the second largest emitting part of the transportation sector, representing 26% of transportation emissions. Transitioning to net-zero GHG emitting propulsion technologies for medium and heavy-duty trucks is crucial reaching mid-century decarbonization goals for the sector, and for the economy as a whole.

The two most-scalable technologies for decarbonizing trucking are hydrogen fuel cells and battery-electric propulsion. Both technologies are benefiting from private investment and new federal investments in the Infrastructure and Jobs Act and the Inflation Reduction Act.

Minnesota is part of two regional Memoranda of Understanding related to these technologies. It is a signatory to the REV Midwest MOU, focused on building out regional charging infrastructure for EV trucks. More recently, it is a signatory to a multi-state hydrogen MOU.

### *How can this move forward?*

The working group identified three major recommendations.

First, we would like to see MN DOT undertake a gap analysis to identify the charging needs to serve electrified medium and heavy-duty trucking.

Second, we would like to see MN DOT play a leadership role in pursuing federal funding opportunities to build out a regional EV charging network for medium and heavy-duty vehicles.

Third, we would like to see a similar effort, that includes a gap analysis, multi-state collaboration, and pursuit of federal funding, to support deployment of hydrogen and fuel cell vehicles in the medium and heavy duty trucking sector.

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

Diesel emissions are a major contributor to air pollution and subsequent health impacts. According to the Minnesota Department of Health's Life and Breathe Report, the highest estimated rates of air pollution-related death and disease are found in neighborhoods with the largest percentage of Black, Indigenous, and People of Color, low income, and uninsured residents, and people with a disability. The report found that air pollution played a role in 10% of all deaths in the Twin Cities metro area. According to the Minnesota Pollution Control Agency, vehicles and heavy duty equipment – particularly diesel vehicles - emit almost half the air pollution in Minnesota.

Zero emission vehicles, including electric vehicles and hydrogen fuel cell vehicles, can play a major role in reducing air pollution. Efforts should be made to target investments to achieve air quality improvements more rapidly in the areas experiencing the worst pollution and health impacts from pollution today. Communities heavily impacted by pollution should be consulted in development policies and programs to tackle this pollution. And these communities should also be involved in workforce development and economic development initiatives to allow them to play a role in the new clean transportation economy.

## RECOMMENDATION #3:

# Develop a Clean Fuels Policy

## Workgroup Recommendation

### *Why is this important?*

A Clean Fuels Policy is a technology-neutral market-based policy that sets a standard for lowering the carbon intensity of transportation fuels over time (for example, a 15% required carbon-intensity over ten years). The policy provides incentives for deployment of lower carbon fuels, benefiting fuel consumers and clean fuel producers.

States that are successfully reducing GHG emissions in the transportation sector are doing so by taking a portfolio approach and using a combination of policy tools. Along with efforts to reduce emissions by offering more alternatives to single-occupant vehicle travel, it is essential that vehicle travel itself be powered by low and zero emission technologies. A clean fuels policy is a comprehensive approach to reducing and eventually eliminating emissions from the energy used to power every type of vehicle operated in the state. It places a responsibility for emissions reductions in the fuel sector on petroleum refiners – the main current producers of transportation fuel today, and requires steady year-over-year reductions in GHG emissions. It creates a credit trading structure that allows any producer of lower carbon fuel that meets the annual GHG standard to generate credits and sell them to the obligated party. Thus, for anyone producing a lower carbon fuel, the program is experienced as a voluntary incentive program. This establishes a steady ongoing funding stream that can enable investment in innovative low carbon transportation technologies. Experience in other states demonstrates that a clean fuel policy results in massive new investments in every type of low carbon fuel technology. This includes investments in electrification of light-duty vehicles and charging infrastructure, deployment of electric trucks and buses in public and private fleets, expanded use of various liquid and gaseous lower carbon fuels, and reinvestment in lowering the carbon intensity of those fuels. It also allows for investment in so-called “opt-in” fuels like sustainable aviation fuel that are not regulated by the program but can generate credits. This helps Minnesota to attract new investment in innovative technology and to compete with other states seeking to attract that technology. We clearly lack a sufficient policy framework today to meet the states GHG reduction goals. No single policy will move the state to a zero emission transportation sector by itself. A portfolio of policies will be required, and a clean fuels policy is a critical element.

