

2024

Sustainability REPORT



DEPARTMENT OF
TRANSPORTATION

2024

Executive Summary



At MnDOT, we understand that transportation powers Minnesota's economy, connects communities, and shapes quality of life. With that comes responsibility. Every mile of road, every facility, and every vehicle leaves an environmental footprint. That's why sustainability is at the heart of how we plan, build, and operate our transportation system.

This report reflects our commitment to lead by example. We are integrating sustainability into everything we do, from reducing energy and water use in more than 900 facilities to advancing cleaner fleet operations and restoring native vegetation along our roadsides. These efforts protect natural resources, improve public health, strengthen climate resilience, and deliver long-term savings for taxpayers.

MnDOT is proving what's possible. We've exceeded current goals in reducing greenhouse gas emissions, lowering energy intensity, and cutting water consumption across our facilities. These achievements show that when we commit to sustainability, we deliver results.

We're also driving innovation in construction. Through research at the MnROAD Facility and the adoption of sustainable pavement techniques, MnDOT is setting a national standard for roads that last longer, use fewer resources, and generate fewer greenhouse gas emissions. These advancements prove sustainability and performance go hand in hand.

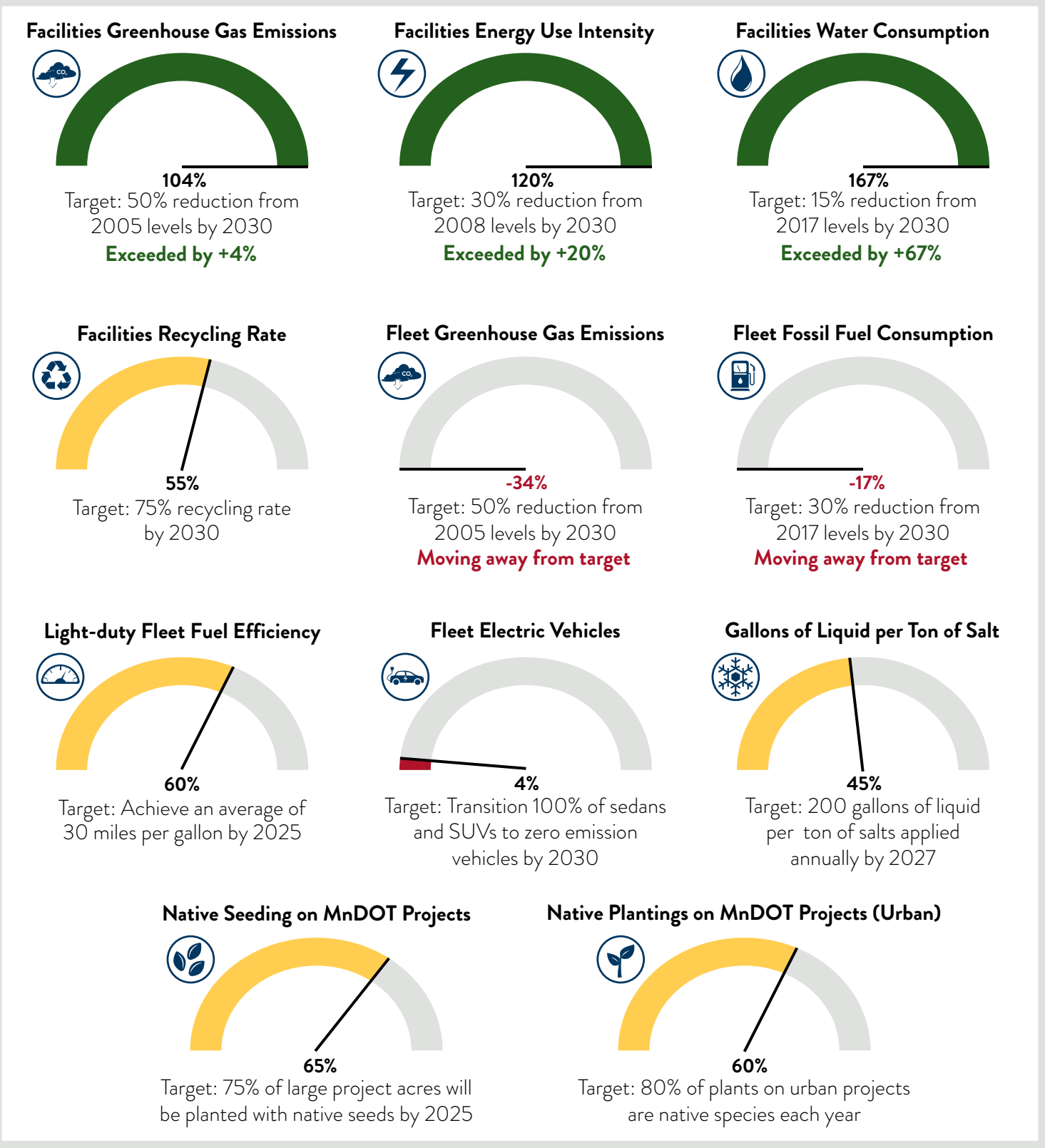
But our work isn't done. In other critical areas, we've made progress, but are still far from where we need to be. Now is the time to accelerate. We must firm up our action plans, move the needle, and advance these priorities with the same determination that brought success in our facilities.

Our progress is possible because of collaboration within MnDOT, across state agencies, and with industry partners. Now, let's take the next step. Together, we can build a transportation system that serves Minnesota today and safeguards its future.

