

**United States House of Representatives
Select Committee on the Climate Crisis**

**Hearing on June 30, 2021
“Transportation Investments for
Solving the Climate Crisis”**

Questions for the Record

**The Honorable Margaret Anderson Kelliher
Commissioner
Minnesota Department of Transportation**

The Honorable Kathy Castor

- 1. Commissioner Anderson Kelliher, in your testimony, you highlighted the role that the Pathways to Decarbonizing Transportation project and the Sustainable Transportation Advisory Council play in mitigating transportation carbon pollution. How are these MnDOT initiatives producing concrete steps to achieve decarbonization and resilience goals?**

Minnesota passed the bipartisan Next Generation Energy Act in 2007 to establish economy-wide goals to reduce greenhouse gas (GHG) emissions from a 2005 baseline year by 15% in 2015, 30% by 2025, and 80% by 2050. In 2017, MnDOT adopted the state goals for the transportation sector, the first state agency to adopt economic sector specific goals in Minnesota. In 2019, the agency led a multi-agency *Pathways to Decarbonizing Transportation* effort to develop specific strategies to make progress towards the transportation sector goals established in 2017. The *Pathways* project took the following approach that is outlined in detail in the 2019 report.

- Host workshops with state and national transportation stakeholders to identify potential strategies to make progress towards state goals.
- Model a suite of strategies that could achieve the state’s 2050 goal for 80% reduction of GHG emissions from the transportation sector by 2050.
- Host in-person and virtual public engagement around the state to get feedback on the overall modeled suite of actions, individual strategies, and hear about new strategies that were missing.

The final actions and recommendations were developed based on feedback from the public and stakeholders from around Minnesota.

- Create the first electric vehicle (EV) incentive for managed lanes in the US (\$250 credit)
- Adopt a new process to evaluate GHG emissions from transportation projects and climate change impacts to projects during environmental review (e.g., NEPA).

- Develop a new funding program to support clean transportation investments by rural and environmental justice communities.
- Encourage more investment and support for low carbon biofuels.
- Recommend the state adopt Clean Cars Standards (i.e., low and zero-emissions vehicle standards) that went into effect on July 26, 2021.
- Create a Sustainable Transportation Advisory Council (STAC) for local leaders to advise MnDOT on additional strategies to reduce carbon pollution from transportation with a focus on economic development, environmental justice, and equity.

More information about the MnDOT Pathways to Decarbonizing Transportation is available here: <http://www.dot.state.mn.us/sustainability/pathways.html>

The STAC is co-led by the MnDOT Commissioner and the President of Minnesota’s largest utility, Xcel Energy, and includes leaders from the public, private, and nonprofit sectors, construction contractors, city and county government, and community-based organizations. State elected officials serve in ex-officio capacity. MnDOT facilitates the STAC group but does not contribute to the recommendations. Each year, the STAC presents recommendations to MnDOT and then MnDOT issues a formal response that indicates if/how the STAC recommendation will be adopted and implemented. The following are examples of recommendations that were accepted in whole or in part by MnDOT in 2021.

- Accept recommendation to develop a preliminary goal to reduce vehicle miles traveled (VMT) 20% by 2050.
- Collaborate with external groups on efforts to understand specific opportunities and challenges to co-locating broadband and electricity transmission infrastructure in highway rights-of-way.
- Re-evaluate the MnDOT approach to congestion management, including clarifying existing policy that uses highway expansion as the last priority/final option to address congestion.
- Agree to collaborate with other Midwestern states on memorandums of understanding to promote EVs, including Medium- and Heavy-Duty EVs.
- Agree to lead public engagement to help develop a low carbon fuel standard (Clean Fuels Standard) in Minnesota.

More information about the MnDOT Sustainable Transportation Advisory Council can be found here: <http://www.dot.state.mn.us/sustainability/advisory-council.html>

Both highlighted processes were successful in developing specific actions to decarbonize transportation because they included the public and the private and nonprofit sectors in the decision making. Despite these efforts, it should be noted that the state is still not yet on-track to meet the state goals for GHG emission reduction.