### *How can this move forward?*

- MnDOT should play a leading role in supporting and passing legislation in 2023. Legislation should be intended to:
  - i. Support the transition to a fully decarbonized transportation and agricultural system by mid-century.

- ii. Advance equity (e.g. affordability of and access to low and zero emissions vehicles, including public transit) and reduce negative health impacts from air pollution for overburdened communities while ensuring other vulnerable communities do not experience an increase in air pollution (e.g. ground-level ozone and particulate matter exposure from fossil fuel production and combustion).
  - iii. Include a soil health and water quality program that incentivizes sustainable and regenerative agricultural practices (with special emphasis on nitrogen air and water pollution) and crops that improve soil health and water quality from farming and biofuels production and distribution
  - iv. Include safeguards and incentives to protect and enhance environmental integrity, including biodiversity, and to promote job creation and equitable and sustainable economic growth.
  - v. Use peer-reviewed health and pollution data to inform development of the Clean Fuels Policy.
- MnDOT should support a Midwestern Clean Fuels Summit to bring leadership from multiple states together to craft a regional approach to a Clean Fuels Policy.

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

As more and more states move forward with clean fuel policies, there is a growing focus on equity in program design. This is important, because our existing transportation system disproportionately harms black, brown, indigenous and low-income people. There are examples from other states that Minnesota can draw on in seeking to create an equitable clean fuels policy. The Washington clean fuel policy legislation was developed in consultation with transportation equity and environmental justice organizations. The legislation requires that utilities invest 30% of their credit revenues in transportation electrification in disproportionately impacted communities.

Generally speaking, a clean fuel policy can benefit disadvantaged communities in the following ways: 1) by reducing air pollution that disproportionately harms racially marginalized communities along highways; 2) by targeting investments to communities that have traditionally been left behind in making transportation investments; and 3) by engaging black, brown, indigenous, and low-income communities in the clean transportation jobs of the future.

The workgroup's vision is for groups most harmed by our current transportation system to be included in the process of developing a clean fuel policy for Minnesota, and for the state of look to other states for the best ideas on how those communities can truly benefit from the program.

Secondary Recommendations: Recommendation #4

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

- MnDOT should set numeric targets for transitioning fleet vehicles to ZEV and report annually on progress. Targets should be reassessed annually.
- MnDOT should maximize the use of E85 in existing flex fuel vehicles and provide annual reporting on progress.
- MnDOT should utilize renewable diesel, hydrogen, and other low to no carbon fuels where ZEV vehicles are not available or economical.

Secondary Recommendations: Recommendation #5

## **Support clean transportation workforce development programs and initiatives**

- MnDOT should leverage NEVI funds to support EV workforce development and training programs designed to address vehicle and charger maintenance.
- MnDOT should identify IJA discretionary funds to support development of hydrogen and other clean fuel workforce development opportunities.
- MnDOT should include a focus on under-served or disadvantaged communities when identifying or supporting workforce development programs.

# STAC REDUCING VMT AND IMPROVING TRANSPORTATION OPTIONS WORKGROUP: 2022 Recommendations

## Workgroup Purpose

The Reducing Vehicle Miles Traveled (VMT) and Improving Transportation Options Workgroup is focused on providing recommendations that accelerate VMT reduction and improve equitable transportation options in Minnesota. In 2022, the work group's priority was to further advance implementation of the 2020 and 2021 recommendations. The new recommendations focus on institutionalizing VMT reduction efforts at MnDOT, with partners, and through education and research.

The current set of recommendations support policy direction articulated in MnDOT's Statewide Multimodal Transportation Plan (SMTP). The latest SMTP draft includes a VMT target commitment and acknowledges that a range of solutions that center health and equity are needed to meet the target.<sup>1</sup> The recommendations also foundationally recognize that approaches to reducing VMT and improving transportation options must be tailored to the distinct needs of rural, suburban, and urban communities. As strategies to provide safe, convenient, and equitable transportation options are tailored, they should also positively support tourism and economic vitality. The following recommendations are interdependent and are not listed in priority order.