Summary of 2024 Results

The dashboard below shows MnDOT’s 2024 sustainability performance across all focus areas, with gauges tracking progress toward targets since the baseline year. Details on targets and trends appear throughout the report.

Figure 1: MnDOT Sustainability Progress Dashboard.



Introduction



MnDOT's mission is to connect and serve all people through a safe, equitable, and sustainable transportation system, meeting today's needs while preparing for tomorrow. Sustainability is one of our core values, guiding decisions that create a transportation system ready for the future.

Transportation is essential to Minnesota's economy and quality of life, but it also has environmental impacts, from greenhouse gas emissions to resource use. As one of the state's largest agencies, MnDOT has a responsibility to lead by example. By improving how we operate, we can reduce costs, protect public health, and support statewide climate goals while making our infrastructure more resilient and efficient.

This 2024 MnDOT Sustainability Report focuses on operational sustainability, how we manage the resources, facilities, fleet, and construction practices that support our transportation system. Operational sustainability means reducing the environmental footprint of MnDOT's day-to-day activities while continuing to deliver safe, reliable service. It includes using energy and water wisely, cutting emissions, conserving resources, and planning for climate resilience.

Guiding Statutes and Executive Orders

MnDOT's sustainability efforts are guided by [Executive Order 19-27](#), established in 2019, which set statewide sustainability targets and directs agencies to reduce emissions, conserve resources, and limit environmental impacts. These targets are reviewed and updated as needed. The [Statewide Multimodal Transportation Plan \(SMTP\)](#), Minnesota's highest-level transportation policy plan, reinforces this direction by outlining a long-term vision for a safe, equitable, and sustainable transportation system.

To advance these objectives, MnDOT established the Sustainable Transportation Steering Committee (STSC) in 2016 to provide leadership and strategic oversight on critical issues such as greenhouse gas reduction, climate adaptation, and public health. STSC meetings were previously paused, but resumed in the spring of 2025 and continues to serve as an important framework for collaboration to accelerate MnDOT's sustainability goals.

What's Covered in This Report

The report highlights progress and challenges in four key operational areas:

- **Facilities:** Managing energy, water, and waste across more than 900 buildings to improve efficiency and reduce emissions.
- **Fleet:** Lowering fossil fuel use, improving fuel efficiency, and transitioning to cleaner vehicle technologies.
- **Environment:** Protecting natural systems through practices like using native vegetation to support biodiversity and manage stormwater.
- **Construction:** Innovating with pavement designs and materials that conserve resources, reduce greenhouse gas emissions, and extend pavement life.

Each section includes an overview of MnDOT's strategies, performance metrics, and analysis of 2024 results.



Mankato Headquarters

Facilities

Overview

MnDOT is committed to managing resources efficiently across its 900+ facilities, which span over 6.6 million square feet. In alignment with [Executive Order 19-27](#), established in 2019, the agency sets site-specific goals to reduce energy use, water consumption, waste generation, and facility greenhouse gas emissions. These efforts not only support environmental sustainability but also lead to significant cost savings by lowering utility expenses, reducing maintenance needs, and extending the lifespan of equipment and infrastructure.

DID YOU KNOW?

MnDOT manages about 60 wastewater treatment systems and 75 drinking water systems across the state, including two facilities that reuse salty water.

MnDOT's buildings have a total replacement value of \$1.65 billion, that's the estimated cost to rebuild all its facilities today using current construction standards, materials, and labor.

Metrics



Facilities Greenhouse Gas (GHG) Emissions

The total amount of carbon pollution released each year from the energy used in MnDOT buildings.



Energy Intensity

The total amount of electricity, natural gas, and propane MnDOT buildings use each year for every square foot of space.



Water Consumption

The total amount of water used each year in MnDOT buildings, for things like restrooms, cleaning, and equipment.



Municipal Solid Waste Recycling Rate

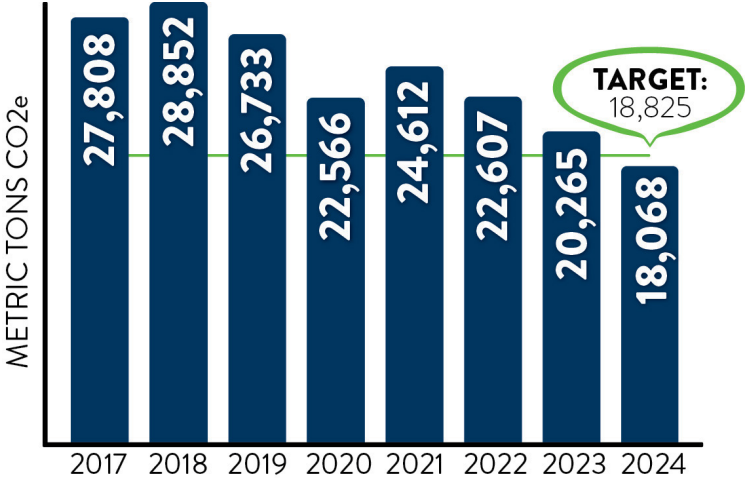
The percentage of everyday office waste like paper, cardboard, and cans recycled each year at MnDOT buildings, excluding specialty items.