2. Commissioner Anderson Kelliher, you testified that your approach to environmental justice is guided by President Clinton’s 1994 Executive Order “Federal Actions to Address Environmental Justice in Minority Populations and

Low-Income Populations.” This Executive Order aimed to identify and address disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on minority populations and low-income populations. How has MnDOT pursued equitable and fair treatment and meaningful engagement of these communities in its planning and projects to reduce carbon pollution and increase climate resilience?

Along with President Clinton’s 1994 Executive Order “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), required more collaboration and partnership for state DOTs with affected communities and partner agencies. As a result, MnDOT created the Area Transportation Partnership (ATP) model for planning and programming that adds to the federally required continuing, comprehensive, and cooperative (3C) multimodal transportation planning process for state DOTs and metropolitan planning organizations (MPOs).

Working with ATPs and MPOs is complimented by planning and project development with communities and stakeholders. MnDOT approaches engagement for planning and project development with a holistic approach to community health, recognizing that communities of color and low-income communities have been and continue to be impacted disproportionately by construction projects, particularly by unhealthy air quality from transportation-related emissions.

MnDOT works to pursue fair treatment and meaningful engagement in project development and construction mitigation that recognizes climate change, physical health, accessibility options, safety, and equity. This work is specifically addressed where MnDOT is building more infrastructure for people walking, biking and using transit, implementing road diets (reducing lanes), reducing idle time for all motor vehicles with improvements (such as signal timing coordination, roundabouts, HOV lanes), stormwater management improvements, and other considerations. A few recent projects highlight this work:

- Rethinking I-94 is a robust, multiyear engagement, visioning, and project development endeavor that is currently in Phase 2 of completing the environmental documentation process. MnDOT started Rethinking I-94 in 2016 to develop a new vision for I-94 between Minneapolis and St. Paul to prioritize the well-being of those who live, work and play along the corridor with the goal of enhancing mobility, safety and interconnectivity. Rethinking I-94 intends to reconnect neighborhoods, support communities, and ensure residents have a meaningful voice in transportation decisions that affect their lives. Livability is a main goal and theme in this work in which economic vitality, sense of place, safety, equity, and public health and the environment are all considerations. Engagement with the communities around I-94 include the historic African American Rondo neighborhood in St. Paul and other communities and is paramount to this work.
- In addition to major highway projects like Rethinking I-94, MnDOT works on projects on state-owned roads that function more like city streets. An upcoming project in St. Paul is the East 7th/Arcade St (Hwy 5 and US Hwy 61) project that will improve pavement condition,

safety, bicycle and pedestrian facilities, streetscape, reconfigure lanes with a road diet and incorporate green infrastructure solutions. Working with the City of St. Paul and community organizations in the engagement process, MnDOT used an equity lens and worked to minimize barriers to participation. One example is working with the Indigenous Roots Cultural Arts Center, to reach diverse communities within the project area, as well as offering project materials and a survey in languages spoken throughout the corridor including English, Spanish, Somali, Hmong, and Karen. These engagement approaches reduced barriers to participation in the process. From that engagement, MnDOT learned about the community desire for sidewalks and street crossing improvements and additional streetscaping like trees and other greening to help combat urban heat island impacts.

MnDOT also has a variety of agency-wide policy and planning initiatives underway that support equitable and meaningful engagement of historically underserved communities. These efforts recognize that transportation decision-makers need to consider how actions will impact our people, economy, and environment. Examples include:

- In 2021, the MnDOT Office of Communications and Public Engagement and the Office of Civil Rights updated the department's Public Engagement Policy (<http://www.dot.state.mn.us/policy/operations/oe008.html>) and created a companion Public Engagement Planning Handbook (<http://www.dot.state.mn.us/publicengagement/documents/planning-process/PEplanninghandbook.pdf>). The updates more explicitly articulate MnDOT's commitment to ensuring full and fair participation of all communities, including those that have been historically underrepresented in the public engagement process. The guidance document contains strategies, worksheets, and resources MnDOT staff can use to develop and execute inclusive public engagement plans.
- MnDOT is in the process of updating the highest transportation policy plan in the state—the Statewide Multimodal Transportation Plan (SMTP). The SMTP identifies the state's transportation objectives and strategies from 2022-2041. Information from the 2017 SMTP is being used to frame the 2022 update. Public engagement for the 2017 SMTP highlighted climate change and equity as key trends in transportation, and were selected as two focus areas for the 2022 SMTP. As a result, public engagement materials for the 2022 SMTP highlight climate change and equity considerations (<https://minnesotago.org/stories/#10098479399>). A work group was established for each focus area to develop strategies for inclusion in the final plan. Conversations with partners, stakeholders, and the public have deepened considerations for climate change and equity even further to identify specific actions and call outs in the 2022 SMTP. The document format is expected to clearly communicate MnDOT's commitments to climate action, transportation equity, and the intersection of these two topics.