## Membership

- Ash Narayanan, Co-chair — Our Streets Minneapolis
- Jodi Teich, Co-chair — Stearns County
- John Brunkhorst — McLeod County
- Diana Chaman Salas — Hennepin County
- Jason George — International Union of Operating Engineers Local 49
- Dawn Hood — Center for Transportation Studies
- Dorian Grilley — Bicycle Alliance of Minnesota
- Sam Rockwell — Move MN
- Russ Stark — City of St. Paul
- Emma Struss — City of Bloomington
- Roy Srp — City of Waseca
- Peter Wagenius — Sierra Club North Star Chapter

---

<sup>1</sup> Draft 2022 MnDOT Statewide Multimodal Transportation Plan ([https://www.minnesotago.org/application/files/1016/5840/7536/2022\\_Draft SMTP\\_NoAppendices.pdf](https://www.minnesotago.org/application/files/1016/5840/7536/2022_Draft SMTP_NoAppendices.pdf))

## Advancing equity and environmental justice

- Equity considerations apply to all workgroup recommendations.
- The transportation system and agency decisions have underserved, excluded, harmed, and overburdened some communities.<sup>2</sup>
- Our current transportation system that requires a personal vehicle for convenient and reliable access to jobs, education, community, and other needs is not equitable. The cost of car ownership (~\$11,000/year<sup>3</sup>) is not an affordable option for all.
- Communities of Color have higher poverty rates and continue to experience disproportionate burdens from our transportation system and climate change.<sup>4</sup>
- Non-driving options should avoid further shifting time or convenience burdens to Communities of Color, people with lower incomes, and rural community members.
- Equity considerations must apply across geographic contexts. The needs of communities, for example in areas of concentrated poverty in urban settings are different from those in Greater Minnesota or rural areas of the state. Environmental justice considerations must pay particular attention to these differences and tailor solutions to avoid perpetuating or creating new harms.

---

<sup>2</sup> Draft 2022 MnDOT Statewide Multimodal Transportation Plan ([https://www.minnesotago.org/application/files/1016/5840/7536/2022\\_Draft\\_SMTTP\\_NoAppendices.pdf](https://www.minnesotago.org/application/files/1016/5840/7536/2022_Draft_SMTTP_NoAppendices.pdf))

<sup>3</sup> American Automobile Association, Aug. 2022 (<https://newsroom.aaa.com/2022/08/annual-cost-of-new-car-ownership-crosses-10k-mark/>)

<sup>4</sup> Health Professionals for a Healthy Climate (<https://www.house.leg.state.mn.us/comm/docs/3s0wCrdXVke47c-eteUp3w.pdf>)

RECOMMENDATION:

# Prioritize VMT Reduction throughout MnDOT

## Workgroup Recommendation

### *Why is this important?*

The STAC VMT Reduction Workgroup has put forward six recommendations over the last two years. While MnDOT adopted several of these recommendations, the agency has been unable to make sufficient progress on those commitments.

This recommendation is crafted to ensure that MnDOT has the tools, staff, funding, and inspiration to deliver on past—and other current—STAC VMT recommendations.

First and foremost, for the VMT Workgroup recommendations to take effect, they must be recognized and understood as a top priority at the highest levels of MnDOT—beginning with the Commissioner and their office—and must be ingrained in all of the staff at the agency such that VMT reduction is an active goal and consideration in all projects and initiatives. Adopting VMT Workgroup goals must not be mere lip service.

Further, a new, cross-cutting, whole agency initiative like VMT reduction will require significant staff time to implement. This includes staff and knowledge in the MnDOT Central Office and throughout MnDOT's eight districts, each of which has unique considerations and land use types. Ensuring this staff and expertise is available for VMT reduction work will require reallocating existing agency staff and hiring new capacity.

Finally, MnDOT leadership and staff must determine the most effective and equitable ways to reduce VMT in Minnesota. Prioritizing research is critical to achieve high quality knowledge related to sustainable transportation, including VMT reduction. Providing dedicated funding for a multi-year research program (similar to the Transportation and Regional Growth and the Access to Destinations studies) will allow MnDOT to address Minnesota's pressing sustainability issues now, without compromising research funding for other critical topics that are funded through MnDOT's Office of Research and Innovation and partners, such as the Local Road Research Board (LRRB). Research results educate transportation professionals, influence policies and procedures, and inform decision-making. Dedicated resources can advance transportation innovation, demonstrating Minnesota's leadership and position MnDOT for federal research and demonstration funding opportunities.