Measuring Progress

Operating Minnesota's government, like any large organization, takes a lot of energy and resources, and creates pollution that contributes to climate change. To help reduce these impacts, [Executive Order 19-27](#) was established to direct all state agencies to take action and lead by example with more sustainable practices. Enterprise-wide progress on reducing our impacts is publicly reported on the [Department of Administration's Office of Enterprise Sustainability website](#). MnDOT tracks performance by entering energy, water, and waste data into B3 Benchmarking, a tool that measures and compares building sustainability to support transparency, progress, and alignment with statewide goals.

Facility Greenhouse Gas Emissions

Figure 2: Facility GHG Emissions. Source: B3 Benchmarking.



Analysis

MnDOT exceeded its goal of reducing GHG emissions at agency facilities. A milder winter in 2024 reduced the need for heating. In addition, MnDOT continues to improve energy efficiency through regular building tune-ups (retro-commissioning), system upgrades, improved building controls, and motion sensors that help reduce unnecessary lighting.



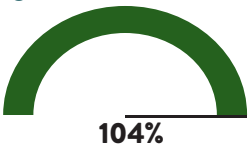
Target

Reduce GHG emissions by 50% from 2005 levels by 2030. *Earliest available data is 2008*

Results

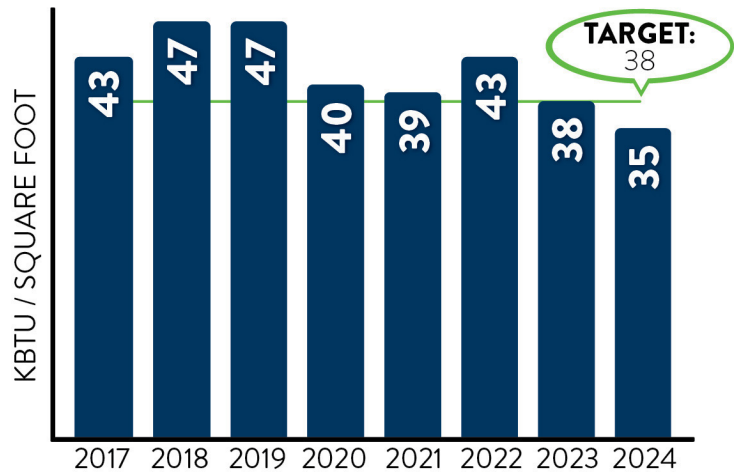
From 2005 to 2024, MnDOT reduced GHG emissions from its owned and operated facilities by 52%

Progress



Energy Intensity

Figure 3: Energy Intensity. Source: B3 Benchmarking.



Analysis

MnDOT exceeded its goal of energy intensity reduction at agency facilities. In addition to the changes that helped lower GHG emissions, this improvement is also due to thoughtful scheduling of heating and cooling systems to match work hours, maintaining steady indoor temperatures, and ongoing monitoring of energy use to identify and address inefficiencies.



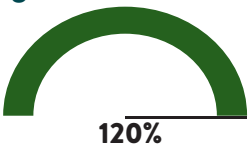
Target

By 2030, reduce building energy intensity use per square foot by 30% from a 2008 adjusted baseline.

Results

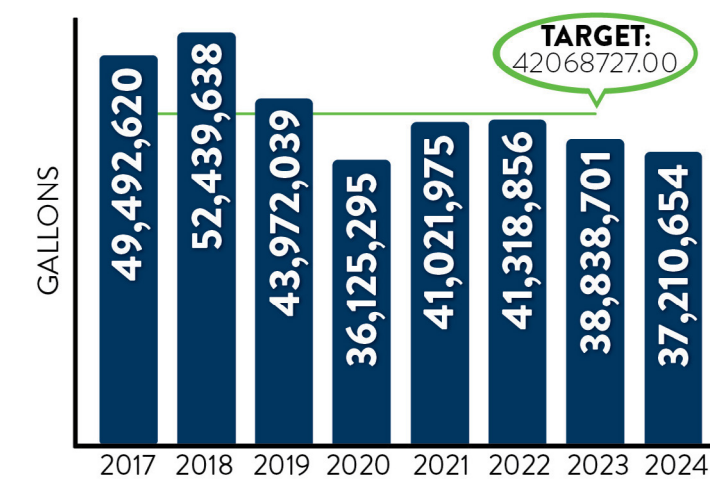
From 2008 to 2024, MnDOT reduced energy intensity by 36%.

Progress



Water Consumption

Figure 4: Water Consumption. Source: B3 Benchmarking.



Analysis

MnDOT exceeded its goal for reducing water use at agency facilities. MnDOT made water-saving changes like installing high-efficiency fixtures and designing new buildings without irrigation systems. While water use is down for now, future increases in brine production (used to reduce road salt) may raise water use again, even though brine is better for the environment.



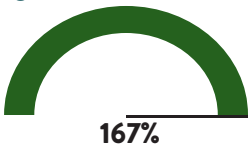
Target

Reduce building water use by 15% from 2017 levels by 2030.