3. Commissioner Anderson Kelliher, you previously chaired the Governor's Broadband Task Force, and you testified that broadband should be thought of as transportation infrastructure. Highway rights-of-way represent prime locations for infrastructure like broadband, electric transmission, and solar energy. How is

Minnesota approaching the opportunity to deploy multiple types of climate-critical infrastructure at the same time?

Broadband

With nearly 90% of the costs of broadband infrastructure stemming from the construction of middle mile, long-haul fiber installation, highway rights-of-way pose unique and significant opportunity to leverage public investment to benefit broader communities. Minnesota recently completed a year-long study to assess the fiber optic infrastructure in its highway rights-of-way to assess gaps and analyze the feasibility of partnering with communities, local governments, and private industry to advance broadband. Studies like these look at how public-private broadband partnerships can support the buildout of middle-mile fiber and small cells to connect government facilities, and community anchor institutions like schools and hospitals. These opportunities also allow states to invest in fiber that supports future advancements like intelligent transportation systems (ITS) and connected and automated vehicles, all of which aim to reduce the impacts of climate change in addition to supporting transportation safety and equity.

When states make the investment to install conduit along their highway rights-of-way, private companies can use excess conduit which leads to significant return on investment for governments, but it also allows state and local governments to leverage private infrastructure at a fraction of the cost of installing it on their own. This infrastructure has enormous benefit to cost: it helps to support the expanded grid and charging infrastructure for EVs, it allows DOTs to install sensor technologies like road weather information systems to detect floods and other weather events, and it also supports technologies in connected and automated vehicles that are being developed on EV platforms – all of which support the U.S. goals of climate resiliency and sustainability.

States like Minnesota are looking into the opportunity to partner with industry to share their infrastructure along highway rights-of-way in a variety of ways, through partnerships, leasing, resource sharing agreements and others. In Minnesota we take a novel approach to these partnerships to expand broadband, using a P4 concept – instead of a traditional public-private partnership (known as aP3), we look at how these partnerships can benefit communities in a public-private-*people* partnership. This allows us to leverage highway rights-of-way in innovative ways to advance underlying fiber infrastructure that supports expansion of the grid, while also supporting new and innovative technologies like connected and automated vehicles.

Due to the above, broadband should be considered critical transportation infrastructure to support our goals of growing a more sustainable, equitable society, while also advancing goals to support future transportation technologies like autonomous vehicles.

Transmission Lines

Additionally, MnDOT has recently joined a feasibility assessment evaluating the technical and regulatory considerations for adding buried HVDC transmission lines to highway right of way, to

leverage the full value of existing highway assets. As studies have shown, new power transmission is climate-critical infrastructure needed to enable both grid decarbonization [1][2][3] and transportation electrification [4][5]. Through its NextGen Highways work [6], MnDOT is evaluating whether its existing highway right-of-way can be used to dramatically accelerate the siting and permitting of new transmission. If possible, this could reduce the decade-long transmission development timeline down to one-two years – an 80-90% reduction. Without a significant reduction in the transmission development timeline, Minnesota will not have the electric grid it needs for the state, its cities, and its corporations to achieve their climate goals. Considerations around relocation expenses, safety and dig-once coordination are central to the analysis. MnDOT’s action steps in the short term will include greater coordination with statewide broadband expansion plans, updates to MnDOT utility accommodation policies and process, and analyzing priority corridors to pilot the co-location of fiber with buried HVDC transmission lines.