Because delivering on this recommendation will allow other STAC recommendations to take effect we estimate that the CO<sub>2</sub>e reduction impact of this goal is quite high. For example, if Minnesota reduced VMT at the STACs original recommendation (20% statewide by 2050), that would reduce annual CO<sub>2</sub>e by an estimated 4.7M tons per year (the much lower number MnDOT is likely to adopt as a final goal (7% VMT reduction by 2050) will still deliver a 1.6M ton CO<sub>2</sub> reduction annually).

- 57.2B annual miles X 20% = 11.4B miles reduced per year (total annual VMT source: MnDOT (2021))
- 11.4B miles / 25.4 MPG = 450.4M gallons reduced per year (fuel economy source: [EPA](#) (2020))
- 472.4M gallons X 8.9KG CO<sub>2</sub> per gallon = 4.0B KGs CO<sub>2</sub> per year (emissions per gallon of gas source: [EPA](#) (2018))
- 4.0B KGs = 4.4M tons of CO<sub>2</sub> reduced per year (conversion from KGs to tons of CO<sub>2</sub>)

*How can this move forward?*

- **Prioritize implementation of the VMT reduction target throughout the agency**
  - Integrate meeting the VMT reduction target into all existing staff position descriptions through a department leadership directive, such that VMT reduction is a vision carried by the full senior leadership team which in turn flows through the agency as a whole.
  - Create new position or positions—and/or allocate existing staff—with responsibilities explicitly dedicated to VMT reduction, including allocating staff time and specific roles/responsibilities to prioritize interagency work and education/outreach efforts.
- **Dedicate and seek funding to research VMT reduction and transportation options**
  - Create a multi-year research program with dedicated funding to address both short- and long-term research questions. An advisory committee, which includes stakeholders beyond MnDOT staff, could identify and guide priority VMT reduction and transportation options research topics such as economic impact, funding, and workforce.
  - Position the state and the agency for other VMT-reduction-related research and implementation funds. This can include creating and maintaining partnerships at the local and national level, such as with the LRRB, providing research funding to seed projects and grow expertise, etc.
- **Incorporate VMT into the project selection process**
  - Create, or modify an existing, induced demand calculator and estimate VMT impacts for all new MnDOT-led transportation projects; use the calculator in project prioritization considerations.
  - Incorporate multimodal accessibility, prioritizing time and convenience, as a criteria in project evaluation in place of auto-only metrics. These multimodal accessibility metrics should include automobile accessibility and should be context-sensitive in recognition of the fact that the availability and feasibility of particular modes (transit, bike, walk, car, etc.) differs depending on land use type (urban, suburban, rural, small city, etc.).

RECOMMENDATION:

# Lead interagency collaborations to reduce VMT and increase transportation options

## Workgroup Recommendation

### *Why is this important?*

Vehicle electrification alone cannot get us to our greenhouse gas emissions reduction goals on time. Across Minnesota, people have manifested the need for walkable communities where residents don't have to travel long distances to access services and connect with opportunities.

Land use policy and the improvement of multimodal options are the biggest levers for VMT reduction. Policies to reduce VMT need to consider multimodal solutions and transit investments to promote mode shift, compact and mix-used development to reduce trips, and travel demand management (TDM) strategies. The implementation of these efforts will require collaboration across different jurisdictions.

Interjurisdictional collaboration, including regional and statewide partnerships, is necessary to reach our VMT reduction goals. Transformative reduction is likely to only be achieved through significant changes to federal, state, and regional policies, requiring coordination between our cities, counties, neighboring jurisdictions, the Metropolitan Council, and the State of Minnesota, among others.