Results

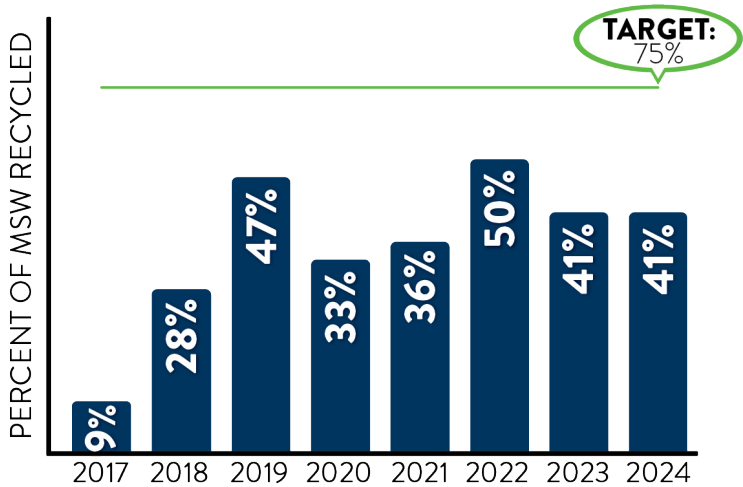
From 2017 to 2024, MnDOT decreased water use by 25%

Progress



Municipal Solid Waste Recycling Rate

Figure 5: Municipal Solid Waste Recycling Rate. Source: B3 Benchmarking.



Analysis

MnDOT is making progress on municipal solid waste recycling, achieving 55% of the target, but remains below the goal. A key challenge is that some areas of the state have limited access to recycling and composting services. Moving forward, MnDOT will focus on facilities with lower diversion rates, particularly those below 60%, and will continue collaborating with other state agencies to share information about available haulers near MnDOT sites.



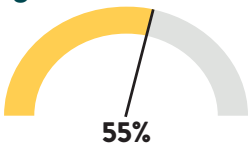
Target

Achieve 75% recycling and composting rate by 2030.

Results

In 2024, MnDOT recycled or composted 41% of municipal solid waste at facilities.

Progress





Chaska truck station



Maple Grove truck station



St. Croix Rest Area

Fleet

Overview

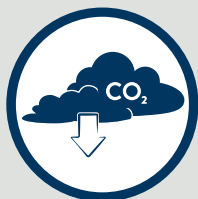
As part of its sustainability efforts, MnDOT is committed to reducing fossil fuel use and lowering greenhouse gas emissions across its fleet. Our fleet includes a wide range of vehicles and equipment. We have snowplows, trucks, sedans, airplanes, and specialized machinery for roadway maintenance, material delivery, inspections, transportation, and public services. These vehicles run on gasoline, diesel, and/or electricity. Strategies include improving fuel efficiency, expanding the use of electric vehicles, and exploring cleaner fuel alternatives.

DID YOU KNOW?

MnDOT is one of the few states that builds its own snowplow blades in-house. With a fleet of around 850 plow trucks, our team assembles over 57 new plows each year, tailored to Minnesota's unique winter needs.

Most of MnDOT's light-duty vehicles, and many medium, and heavy-duty ones, are equipped with Geotab telematics. These devices help monitor idling, speed, and driver safety, supporting smarter, more sustainable fleet operations.

Metrics



Fleet Greenhouse Gas (GHG) Emissions

Annual carbon emissions from MnDOT's fleet, including snowplows, trucks, airplanes, and other vehicles and equipment used for agency operations.



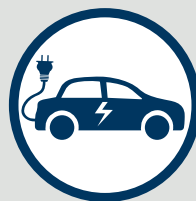
Fleet Fossil Fuel Use

The total amount of gasoline, diesel, and other fossil fuels used each year by MnDOT fleet vehicles and equipment.



Light-duty Fuel Efficiency

The average number of miles MnDOT's light-duty vehicles, such as cars and small trucks, can travel per gallon of fuel.



Electric Vehicles

The total number of electric and plug-in hybrid sedans and SUVs in MnDOT's light-duty fleet.



Employee-owned Auto Mileage

The total number of miles MnDOT employees drive their personal vehicles for work-related travel each year.

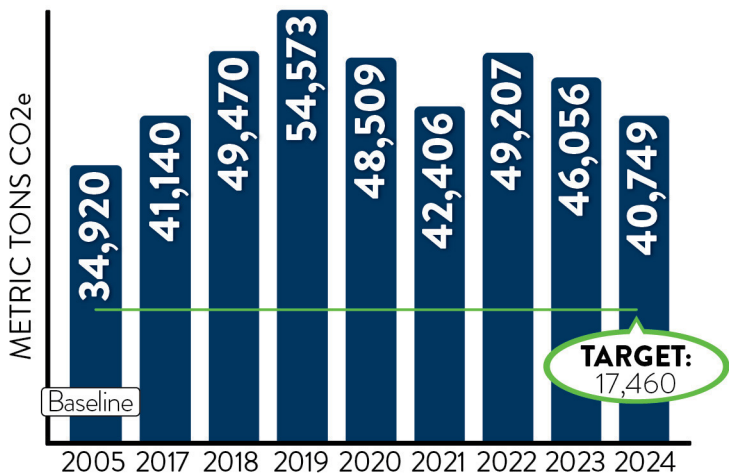
Measuring Progress

MnDOT tracks several key metrics to monitor progress in reducing fleet emissions and fossil fuel use. These include total greenhouse gas emissions, fossil fuel consumption, fuel efficiency of light-duty vehicles, and the number of electric and plug-in hybrid vehicles in the fleet. This year's report also adds aviation fleet data for all reporting years, giving a more complete and accurate picture of MnDOT's total emissions. As part of Executive Order 19-27, state agencies are expected to demonstrate reductions in transportation-related emissions over time. The 2023 vehicle purchasing hierarchy supports this by guiding agencies to prioritize cleaner vehicle options. These metrics help MnDOT evaluate the impact of its fleet decisions and identify opportunities for continued improvement.