Solar

Finally, MnDOT is exploring how solar energy development on our right-of-way can help meet MnDOT energy needs, reduce long-term operational costs, and reduce GHG emissions. The agency worked with solar developers to install 2 MW of community solar gardens at two locations on MnDOT right-of-way. Community solar gardens allow individuals, businesses, and government agencies to purchase solar energy and receive bill credits for the energy produced. MnDOT also receives bill credits for 7.4 million kWh produced annually from community solar gardens on non-MnDOT property throughout Minnesota. This is equivalent to approximately 24% of the agency’s total annual electricity use. Community solar garden development in Minnesota reduces energy costs for the agency, creates a cleaner electricity grid, and supports climate resilience by allowing community members to subscribe to a local energy resource. MnDOT will continue to seek out opportunities to support solar energy on and off the MnDOT right-of-way.

[1] ESIG. Transmission Planning for 100% Clean Energy. (April 2021)
<https://www.esig.energy/transmission-planning-for-100-clean-electricity/>

[2] Brown, P. and Botterrud, A. *The Value of Inter-Regional Coordination and Transmission in Decarbonizing the US Electricity System*. Joule. (2020).
<https://doi.org/10.1016/j.joule.2020.11.013>

[3] NREL. Interconnection Seam Study. (November 2020).
<https://www.nrel.gov/analysis/seams.html>

[4] West Coast Clean Transit Corridor Initiative. Fact Sheet. (June 2020)
<https://westcoastcleantransit.com/>

[5] National Grid. ‘Full Speed Ahead: Enabling Future Fleet and Highway Electrification.’ D-TECH+ Series, July 22nd, 2021

[6] MnDOT. Responses to Sustainable Transportation Advisory Council Recommendations – Executive Summary. (April 2021).

<http://www.dot.state.mn.us/sustainability/docs/advisory%20council/STAC-response-exec-summary.pdf>

- 4. Commissioner Anderson Kelliher, your testimony notes the role that incentives and Federal investment can play in decarbonizing transportation. For decades, the U.S. tax code has provided the oil and gas sector billions of dollars in subsidies. For example, oil companies have been able to write off “intangible drilling costs” since before World War I. These subsidies have a high cost for Americans—nearly \$650 billion in 2015, according to a report from the International Monetary Fund.**

What benefits do you expect Minnesotans to see from investments to decarbonize the transportation sector?

In Minnesota, we view our actions from the shared lens of climate action, equity, and economic development. The opportunities for co-benefits in all these areas are immense, even if they are currently difficult to quantify.

Clean energy economy

There are currently an estimated 60,000 clean energy jobs in Minnesota. Clean energy jobs in Minnesota have grown 2.5 times faster than overall state employment and supporting clean energy job growth is a priority for the state. According to the 2020 Clean Jobs Midwest Report, advanced transportation is Minnesota’s third-largest clean energy sector with 3,191 jobs, including an estimated 742 tied to EVs (more information on EV jobs outlooks and information from the Bureau of Labor Statistics and the International Energy Agency).

Minnesota industry has a small but growing footprint for EV-related jobs, but several national and Minnesota-based firms have a growing presence in Minnesota.

- New Flyer (Crookston, Saint Cloud) is North America’s largest transit bus manufacturer and develops EV charging and mobility solutions. About 7,300 of their 41,000 in-service transit buses are electric and 1,600 are zero-emission. The Crookston team of over 300 people builds 20 buses a week, including all three zero-emission types: fuel cell-electric, battery-electric, and trolley-electric.
- Tesla (Brooklyn Park) has over 200 full-time employees in Minnesota; most working in EV manufacturing.
- Zeus Electric Chassis (Chisago City) specialize in medium-duty electric trucks for utilities and government fleets. They are the only medium-duty electric work truck chassis manufactured in North America.
- Niron Magnetics (Minneapolis) spun out of the University of Minnesota. They are developing the first advanced manufacturing process to mass produce permanent magnets with iron nitride that can be made at lower cost than rare-earth magnets. The magnets could revolutionize design of new electric motors.