Leading an interjurisdictional collaboration would have the following benefits for all parties involved:

- Build capacity to share methodologies that assess the potential GHG emissions reductions of various VMT reduction approaches, establish baseline metrics, and monitor emissions on an ongoing basis. (Smaller local government units would need greater access to technical and peer-to-peer support to advance their VMT reduction goals.)
- Develop shared best practices, policies, and goals.
- Increase our collective ability to inform and implement legislative action to implement specific TDM strategies, such as pricing incentives or remote work.

## *How can this move forward?*

In priority order:

- 1. Collaborate with local units of government to develop jurisdiction-specific VMT reduction targets consistent with the 7% statewide per capita target. Work with government partners to identify a shared methodology for VMT assessment and implementation strategies.**
  - a. Begin with a metro-centered VMT reduction target (Metropolitan Council service area, in coordination with Metro Transit and other local jurisdictions, counties, and municipalities in the metro area);
  - b. Followed by (8) other Minnesota, metropolitan planning organizations (MPOs), to develop and adopt jurisdiction-specific VMT reduction targets;
  - c. Offer support to and work with smaller communities.
  
- 2. Support local units of government to implement VMT reduction strategies.**
  - a. For all: develop an implementation toolkit. Include Minnesota-specific success stories, guidance for prioritizing compact-walkable and transit-oriented development (TOD)/multimodal upgrades (including along BRT corridors), and tools for applying TDM strategies in different contexts, including urban, suburban, exurban, smaller cities, and rural.
  - b. Metro-specific: work with the Metropolitan Council to revisit the [2014 Highway BRT Study](#), developed by both agencies to evaluate transit projects on MNDOT right-of-way. Work with the Metropolitan Council to prioritize initial BRT projects for implementation.

RECOMMENDATION:

# Expand outreach and education activities to promote transportation options and VMT reduction

## Workgroup Recommendation

### *Why is this important?*

Both the Governor's Climate Action Framework and the Statewide Multimodal Transportation Plan (SMTP) recommend that current funding include education and community engagement that will maximize the return on investment in multimodal infrastructure. This is especially important because many people in Minnesota are used to driving vehicles and are not aware of the transportation options that already exist. Those that are aware of the alternatives don't always feel those options will properly serve their needs. Behavior change is difficult at best unless alternatives to the status quo are demonstrated to be effective and convenient, and this can only be done through robust public education campaigns.

The education should focus on the options available, their convenience/effectiveness and benefits to the individual rather than VMT reduction or reduction of greenhouse gas emissions. In this manner it is likely you will see incremental changes in even those who don't believe that GHG emissions need to be reduced or that VMT reduction will contribute to the solution. As an example, once individuals begin using trails and bike lanes for recreational use, they may realize that those trails and bike lanes are more convenient for a quick trip to the grocery or convenience store, or even for commuting.

As the public education campaign is heard more and more across the state, and people are more readily aware of the convenience and benefits of other modes of transportation, a new/additional aspect of the campaign can focus on countering the negative beliefs associated with VMT reduction. Eventually people will realize health benefits and personal cost savings and will be more likely to become part of the overall solution. None of the other goals associated with this workgroup's recommendations will become reality without the general public understanding their options and the benefits of using them.

### *How can this move forward?*

- **Dedicate content on MnDOT's website and in outreach materials**
  - Create a website section to educate about VMT reduction, transportation options and land use. Dedicate a section to best practices and success stories to facilitate peer learning.
  - Promote content about multimodal co-benefits, as part of in-person or online project outreach.

- **Identify resources to fund hands-on learning opportunities that support mode shift**
  - Partner outreach across the state (chambers of commerce, school boards, large rural employers) to educate on benefits (to them) of multimodal activities and build comfort with mode shift.
  - In person hands on learning is also important. Partner with schools and workplaces to promote multimodal transportation (bike to work/school days/transit passes/bus, bike, and walk safety education) that builds a level of comfort in using other modes of transportation.
  - Partner with transit agencies across the state to develop engagement strategies that promote transit use, demonstrating safety and convenience.
  - Partner with MPOs across the state to promote use of active transportation amenities that are already available, which will in turn create support for expanding those networks.
  
- **Lead by example**
  - Model mode shift by promoting amenities within the agency that support multimodal travel (locker rooms, showers, bike racks/storage, nearby transit stops, etc.).