Fleet Greenhouse Gas Emissions

Figure 6: Fleet GHG Emissions. Source: SRT, M5.



Analysis

MnDOT is moving away from its fleet GHG reduction goal. Emissions have increased 17% above the baseline year, even though they dropped 12% between 2023 and 2024. Overall GHG emissions remain high because of increased fleet activity. Weather has influenced outcomes. Milder winters in 2023 and 2024 reduced snowplow use, which temporarily lowered emissions. Long-term progress will require strategies beyond weather-related fluctuations.



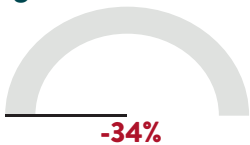
Target

Reduce GHG emissions from fuel used by MnDOT vehicles by 50% from 2005 levels by 2030.

Results

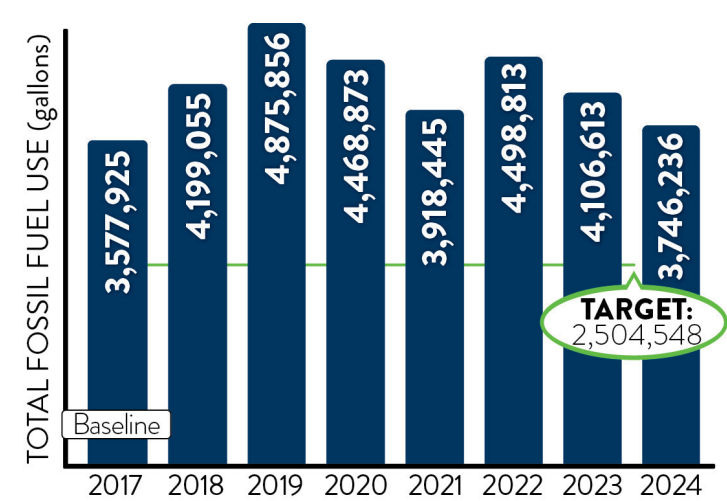
From 2005 to 2024, GHG emissions from MnDOT owned and operated fleet increased by 17%.

Progress



Fleet Fossil Fuel Use

Figure 7: Fleet Fossil Fuel Use. Source: SRT, M5.



Analysis

Fossil fuel use in MnDOT’s fleet is still above the baseline, even with a 12% decrease from 2023 to 2024. Overall consumption remains high because vehicles are being used more often to meet growing service needs, and milder winters create a short-term dip in fuel demand. To make steady progress, MnDOT plans to improve how vehicles are assigned and scheduled, reduce unnecessary idling, expand the use of lower-carbon fuels where electric options aren’t yet available, and make greater use of telematics to monitor driving patterns and identify opportunities to reduce fuel use.



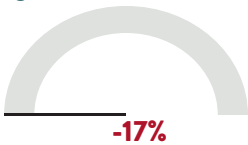
Target

By 2030, reduce fossil fuel use from MnDOT vehicles by 30% from 2017 levels.

Results

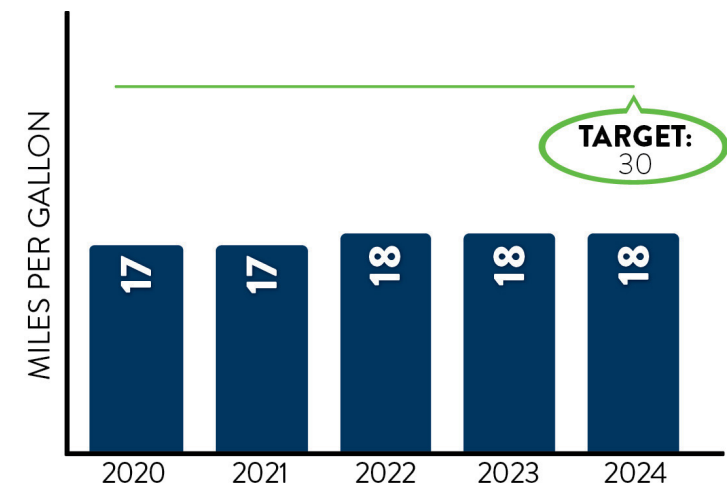
Between 2017 and 2024, fossil fuel use by MnDOT vehicles has increased by 5%.

Progress



Light-duty Fuel Efficiency

Figure 8: Light-duty Fuel Efficiency. Source: SRT, M5.



Analysis

MnDOT’s light duty fleet averages 18 miles per gallon, reaching 60% of the fuel efficiency goal. This reflects progress, but the target has not yet been met. Improvements are expected as older sedans are replaced with newer, more efficient and electric models. MnDOT uses telematics to monitor performance and reduce idling, and is adding electric trucks where appropriate. Because of high costs, the agency evaluates truck necessity and often chooses fuel efficient SUVs instead. These strategies aim to close the gap and meet future efficiency targets.



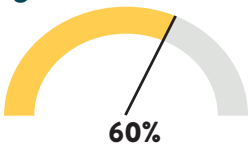
Target

Achieve an average light-duty fuel efficiency of 30 mpg or more by 2025.