- ZEF Energy (Edina) develops and deploys EV chargers and software for drivers, utilities, and businesses.
- Thermo King (Minneapolis) develops transport refrigeration and heating for trailers, trucks, buses, rail cars and shipboard containers. Products include electric options for auxiliary power units, electric standby for refrigeration units, and electric HVAC systems for coach and transit applications.

Most recently, Synapse Energy Economics, Inc. studied the likely macroeconomic effects of the adoption of LEV and ZEV standards in Colorado. The analysis accounted for the effects associated with increased up-front costs of lower emitting vehicles, reduced gasoline expenditure, and increased spending on electricity, and found that the rule would result in average annual increases of approximately \$72 million in Colorado's GDP and an increase of 1,700 jobs in the state. Based on the composition of Minnesota's economy and general similarities to Colorado's economy, we would expect similar macroeconomic effects of LEV and ZEV standards in Minnesota. Moreover, another recent study for Minnesota, but not specifically analyzing the impact of a ZEV standard, found overall net social and economic benefits from increased adoption of EVs in Minnesota. (<https://www.pca.state.mn.us/sites/default/files/aq-rule4-10m.pdf>)

Another example of economic benefits from decarbonizing transportation includes jobs from the biking industry, where Minnesota is a national leader. A survey of bicycling-related manufacturers, wholesalers, retailers, non-profit and advocacy groups found the industry produced a total of \$779.9 million of economic activity in 2014 (<http://www.dot.state.mn.us/research/TS/2016/201636.pdf>).

Further, while difficult to quantify, the potential to reduce carbon pollution from transportation through reducing congestion and vehicle miles traveled presents a tremendous opportunity to reduce long-term transportation system costs. Reducing the need to build new roadways, reducing wear and maintenance on existing roadways, and exploring lower cost options for reducing the need to add lanes and capacity to roads and bridges presents a major costs savings opportunity. As we evaluate data from the massive shift to telework during the COVID-19 pandemic, we are seeing opportunities to reduce trips and shift when travel is occurring, which can eliminate the need to expand road and bridges which is frequently done to address peak period travel needs.

Health benefits from lower pollution

Decarbonizing transportation also presents opportunities to improve health outcomes through the design and construction of safer multimodal streets and safe, convenient, and affordable transit, especially electric transit.

Recent data from the Minnesota Pollution Control Agency (MPCA) as part of their rulemaking process to adopt low- and zero-emission vehicle standards indicates that the rule would result in an annual emission reduction of 998 tons of NMOG + NOX and 637 tons of PM in 2034. These emissions reductions equate to 6,059 tons of NMOG + NOX and 3,245 tons of PM reduced over

the first 10 years of implementation. Of these estimates, 3,032 tons of PM reductions would occur from the tailpipe of the vehicles.

Over the first 10 years of implementation of these standards, the MPCA estimated the emissions reductions could prevent between 62-348 premature deaths from the respiratory and cardiovascular health impacts of air pollution. Numerous less severe health outcomes caused by air pollution, including emergency room visits, hospital admissions, non-fatal heart attacks, acute bronchitis, respiratory symptoms, asthma exacerbation, and work-loss days, could also be avoided. The economic value of all these avoided health impacts is estimated to be between \$560 million to \$3.2 billion.

Over the same 10-year period, MPCA estimates the rule reduce carbon dioxide equivalent (CO₂e) emissions by 8.4 million tons of GHGs reduced over the first 10 model years of implementation. Using the 3% discount rate fSCC values, MPCA estimates the total reduction of GHG emissions resulting from the proposed rule over the first ten years of implementation would equate with an economic benefit of approximately \$500 million.

(<https://www.pca.state.mn.us/sites/default/files/aq-rule4-10m.pdf>)

Additional benefits being explored in Minnesota and nationally include the potential for decarbonization efforts to reduce the cost and time burden to all families, especially those with lower incomes and from BIPOC communities, from a dependence on single occupancy vehicles. As an example, for the average Minnesota driver, a 20% VMT reduction could mean driving about 45 fewer miles (or about 1 hour less) per week in 2050 (29 years from now) than they do right now.

References

<https://www.pca.state.mn.us/sites/default/files/aq-rule4-10m.pdf>