Results

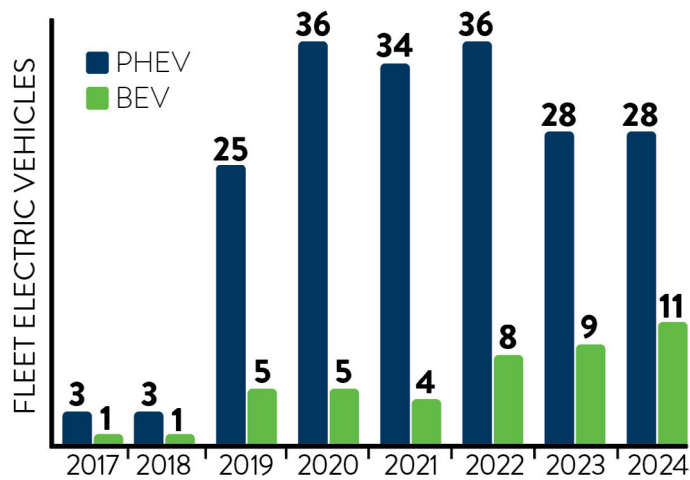
Average light-duty fuel efficiency stayed the same from 2023 and 2024, averaging 18 miles per gallon (mpg).

Progress



Electric Vehicles

Figure 9
: Fleet Electric Vehicles. Source: SRT, TAMS Fleet.



Analysis

MnDOT has made early progress toward its electric vehicle transition, achieving 4 percent of the goal but remaining far below the target. In 2024, MnDOT added two battery electric vehicles (BEVs) while the number of plug-in hybrids (PHEVs) stayed the same. Despite this modest growth, the shift to zero emission vehicles faces hurdles such as operational demands, limited charging infrastructure, supply chain disruptions, and timing of vehicle replacements. To address these challenges and accelerate progress toward the 2030 goal, MnDOT is developing a comprehensive fleet transition plan.



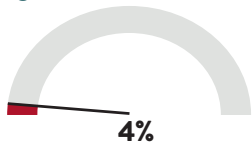
Target

By 2030, transition 100% of MnDOT sedans and SUVs to zero emission vehicles.

Results

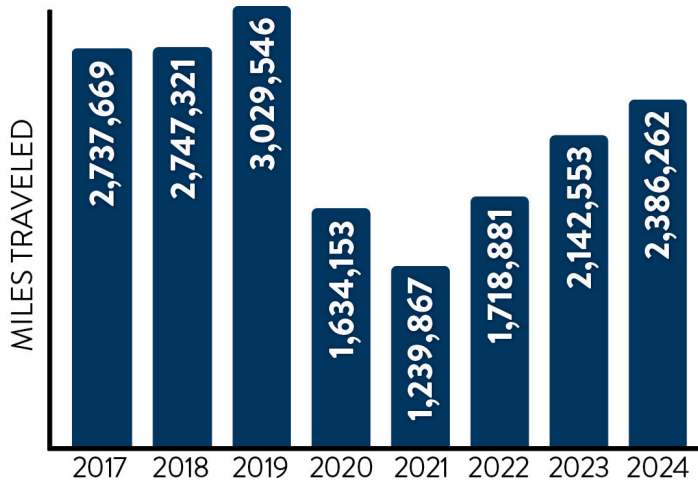
In 2024, MnDOT had 73 sedans, 152 SUVs, 53 vans, and 764 pickups, all considered light-duty vehicles. Of these, 4% were BEVs or PHEVs.

Progress



Employee-owned Auto Mileage

Figure 10: Reimbursable Employee-Owned Auto Mileage.
Source: MnDOT Finance Web Reports



Analysis

While there is no formal target for this metric, employee-owned auto mileage has declined overall since the baseline year, reflecting MnDOT’s efforts to reduce travel impacts. However, mileage increased by 11% from 2023 to 2024 as in-person meetings rebounded after the pandemic. Personal vehicle-fuel use is not consistently tracked, but the agency encourages carpooling and offers hybrid meeting options to support more sustainable travel.



Results

Between 2017 and 2024, employee-owned auto mileage decreased by 13%.

This metric requires further evaluation and target-setting to ensure progress.

Environment

Overview

MnDOT reduces environmental impacts by integrating ecological practices into how roads are planned, built, and maintained. Planting native vegetation along roadsides helps manage stormwater, prevent erosion, support pollinators, and improve biodiversity. These species are well adapted to Minnesota's climate and generally need less maintenance. MnDOT also works to reduce salt use during winter to protect water quality from chloride pollution. State policies encourage low-maintenance, pollinator-friendly vegetation and careful winter material management. Together, these efforts support environmental health, improve air and water quality, and build climate resilience.

DID YOU KNOW?

MnDOT uses prescribed burns to manage roadside vegetation and promote native species regeneration.

MnDOT develops custom native plant mixes to suit specific soil, climate, and functional needs across Minnesota's roadsides

MnDOT has partnered with the Minnesota Pollution Control Agency to create Smart Salting training that balances winter road safety with environmental protection.

Metrics



Native Seedings

Percent of project acres with native seedings.



Native Plantings

Annual percentage of plantings that are native



Gallons of Liquid per Ton of Salt

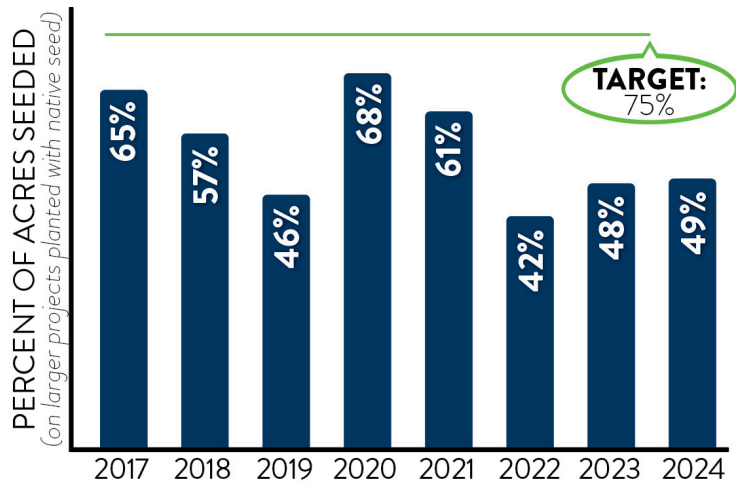
The amount of liquid de-icer that is used compared to salt to keep roads clear in winter.

Measuring Progress

MnDOT tracks native vegetation through two key measures: the percentage of acres planted with native seeds and the percentage of native plants used in landscaping. MnDOT also monitors winter maintenance sustainability by tracking gallons of liquid de-icer used per ton of salt, an important indicator of efficient and environmentally responsible material use. Updates to design guidance and continued collaboration across teams are helping increase native vegetation use and advance sustainable winter maintenance practices in future projects, ensuring these strategies remain practical and impactful for long-term sustainability.

Native Seeding

Figure 11. Native Seeding. Source: MnDOT's Office of Environmental Stewardship.



Analysis

MnDOT has achieved 65% of its native seeding goal, showing progress but still short of the target. Native seed is a cost-effective way to restore roadside ecosystems and reduce maintenance. These species stabilize soil, prevent erosion, and support environmental health. In 2024, 49% of acres on large projects were seeded with native species, influenced by site-specific needs like salt-tolerant plants. MnDOT's environmental staff work with project teams to select mixes that balance ecological benefits with practical considerations.



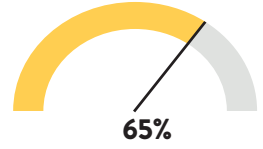
Target

75% of acres are planted annually with native seeds as part of large MnDOT projects by 2025.

Results

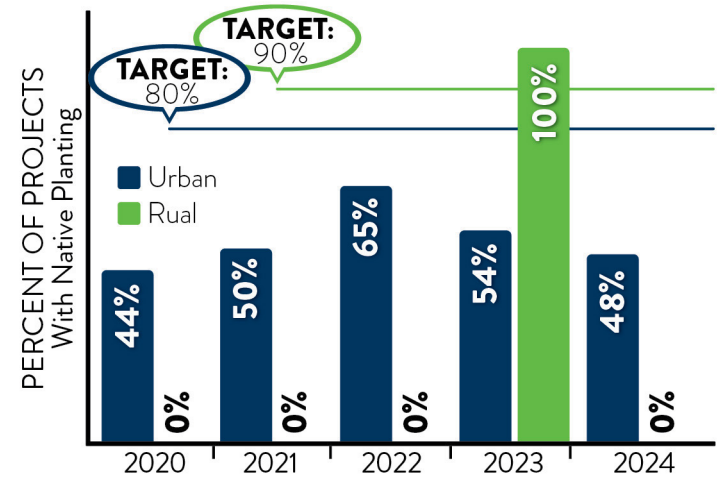
In 2024, 49% of acres on large MnDOT projects were planted with native seeds.

Progress



Native Planting

Figure 12. Native Planting. Source: MnDOT's Office of Environmental Stewardship.



Analysis

MnDOT is 60% toward its goal of planting native species on urban projects, but no rural data was available for 2024. Native shrubs, trees, and perennials provide long-term ecological benefits to transportation landscapes. Although native plants are preferred, they are not always suitable; some sites require plants that tolerate erosion, salt, or visibility constraints. MnDOT's design teams continue working to expand native planting where feasible, and future improvements in planning and guidance are expected to support broader adoption.



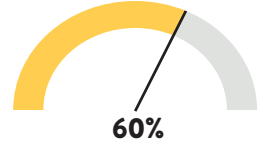
Target

80% native plant material on urban projects and 90% on rural projects annually by 2025.

Results

In 2024, three urban projects cumulatively included 48% native plantings.

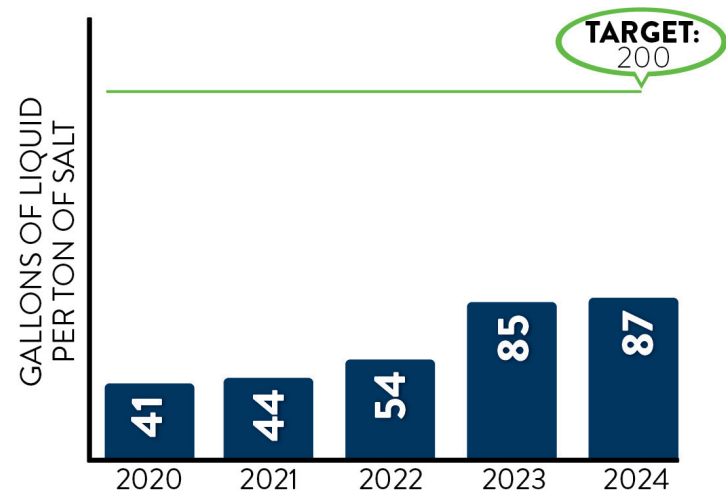
Progress



No rural projects were documented.

Gallons of Liquid per Ton of Salt

Figure 13. Gallons of Liquid per Ton of Salt. Source: Winter Maintenance Report



Analysis

From October 2024 through May 2025, MnDOT used an average of 87 gallons of liquid de-icer, or brine, for every ton of solid salt on state roads. This higher ratio reflects a milder winter, when liquid de-icer works better and less solid salt is needed. Using more brine requires extra water and equipment, but it also reduces the amount of chloride from solid salt reaching lakes and rivers. Meeting MnDOT’s 2027 goal of 200 gallons per ton will require continued investment in equipment, storage, real-time tools, research, and training.



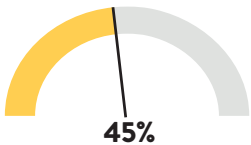
Target

By 2027, 200 gallons of liquid per ton of salt is applied annually to MnDOT roads.

Results

During the winter of 2024-2025, an average of 87 gallons per ton of salt was applied to MnDOT roads.

Progress



Responsible snow removal, Plymouth, MN



Pollinator habitat on I-90 corridor



Native plants along Highway 61

Construction

Overview

MnDOT builds and maintains safe, reliable transportation systems while minimizing environmental impacts. Maintaining roads is more cost-effective and sustainable than full reconstruction because it uses fewer materials and less energy. Reusing materials cuts greenhouse gas emissions, conserves resources, and extends pavement life. MnDOT applies these strategies through preventive maintenance and rehabilitation methods such as reclamation and cold in-place recycling, plus newer practices like Recycled Asphalt Material and Warm Mix Asphalt. The MnROAD Research Facility supports this work by testing and improving innovative pavement designs under real-world conditions, advancing sustainable construction statewide.

DID YOU KNOW?

All waste from MnDOT construction projects must be recycled or disposed of at facilities approved by the Office of Environmental Stewardship.

Minnesota's first experimental project using 70% recycled asphalt pavement (RAP) was on Conway Avenue in Maplewood, and by 1983, RAP was officially allowed under the state's standard specifications.

Metrics



Sustainable Paving Projects

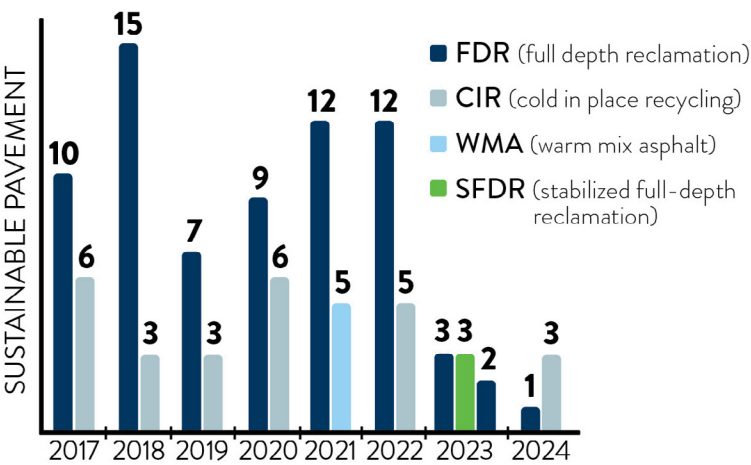
Projects that reuse existing materials and reduce energy use, helping roads last longer while lowering costs and environmental impacts.

Measuring Progress

MnDOT tracks the use of sustainable paving techniques, including full-depth reclamation, cold-in-place recycling, warm mix asphalt, and stabilized reclamation. These methods reuse materials, reduce energy use, and extend pavement life, lowering emissions and costs. Data on project quantities, material savings, and greenhouse gas reductions guide improvements and future strategies. By applying lessons from case studies and sharing best practices, MnDOT continues to expand these techniques statewide, ensuring a safe, functional transportation system with reduced environmental impact.

Sustainable Paving Projects

Figure 14. Sustainable Paving Projects. Source: Bid Summaries.



Analysis

MnDOT is advancing strategies to make roads more sustainable. Warm Mix Asphalt lowers production temperatures, saving fuel and reducing emissions while maintaining quality. Preventive maintenance guidance is being developed to extend pavement life and conserve materials. MnDOT also promotes high RAP (Reclaimed Asphalt Pavement) mixes, which recycle old pavement, though restoring aged binder can increase costs. High RAP is not yet included in MnDOT’s sustainability report but may be added. These efforts depend on road conditions and funding, so MnDOT takes a flexible approach to keep Minnesota roads strong and sustainable.



Results

In 2024, MnDOT used cold in-place recycling on three projects and full-depth reclamation on one project.

This metric requires further evaluation and target-setting to ensure progress.



TH 169 with RAP shoulders

Conclusion

In 2024, MnDOT continued advancing its sustainability goals, surpassing targets in reducing greenhouse gas emissions, energy use intensity, and water consumption at our facilities. These accomplishments reflect the agency's commitment to operational efficiency and environmental stewardship.

At the same time, progress in other areas, such as fleet emissions, fossil fuel consumption, and electric vehicle adoption, remains limited and underscores the need for more urgent and innovative action. While some initiatives, like native planting and sustainable paving projects, show promising momentum, others require renewed focus and collaboration to meet long term objectives.

Looking ahead, MnDOT will continue to track progress and share updates through annual reports and the [MnDOT Sustainability and Public Health website](#). Achieving our vision will depend on bold strategies and strong partnerships across the agency and with external stakeholders. Together, we can build a more sustainable transportation system that benefits Minnesota's communities and environment.



